

Weekly LWC Update 10-28-16

Interested reader: each week, I gather general information for Legislative Water Commission members to help keep them apprised about water issues in Minnesota. It 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 attended and reports I have read, as well as info about upcoming events. During the Legislative Session, it also includes updates on water-related legislation. Any errors or omissions are inadvertent.

Barb Huberty, Director, MN Legislative Water Commission
100 Rev. Dr. Martin Luther King Jr. Blvd., 65 State Office Building
St. Paul, MN 55155
Phone: 651/284-6431
Email: barb.huberty@lcc.leg.mn

Web site: www.lcc.leg.mn/lwc/

MN NEWS

WATER ACTIONS

- Prior Lake American: [Avoid spreading invasive species - Hunters, trappers reminded to take precautions](#)
- Grand Rapids Herald Review: [Free Home Water Conservation Kits Available](#)
- St Croix 360: [Smithsonian water exhibit coming to St. Croix River region](#); it opens at the Audubon Center for the Northwoods in Sandstone on Nov 19
- DNR: the MN Geological Survey has released Part A (geologic mapping and associated databases) of the Washington County Geologic Atlas; it is available [online](#)
- LaCrosse Tribune: [Conservation partnership continues on Riceford Creek](#)
- International Falls Journal: [Littlefork studies water, sewer questions](#)
- Governor Dayton's Office: [Statements from Governor Dayton and Lt. Governor Smith on Minnesota's Top Ten Ranking for Science and Technology](#); MN ranked 7th in the Milken Institute's State Technology and Science Index that ranks states on their science and technology capabilities and ecosystems
- phys.org: [Researchers invent 'perfect' soap molecule that is better for the environment](#) at U of MN; R&D Magazine: [Researchers Invent 'Perfect', Environmentally-Friendly Soap Molecule](#)
- MPCA: [MPCA completes 37 enforcement cases in third quarter of 2016](#); 40% of the violations and the fines had potential impacts on water quality, as follows:
 - Ever Cat Fuels LLC, Isanti, for emergency response, stormwater, hazardous waste and tanks violations, \$30,000
 - East Central Landfill, Mora, for stormwater violations, \$18,657
 - Hearth Development LLC, Little Canada, for stormwater violations, \$10,568
 - Hassan Sand and Gravel Inc., Rogers, for wastewater violations, \$8,000
 - Fiedler Your Pumping Specialist Inc., Royalton, for subsurface septic treatment systems violations, \$7,700
 - Peter W. Hartwig, Welcome, for feedlot violations, \$6,460
 - Knife River Central Minnesota, Sauk Rapids, for wastewater violations, \$5,750
 - Calvin Buddensiek, Springfield, for subsurface septic treatment systems violations, \$5,275
 - City of St. Louis Park, St. Louis Park, for wastewater violations, \$5,023

- Kenneth J. Gabriel, dba Kountry Kare Septic Inc., Park Rapids, for subsurface septic treatment systems violations, \$4,675
- North American Land Co. LLC, Arden Hills, for stormwater violations, \$2,940
- Swift Properties Group LLP, Montevideo, for wastewater violations, \$2,675
- Roberts Management Group, Arden Hills, for stormwater violations, \$1,585
- Mike Badger, dba MC Concrete & Excavating, Rochester, for subsurface septic treatment systems violations, \$1,565
- Barnum wastewater treatment facility, Barnum, for water quality violations, \$700

SURFACE WATER/STORMWATER

- Great Lakes Echo: [Great Lakes shoreline communities get \\$2 million in water improvement grants](#), including \$58K to install 3 large rain gardens in Park Point, Duluth to capture and treat stormwater
- Mesabi Daily News: [Informational Meeting Held on Wild Rice Water Quality Standard](#)
- Strib: [Washington County land purchase helps protect impaired trout stream](#); a conservation agreement will protect 13 acres of land surrounding a critical stretch of Brown's Creek from development
- Whapeton Daily News: [Lawyers argue about construction of Red River diversion](#)
- Brainerd Dispatch: [Zebra mussels now confirmed in Crow Wing County's Kimble Lake](#)
- SouthernMinn.com: [Iron Range community discusses impacts of wild rice water quality standard](#)

WATER SUPPLY

- West Central Tribune: [Minnesota DNR designates Bonanza Valley Groundwater Management Area](#); DNR: news release
- Water Online: [PFC Treatment Befuddles Researchers](#); U of MN researchers are trying to develop effective ways to separate perfluorinated compounds (PFCs) from water since these molecules are difficult to break down and treat

WASTEWATER

- Austin Daily Herald: [Austin looking at possible water treatment upgrades](#); stricter water quality regulations may cost \$20M in upgrades
- Le Sueur News-Herald: [County Board approves septic inspections as part of Le Sueur lakes cleanup](#)
- Strib: [Failing septic systems set off alarms in Randolph, Minn.](#)

ENERGY & WATER

- Rural.mn.org: [Renewable energy in Northeast Minnesota, part 2](#); Minnesota Power, which began as a hydroelectric power company, now claims 25% of its energy production from renewable resources, including 11 hydropower plants, making it the largest hydropower operator in MN

AG & WATER

- TriState Neighbor: [Minnesota ag chief chooses new deputy](#)
- AgriNews: [Water quality marries research](#)
- Cannon Falls Beacon: [Wayne Kieffer family top conservationists](#); recognized by the Dakota County SWCD as their 2016 Outstanding Conservationist

EXTRACTIVE INDUSTRIES

- Strib: [Winona County Board moves closer to a frac sand mining ban](#)
- The Ely Timberjay: [Hoffman talks pipelines and PolyMet](#)
- Strib: [PUC rejects request to reopen public comment on Enbridge pipeline project](#)

OPINIONS

- LinkedIn: ["Uberizing" Watershed Governance](#)
- US Water Alliance: [12 times we don't want to imagine a day without water](#)

BEYOND MINNESOTA

OUT WEST

- USGS: [Estimating spatially and temporally varying recharge and runoff from precipitation and urban irrigation in the Los Angeles Basin, California](#); in this basin, lawn watering and landscaping accounted for >50% of the recharge
- The Fresno Bee: [State letter to farmers demands water to fix nitrate problem](#)
- KPBS: [San Diego City Council Approves Recycled Water Plan](#)
- Strib: [Oregon weighs whether all kids should get outdoor education](#); Oregon may dedicate some lottery proceeds to guarantee a week of Outdoor School for all children; if it passes, Oregon would be the only state with dedicated outdoor education funding

MIDWEST

- Strib: [Wisconsin's lead poisoning rate among kids close to Flint's](#)
- WI State Farmer: [WI dairy industry sets standard for sustainability](#); the goal of the Dairy Strong Sustainability Alliance is to show tangible results in the areas of land use, soil conservation, nutrient management, water quality and use, energy use, animal welfare, food safety, greenhouse emissions, economic health and social responsibility
- Great Lakes Echo: [Great Lakes experts push for restoration funding after election](#)
- WI State Farmer: [GLC brokers Fox River water quality trade](#); the 1st water quality trade between a crop farmer and a waste-water treatment facility has been made on in the U.S side of the Great Lakes basin; Green Bay's Metropolitan Sewerage District will pay Bob Van De Loo and Sons, Inc. of Kaukauna, WI for their use of cover crops, conservation tillage, and buffers to reduce phosphorus coming off his farm
- MinnPost: [How EPA ducked emergency protection for Flint residents as lead levels rose](#)
- The Des Moines Register: [The Iowa way: A clean water solution for all](#)
- PBS News Hour: [Who will pay for water pollution cleanup divides urban and rural Iowa](#)
- NPR: [After A Long Day Of Fighting Climate Change, This Grain Is Ready For A Beer](#); more Kernza™ news

OUT EAST

- Strib: [Florida inks deal with fertilizer maker on sinkhole cleanup](#)
- The Roanoke Star: [Farmers Find Cleaning Waterways Can Help The Bottom Line](#); the project is founded on the premise that helping farmers adopt and implement water and soil protective BMPs helps improve profitability by accessing and retaining sustainability-minded distributors and consumers
- MPR: [Settlement deal reached in 2014 West Virginia chemical spill](#); terms of the settlement must be approved by a judge

NATIONAL

- Daily Mail: [The veins of America: Stunning map shows every river basin in the US](#)
- UPI: [EPA details possible overhaul to lead contamination law for water](#)
- EPA: [EJ 2020 Action Agenda: EPA's Environmental Justice Strategy](#) and [EJ 2020 Action Agenda fact sheet](#); lead disparities and drinking water are noted as significant national environmental justice challenges
- Government Accounting Office: [Water Infrastructure-Information on Selected Midsize and Large Cities with Declining Populations \(web version\)](#); the GAO evaluated the overall water and wastewater infrastructure needs of 10 midsize and large cities with declining populations (defined as a $\geq 20\%$ decline between 1980 and 2010) and learned that their needs generally reflected the needs of cities nationally; however, affordability to address the needs was a larger issue; raising rates coupled with customer assistance programs for low income residents were the most common coping mechanisms; Duluth, the only MN city referenced in the report, had a declining population $< 20\%$

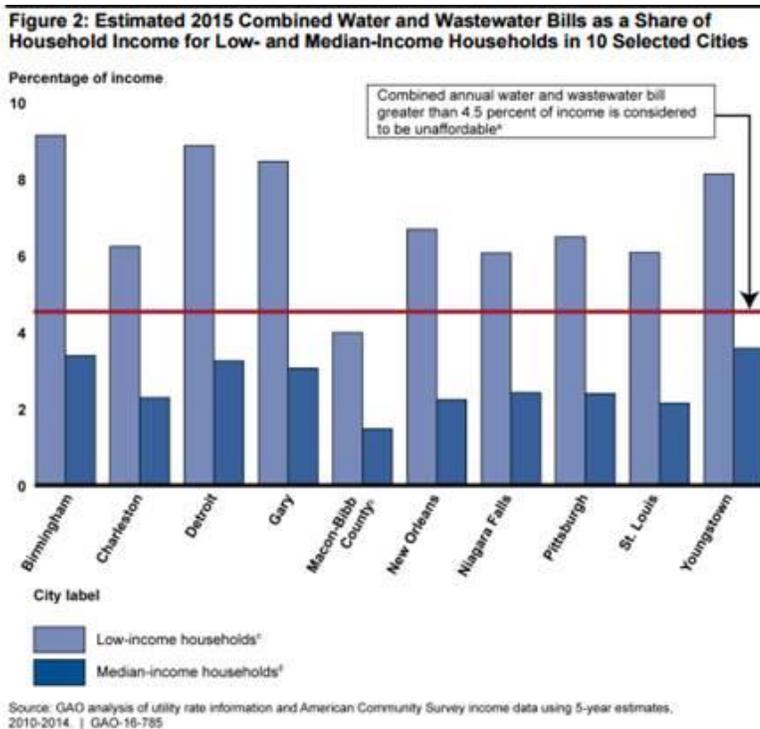
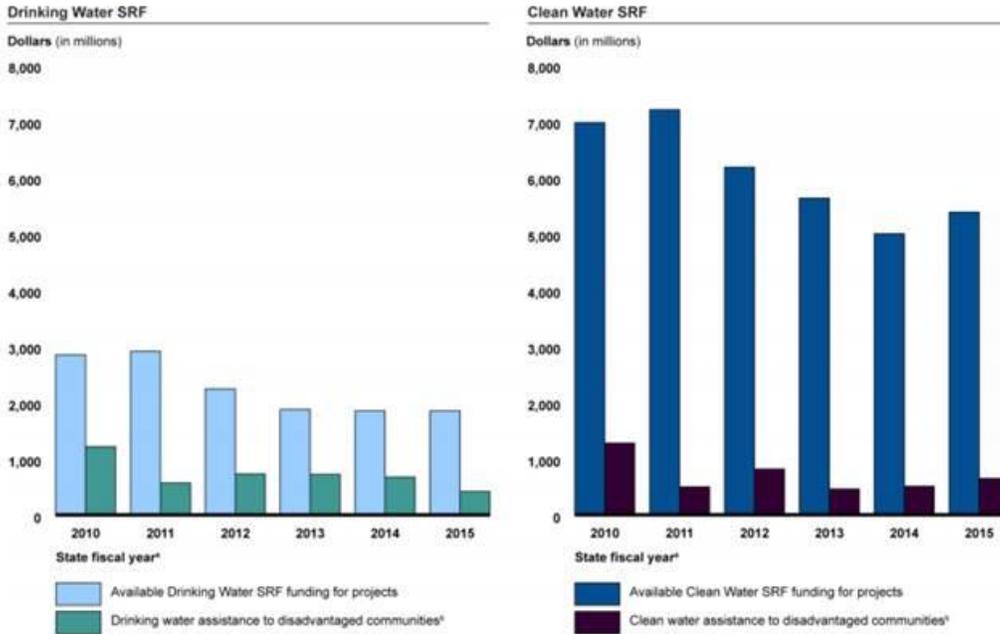


Figure 3: Total Available Drinking Water and Clean Water State Revolving Fund (SRF) Funding for Water and Wastewater Infrastructure Projects Compared with Funds Provided by States to Disadvantaged Communities, State Fiscal Years 2010 through 2015



Source: GAO analysis of Drinking Water SRF and Clean Water SRF National Information Management System reports, 2010 through 2015. | GAO-16-785

GLOBAL

- AgriPulse: [Food companies target water risks in global supply chains](#); MN companies General Mills and Hormel Foods are among the companies participating in the AgWater Challenge, a collaborative initiative organized by World Wildlife Fund and Ceres, where they will submit detailed sustainable sourcing and water stewardship plans and have their sustainability progress monitored
- The Guardian: [UK water firms call for 'do not flush' labelling on wet wipes](#)

MEETINGS

MISSISSIPPI RIVER FORUM

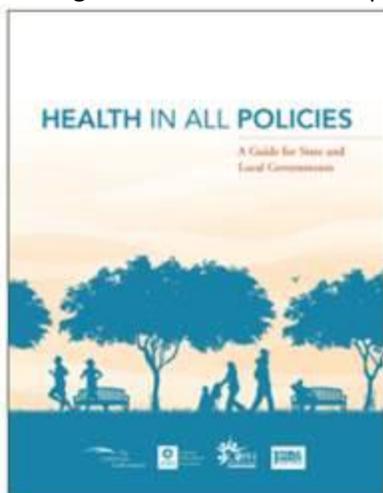
At the annual Mississippi River Forum this month, Dr Shawn Schottler (St Croix Watershed Research Center of the Science Museum of MN) led the workshop with an exploration of the connection between farm economics and conservation. He noted that, despite increasing populations since 1970, conservation investments have kept phosphorus (P) and sediment contamination from getting worse, but that habitat loss, nitrogen (N) levels, and harmful algal blooms have been increasing. According to Dr Schottler, individual best management practices are effective, but there has not been enough collective action to see significantly improving trends. [The Minnesota Nutrient Reduction Strategy](#) outlines P and N reduction goals for each of MN's 3 major watersheds and estimates costs for each strategy and Dr Schottler gave examples of the economic and water quality impacts of implementing several of those strategies. Dr Schottler went on to hypothesize alternative strategies that could keep farms profitable while incentivizing more conservation and living cover: creating mandated markets for perennial crops, tax incentives, and a tiered crop insurance system with lower cost-share portions for higher conservation.

Kate Brauman, U of MN Institute on the Environment, described the importance of ecosystem services, how to establish a monetary value for them, and how to use that valuation to determine the best conservation investments. Companies like Coca Cola that are trying to demonstrate

environmentally sound practices, are beginning to use these tools. Similarly, The Nature Conservancy has developed a return on investment dashboard to determine where they can best invest their limited conservation dollars, which is being deployed with the Mississippi Headwaters Fund projects. Challenges for these approaches remain, though, because people have differing values and receive ecosystem service benefits to varying degrees.

Matt Simcik, U of MN School of Public Health, led a discussion about whether water is a right or a commodity. Water is, of course, a human necessity, but it has a cost associated with it, making it a commodity. But depending on geography and geology, it's availability and quality differ, so people pay different prices for it. In the US, 91.4% of the public gets its drinking water from public utilities (in MN, about 20% of people use private wells).

The workshop closed with a keynote address by Dr Edward Ehlinger, MDH Commissioner, who spoke about the need to advance health equity and optimal health for all Minnesotans (see the "[Health in All Policies Guide for State and Local Governments](#)"). Specific to health equity and water, he noted: there are fewer health protections for private well users, individuals in small towns pay more for water and wastewater systems, downstream users deal with more contamination, fish-dependent cultures face fish consumption limitations, and not all have equal access to water for recreation. In the US, there is more focus on health treatment than prevention and this approach is also true for water. He closed by recommending that we foster communities' capacity to act and their interdependence, starting with making sure diverse voices are present at the table when making decisions.



MPCA INTERIM UPDATE

Staff from the MPCA periodically meet with legislative staff during the Interim to give updates on their activities. At the most recent meeting, the [Public Rulemaking Docket](#) was reviewed and the water rule actions of note are:

- the Water Quality Variance Rule was published as final on 10/17
- the proposed Tiered Aquatic Life Use (TALU) rules are expected to be put on public notice this fall; this rule divides Class 2 streams into three tiers: exceptional use, general use, and modified use (i.e., legally altered waterways) and each classification will have biological criteria (using Index of Biological Integrity scores) assigned to them
- the Sulfate Standards for the Protection of Wild Rice does not have a rule making schedule yet, but MPCA anticipates publishing a notice of hearing and the proposed rules in the first quarter of 2017, with a goal of completing the rule by 1/15/18; MPCA has an LCCMR grant to evaluate the costs of implementing a new sulfate standard, but this won't be completed until June 2018

- amendments to the Water Quality Standards for Class 3 and non-wild rice-related Class 4 waters will be completed by fall 2017
- the final notice of adoption for the new Antidegradation (formerly nondegradation) Water Quality Standards will be published about 11/21/16

An update was also given on permitting for PolyMet’s NorthMet mining project. The environmental review process (i.e., via an Environmental Impact Statement) was concluded in March 2016. The Forest Service, which was co-lead on the EIS, has not made a decision on the land exchange. PolyMet submitted the water quality (NPDES) permit in July, the 401 certification application (for wetlands) and the air quality permit in August. All 3 applications have been determined to be complete, so MPCA staff are proceeding with their technical evaluations. Still to come: the federal 404 wetland permit application that the DNR and Army Corps of Engineers will process, the DNR permit to mine (the permit that includes the financial assurance component), and if construction is authorized, the construction stormwater permit. Opportunities for public input can occur during the permitting and certification processes when the permits are placed on public notice; legal challenges may follow public notice periods.

The state agencies are undergoing a phased, rebranding effort that will visually unify all state agencies and departments; expect to see a name and logo change for the MPCA sometime in the near future that follows this model:



CWC

The October Clean Water Council (CWC) meeting started with a discussion of the constitution’s supplant vs substitute language, as it applies to the Conservation Reserve Enhancement Program (CREP). The CWC had sent a letter to the Governor expressing their concern that use of the Clean Water Fund (CWF) for this purpose constitutes substitution, since prior CREP rounds were funded with bonding. The Governor’s responded via a letter sent by John Jaschke, Director of the Board of Water and Soil Resources (BWSR), which disagrees with the CWCs conclusion because this MN CREP agreement has nothing to do with the past agreements or any future agreements. There was discussion indicating that the Governor, the Legislature, the Lessard-Sams Outdoor Heritage Council, and the CWC need to get together to resolve this issue so it becomes less of a distraction during funding rounds.

Members were then introduced to the Governor’s Year of Water Action by his new Water Advisor, Anna Henderson, and his new Sr Policy Advisor, Stephanie Zawistowski. Anna explained that the agencies are digesting the input received from the Water Summit because the Governor wants to leave a legacy that puts MN on a path to clean water. In addition to the legislative budget and policy initiatives, there are also national and global connections. He wants there to be meaningful work that the public accepts so the actions remain after his term, including improving people’s access to data.

Tom Gile, BWSR, gave an overview of the adopted policies and guidance documents developed to facilitate implementation of the buffer law. Local governmental units are in the process of deciding whether they will elect jurisdiction for enforcement by the end of this year and BWSR is developing a menu of enforcement options available at the local level. He also gave a demonstration of the Buffer Compliance and Tracking Tool (BuffCAT), a web based app that is being used to assess buffer status and will be used to track compliance with the law after compliance deadlines are reached. BuffCAT has been released to 85 assigned users in SWCDs that have permission to review and modify compliance data.

The alternative BMP provision of the law has not yet been incorporated into BuffCAT. Eventually the public will have access to view, but not edit, the data.

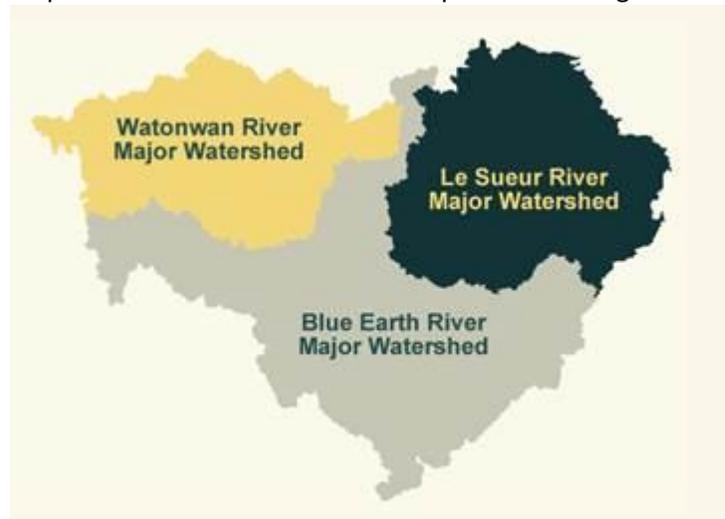
A vote was taken to change the Policy Ad Hoc Committee to a standing committee. CWC members expressed general satisfaction with the policy development process.

The FY 18-19 draft report to the legislature was discussed, minor edits were suggested, and it was adopted. No major process changes were suggested, although suggestions were made to continue to reduce redundancy where possible and provide adequate timelines for submittals, as well as to get clarification on the supplant vs substitution issue before the process begins again.

There will not be a December CWC meeting, so a new chair & vice chair will be selected in November.

CSSR

The Freshwater Society facilitated a workshop for participants to learn about the results from the Collaborative for Sediment Source Reduction (CSSR) in the Minnesota River basin. The Management Option Simulation Model that was developed as part of the CSSR project was unveiled and participants had a chance to use the simple, Excel spreadsheet-based model. It was emphasized that this is a watershed-scale planning tool specifically for the Blue Earth, Le Sueur, and Watonwan watersheds, but that it can be paired with the PTMApp tool to locate BMPs at the field scale. Unlike other models, this model incorporates 7 management options, each with an efficiency and cost/yr over the BMPs lifespan to help planners target where dollars can best be invested. The cost includes the cost of land (\$8K/acre), plus installation and maintenance costs. The final stakeholder meeting for this project will help held in the next few months to provide training to local water planners on how to use this tool.



RAMSEY CONSERVATION DISTRICT

The Ramsey Conservation District held its annual “state of the water” event this month, where attendees learned about: the Year of Water Action; the Past, the Present and the Possible: Water in (and under) Ramsey County; and Climate Adaptation and Threats to Water Resources.

In his review of 13,000 years of water history in Ramsey County, resident Steve Woods (and Director of the Freshwater Society), described historical changes in groundwater, surface water, drinking water and land use. Focusing his talk on the county’s conditions, he noted the shift from understanding we needed data in the 1970’s to improving knowledge in the 1990’s, so that we are primed for action in the 2010’s. He sees those future actions as individuals becoming water stewards to protect surface water, that groundwater waste is reduced, and drinking water is protected from excess fertilizer. Smart water metering and efficient lawn watering and crop irrigation were examples of how this water future is

already becoming apparent. Steve's presentation underscored the importance of sharing locally relevant information to each audience.

District staff also gave updates on the impairment status of local water bodies, changes in lake grades, the locations of 17 community partners grants, aquatic invasive species inspections, and water quality improvements throughout their district.

Bryan Baker, from the US Army Corps of Engineers, explained the need to develop climate resilience, which he defined as the ability to absorb forthcoming changes (drier, warm summers and wetter, warmer winters) while retaining the same functions. He encouraged communities to conduct hydrological vulnerability assessments using their [tools](#). He also reminded attendees that FEMA's crisis funding for flood and drought response is borrowed money.

BWSR BOARD

Every 2 months, the Board of Soil and Water Resources meets to hear activity reports from 10 standing committees and working groups, consider recommendations from the central, northern and southern regional committees and make approvals that facilitate the local water planning process, address recommendations from the wetland conservation committee, and hear reports from cooperating agencies and advisory comments from collaborating organizations. Some notable actions from this month's meeting include:

- the adoption of amendments to the [South Washington Watershed District Watershed Plan](#), which was lauded as providing a new bar for improving online access to watershed maps, monitoring data, project results and resources
- the termination of the Thirty Lakes Watershed District
- the approval of Clay County's Priority Concerns Scoping Document, which was recognized for being one of the first plans in the state to address the effects of tiling and mitigation through drainage water management
- the adoption of a resolution to adopt the Local Road Wetland Replacement Program Status and Management Plan that includes delegating authority to the Executive Director on opening or closing bank service areas, depending on the availability of credits; this decision was related to the absence of funding to develop wetland banks for this program
- the adoption of a new wetland mitigation fees table (this is the first fee increase since 2013)

As the first round of One Watershed One Plan (1W1P) pilot projects are being completed, reports on their process, plans, and lessons learned are being shared with the Board and staff. This month, presentations were made on the [Lake Superior North 1W1P](#) in NE MN and the [Yellow Medicine River Watershed 1W1P](#) in SW MN. Some observations:

- the Lake Superior project was completed prior to the completion of the Watershed Restoration and Protection Strategies (WRAPS) document, but since there are only 5 impaired waters in this watershed and the document's action plan is primarily focused on protection, this was not a hindrance; however, when the WRAPS is completed, the Plan will be revisited to see if changes are warranted
- the Lake Superior area started with over 220 action items and narrowed their focus to 35 targeted implementation plans (the remainder were classified into secondary and regional tiers), noting funding sources and lead roles
- key Lake Superior staff concerns:
 - decide how to measure protection
 - reduce the # of funding streams that need administration (they have 35 now) via a block grant approach
 - recognize that long term change only comes with an educated constituency

- improper culvert placement (particularly under railroads and driveways) negatively affects stream connectivity; further technical/regulatory/training assistance in addressing this may be needed
- need continued state agency assistance (e.g., MDH expertise on identifying where E coli bacteria that cause beach closures are coming from and how to address it)
- The Yellow Medicine River Watershed, by contrast, is full of various impairments needing restoration; this watershed is distinguished by the upper Coteau des Prairie headwaters area, a steep transition zone, and the MN River Valley; their plan has 3 priorities: mitigating altered hydrology, minimizing pollutant transport, and protecting groundwater quality – to be focused in the headwaters area first and working downstream from there
- key Yellow Medicine concerns:
 - starting before the WRAPS was done is not advisable where there are impairments and MPCA needs to facilitate the translation of WRAPS to 1W1P teams
 - this process takes more than 12 months and the in-kind staff commitment is as costly as the consultant
- each area used different consultants and modeling approaches to identify priority areas (Lake Superior used zonation modeling via DNR, Yellow Medicine used the SAM model via their consultant, RESPEC)
- common comments from both areas:
 - the process improved local collaboration and partnering between organizations
 - civic engagement was a lengthy, but positive, process and needs to continue
 - the prioritize/target/measure process used in 1W1P is a better planning approach than the old local water plans
 - shared services and non-competitive funding will be key to implementation

MPCA WASTEWATER PERMITTING LISTENING SESSIONS

In response to comments that the MN Pollution Control Agency staff have received about the confusing and frustrating wastewater treatment facility permitting process, MPCA has been travelling around the state listening to the concerns of operators and consulting engineers. Understanding which parts of the permit are negotiable, how limits are determined, and the high cost of compliance were two key issues raised by attendees at the St Paul session. After a review of the permit process and the regulations behind the development of permit limits, attendees had an opportunity to get their questions answered. Some recommendations that evolved from the discussion:

- give treatment plants the opportunity for phosphorus trading credits so the reduction happens where the largest sources are (Princeton has done this and EPA is cautious about trading approaches)
- meet with permittees to explain how the draft limits were calculated as soon as they have been determined and be more transparent about explaining how the reasonable potential to pollute was derived
- increase the timeframe that facilities have to review the draft permit before it is put on public notice; honor permittee requests for extensions
- add an economic component to the 3 yr triennial review of water quality standards
- maintain reliable funding for all PFA programs funding wastewater facility improvements (increasing grants and decreasing the local match was proposed in last year's bonding bill, which did not pass)
- consider merging related permits into one permit (e.g., industrial stormwater permit merged into wastewater)

MPCA will be preparing a summary of input from all their listening sessions, once completed. As a future activity, MPCA will be establishing a focus group of operators to discuss how to address managing chloride levels in wastewater (chloride comes from water softeners).

REPORTS

STATE OF MN WATER

- DNR: 10/23 [Stream Flow Report](#)
- National Drought Mitigation Center: 10/25 [Drought Monitor](#)

UPCOMING EVENTS

- Oct 1-Nov 13: **Smithsonian Water/Ways Exhibit** at the [Goodhue County Historical Society](#)
- Nov 16-18: **MN Association of Floodplain Managers 2016 Annual Conference**; \$160; Kelly Inn, St Cloud; brochure [here](#); register [here](#)
- Nov 17: **MN's Water Reuse Stakeholder Meeting** (open to the public); 1:30 – 4:30; MPCA Board Room
- Nov 17: **Minnesota River Congress** meeting; Mankato; networking fair @ 4:30 & meeting @ 7:30; for more information contact Scott Sparlin @ sesparlin@gmail.com, 507-276-2280; register [here](#)
- Nov 19-Jan 1: **Smithsonian Water/Ways Exhibit** at the [Audubon Center of the Northwoods](#) in Sandstone
- Dec 1-3: **MN Association of Watershed Districts Annual Meeting & Trade Show**; Arrowwood Conference Center, Alexandria; Drainage workshop on 12/1; conference agenda, costs, and registration [here](#)
- Dec 4-6: **MN Association of Soil and Water Conservation Districts Annual Meeting & Trade Show**; \$145 to \$220 (depending on days participating); Double Tree Hotel – Bloomington; details [here](#)
- Dec 5-6: **Association of MN Counties Annual Conference**; Hyatt Regency Minneapolis; \$375 before 11/4 & \$400 after; schedule [here](#); registration [here](#)
- Jan 17-19: 34th Annual **Red River Basin Land & Water International Summit Conference** “Passport to Progress: Thinking Beyond Our Boundaries”; \$225, Ramada Plaza Hotel in Fargo; more info [here](#)
- Jan 23-24: **MN Water Well Association's 95th Annual Trade Show and Convention**; Minneapolis Marriott NW; more info to come [here](#)
- Feb 16: U of MN Extension's **Nitrogen: Minnesota's Grand Challenge and Compelling Opportunity**; Verizon Wireless Center (1 Civic Center Plaza, Mankato); details to come [here](#)
- Mar 7-9: 33rd Annual **MN Rural Water Association Water & Wastewater Technical Conference**; St Cloud; details to come [here](#)
- Apr 17: **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)
- May 9: Minnesota Day at the **National Climate Adaptation Forum**; registration can be found [here](#)