

Weekly LWC Update 11-4-16

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.

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MN NEWS

WATER ACTIONS

- MPCA: [Put the care in personal care products](#) and
- MDH: [Eat better, walk the dog, properly dispose of unused antibiotics to honor global One Health Day](#) to combat improper antibiotic use that can contaminate water and increase disease resistance
- Austin Daily Herald: [With trash bag in hand, everyone can help with water quality](#)
- MPCA: [Lowell Deede and the murky water](#)

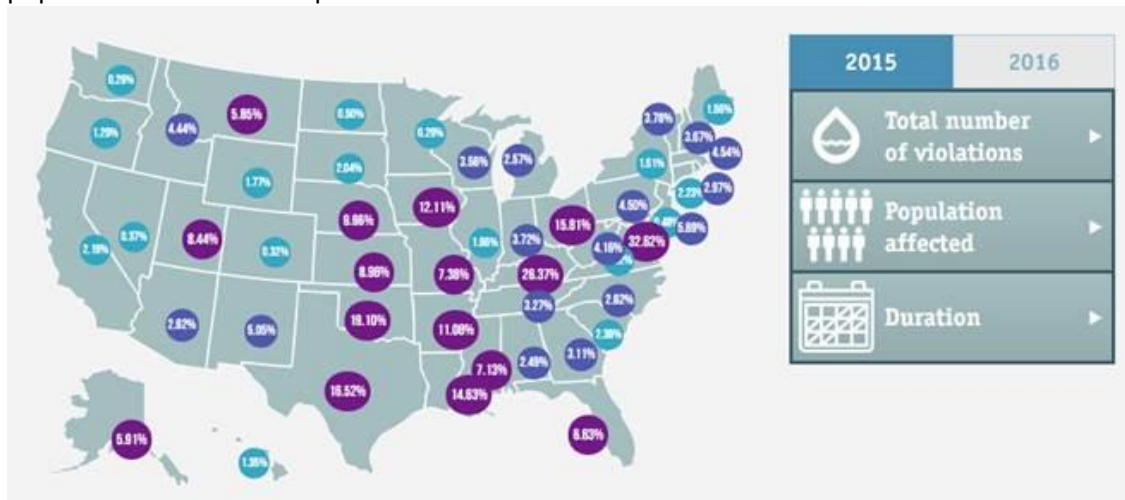
SURFACE WATER/STORMWATER

- BWSR: [Tools for Success: BuffCAT](#); the buffer assessment and compliance tracking tool
- Pines and Lakes Echo: [Zebra mussels now confirmed in Crow Wing County's Kimble Lake](#)
- Echo Press: [DNR Report: Drawdown underway on Pope County lake](#)
- Pine and Lakes Echo: [Thirty Lakes Watershed District terminated](#)
- BWSR: [Central High School Beautifies Campus While Protecting the Mississippi River](#)
- KNSI: [Crews Investigate Spill Into River](#) and St Cloud Times: [Chemical leak in river slows, source still unknown](#)
- AgriNews: [Could soybeans solve Minnesota's infrastructure problems?](#); Why is this water news? Historically, sealants were made from coal tar and poly-aromatic hydrocarbons (PAHs) were transported from roads sealed with those products via stormwater and into stormwater treatment basins. In some areas of the state, dredged sediments have PAH concentrations that exceed hazardous waste levels, making it very expensive to dispose of them. Could this agriculturally derived alternative mitigate future sediment disposal problems?
- InfoSuperior: [Michigan, Wisconsin, Minnesota Senators Push for Great Lakes Science](#)
- MASWCD: ["The Dirt" on Dakota SWCD](#)-Renewed focus on evaluation leads to continuous improvement

WATER SUPPLY

- Whapeton and Breckenridge Daily News: [Breckenridge's aging water plant part of nationwide infrastructure crisis](#); watch for a CBS report on the country's aging infrastructure systems that will be aired on "CBS Sunday Morning"

- South Washington County Bulletin: [PFC office hours with MDH and MPCA in Cottage Grove](#)
- White Bear Press: [Million dollar question: What does USGS study show?](#)
- MDH Waterline: [New Brighton Still Facing, Overcoming Water Challenges](#); About 3 decades ago, the Army paid for the City of New Brighton's water treatment plant to treat pollution coming from the Twin Cities Army Ammunition Plant. With the appearance of 1, 4 dioxane last year, new treatment needs emerged and until that new process is developed and operating fulltime, New Brighton switched to Mississippi River water from Minneapolis Water Works. To prepare for the July 2016 water source switch, New Brighton added the same corrosion inhibitor that Minneapolis, ensured it was working to coat the pipes, did additional lead and copper monitoring, and communicated with residents. New Brighton plans to use Minneapolis water for 2 years until the new dioxane treatment system is fully operational.
- MN Rural Water Association: [Today – Fall 2016](#); this quarterly magazine always has useful articles about water and wastewater issues in Greater MN; in this issue, take note of the article [In a Battle Against Nitrates](#), which highlights the collaborative approach taken by the Rock County Rural Water District and farmers within the wellhead protection area to combat rising nitrate levels in groundwater
- Twin Cities Daily Planet: [Place-based art project Water Bar addresses disparities in drinking water access](#)
- News Deeply: [Social Norms Messaging: How Water Agencies Can Change Our Habits](#); WaterSmart is the system being used in Shoreview
- Strib: [Two park commissioners question continued pumping at Hiawatha](#)
- Market Wired: [Infographic Insights: What's Really in Your Drinking Water?](#); FluxAqua evaluated EPA data and found that, in 2015, MN had 15 drinking water violations affecting 0.29% of the population - one of the top 5 states with clean water



WASTEWATER

- Le Sueur News Herald: [County Board approves septic inspections as part of Le Sueur lakes cleanup](#)
- USDA: [USDA Announces Rural Water and Waste Infrastructure Investments](#); including \$13,987,000 in loans and \$5,813,816 in grants to these MN locations:

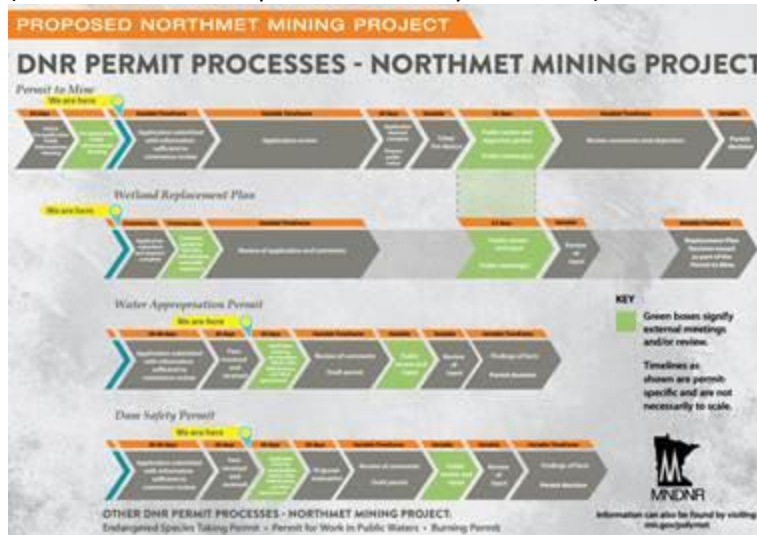
Brownton, city of	Water, Sewer, and Storm Improvements	\$5,309,000	\$724,000
Dalton, city of	Water and Sewer Improvements	\$1,915,000	\$421,000
Echo, city of	Water, Wastewater, Tower	\$1,162,000	\$1,121,000
Littlefork, city of	Littlefork Sewer and Water	\$4,443,000	\$979,000
Ostrander, city of	Water and Sewer Improvements	\$907,000	\$903,000
White Earth Band of Chippewa Indians	Water: Naytahwaush	\$251,000	\$1,665,816

AG & WATER

- MASWCD: [“The Dirt” on Wadena and Otter Tail SWCDs](#); Helping farmers master the science of irrigation
- BWSR: [Everyone Wins In Lincoln County](#); a wetland restoration project that treats cropland drainage and runoff
- Pope County Tribune: [New system is good for cows, environment](#); the Dorrich Dairy has installed a new manure separator to remove 35 to 40% of the moisture, saving 1MG of well water/year; another bonus – the lagoon pit capacity is increased, which in rainy years can help prevent overflows
- MDA: [Pesticide Fertilizer Management Division Update](#)
- Beef Magazine: [2016 BEEF Trailblazer Award: Grant and Dawn Breitreutz](#)
- Fillmore County Journal: [Partnerships will help Minnesota corn farmers become the most sustainable and environmentally responsible in the U.S.](#)
- AG Week: [Perkins family to be honored for efforts on rural Worthington, Minn., land](#)
- Brownfield: [Certification Program Addresses Water Quality Concerns in Minnesota](#); using MDA’s 2015 profile of MN agriculture, which shows 74,542 farms, the MAWQCP has now certified nearly 0.04% of farms
- BWSR: [The Updated Minnesota Public Drainage Manual Goes Live](#); 25 years after its original publication, the Minnesota Public Drainage Manual has been updated and published in a wiki format; this is a guidance document, not rule or law, and provides assistance to drainage authorities as they administrate Chapter 103E drainage systems
- Great Falls Tribune: [Which states have most land in CRP?](#); USDA data shown below:
 - [Top 10 CRP states by acreage in 2015](#): 1. Texas 3,040,830 acres; 2. Kansas 2,182,877 acres; 3. Colorado 1,912,358 acres; 4. North Dakota 1,523,997 acres; 5. Montana 1,499,179 acres; 6. Iowa 1,484,593 acres; 7. Washington 1,310,586 acres; **8. Minnesota 1,151,306 acres**; 9. Missouri 1,011,271 acres; 10. South Dakota 926,266 acres.
 - [Top 10 CRP states by acreage in 2016](#): 1. Texas 2,990,982 acres; 2. Kansas 2,125,636 acres; 3. Colorado 1,853,219 acres; 4. Iowa 1,688,344 acres; 5. North Dakota 1,543,202 acres; 6. Montana 1,408,655 acres; 7. Washington 1,220,527 acres; **8. Minnesota 1,153,628 acres**; 9. Missouri 989,947 acres; 10. South Dakota 973,947 acres.
 - [Top 10 CRP states by rental payments in 2015](#): 1. Iowa \$221,360,786; 2. Illinois \$130,137,075; 3. Texas \$116,813,968; **4. Minnesota \$104,622,294**; 5. Missouri \$102,137,069; 6. Kansas \$95,407,735; 7. Washington \$81,125,868; 8. North Dakota \$69,624,825; 9. Colorado \$69,091,940; 10. South Dakota \$67,276,745.
 - [Top 10 CRP states by rental payments in 2016](#): 1. Iowa \$243,650,298; 2. Illinois \$135,941,917; 3. Texas \$111,777,758; **4. Minnesota \$102,468,830**; 5. Missouri \$102,027,564; 6. Kansas \$91,946,668; 7. Washington \$76,262,422; 8. South Dakota \$72,172,457; 9. North Dakota \$67,688,686; 10. Colorado \$66,702,247.

EXTRACTIVE INDUSTRIES

- Brainerd Dispatch: [Commission votes to move ahead with Minnesota pipeline environmental review](#)
- Mesabi Daily News: [PolyMet Submits Permit to Mine](#); The Timberjay: [PolyMet project permitting process underway](#); Market Wired: [PolyMet Submits Permit to Mine Application to Minnesota Department of Natural Resources](#); Strib: [PolyMet launches next critical phase of controversial mine plan for NE Minnesota](#); MPR: [PolyMet files for permit to build northern Minn. copper mine](#) and [PolyMet applied to open its copper-nickel mine: Now what?](#); click on this [link](#) to see a graphic showing the mileposts for DNR permits associated with this project (note: there are also permits issued by the MPCA):



OPINIONS

- Fillmore County Journal: [Sustainability programs part of MCGA's goal of becoming most environmentally responsible farmers in U.S.](#)
- Duluth Reader: [Minnesota DFL State Central Committee tables pro-water resolution](#) related to sulfide mining
- Marshall Independent: [Impaired water](#)

BEYOND MINNESOTA

REGIONAL

- The Architects Newspaper: [Chicago digs deep to fight flooding, but the city's geology may provide another solution](#); ancient sand dunes underlying pavement could become reservoirs for stormwater
- NPR: [\\$151 Million Settlement Deal Reached Over West Virginia Water Poisoning](#); in January 2014, the release of methylcyclohexane into Charleston, West Virginia's water supply caused nausea, vomiting and eye irritations/infections and led to the Governor declaring a state of emergency for 9 counties and shutting off water to about 300,000 people for days
- Capital Press: [Dixie Drain phosphorus removal draws interest](#); a wastewater facility trades for phosphorus by paying to treat ag runoff in ID
- Strib: [In California, a \\$350 million social experiment over lawns](#)

NATIONAL

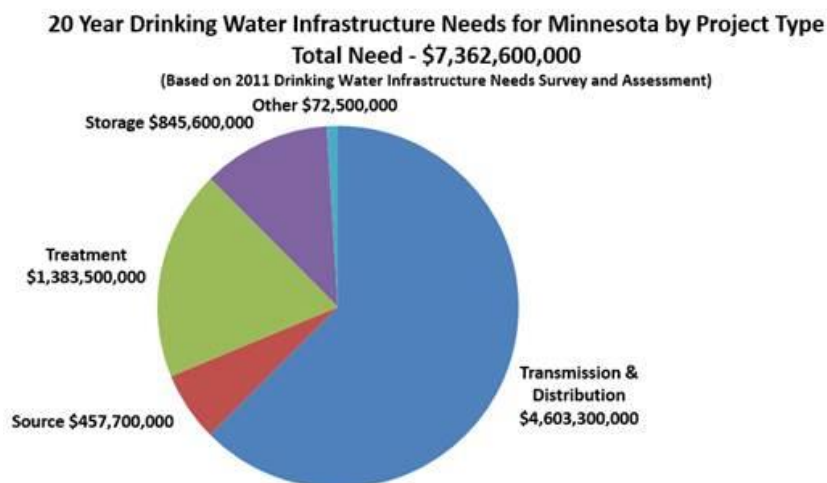
- Circle of Blue: [The Missing Ingredient in the Obama Water Strategy](#)
- The Wall Street Journal: [America Isn't Ready for a Cyberattack](#); including controls for water systems
- EPA: [Lead and Copper Rule Revisions White Paper](#); estimates the cost to remove all service lines in the US is between \$16B & \$80B
- Secretary of the Interior: [Order No. 3342](#) - Identifying Opportunities for Cooperative and Collaborative Partnerships with Federally Recognized Indian Tribes in the Management of Federal Lands and Resources
- Federal Register: [Floodplain Management and Protection of Wetlands; Minimum Property Standards for Flood Hazard Exposure; Building to the Federal Flood Risk Management Standard](#); a proposed rule by the Housing and Redevelopment Authority to improve climate resiliency by requiring public housing and HUD-funded developments in flood plains to be built 2 to 3 feet above the 100-year-flood mark
- Committee on Oversight and Government Reform, U.S. House of Representatives, 114th Congress: [Politicization of the Waters of the United States Rulemaking](#)
- EPA: [Community Solutions for Voluntary Long-Term Stormwater Planning](#) guide and toolkit
- Bloomberg BNA: [Is EPA's Limiting of Wastewater Decision Akin to New Rule?](#)
- The Washington Times: [Trial set to begin in Florida and Georgia's fight over water](#)
- The Washington Post: [Are synthetic fleece and other types of clothing harming our water?](#)
- aol.com: [10 percent of Americans exposed to infected drinking water](#)
- Water Research Foundation: [The Energy-Water Nexus – A Plan for Collaboration Between the Department of Energy and Water Sector](#)
- Circle of Blue: [Water Affordability Is A New Civil Rights Movement in the United States](#)
- The Hill: [Challengers say Obama water rule 'destroys' federal-state balance](#)

MEETINGS

LWC FOLLOW-UP

At the 9/26 LWC meeting on water infrastructure, some follow-up questions were asked of MDH. The questions are noted below in black text and the answers are provided in **blue bold** text.

1. In this chart, does “source” refer to wells and surface intakes? What falls in the “other” category?



"Source" includes wells, well houses, and surface intakes. "Other" includes: generators, water meters, and Supervisor Control and Data Acquisition systems.

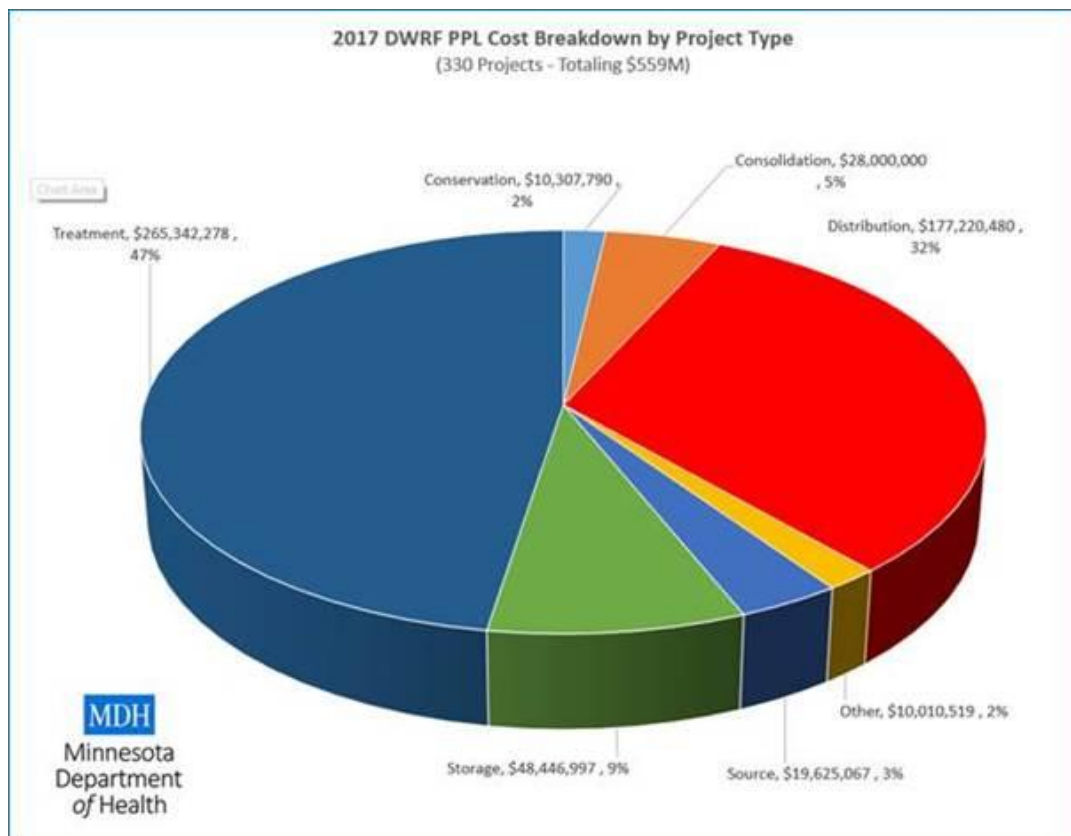
2. Did MDH produce a report that complements MPCA's January 2016 "Future Wastewater Infrastructure Needs and Capital Costs"?

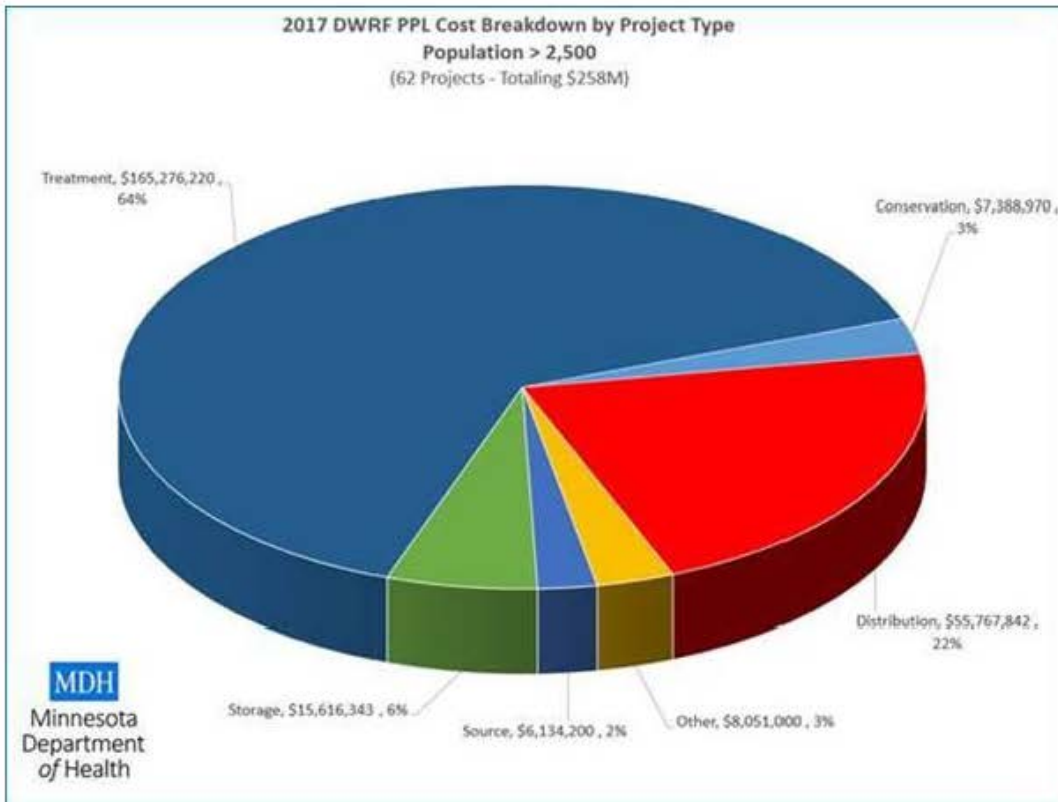
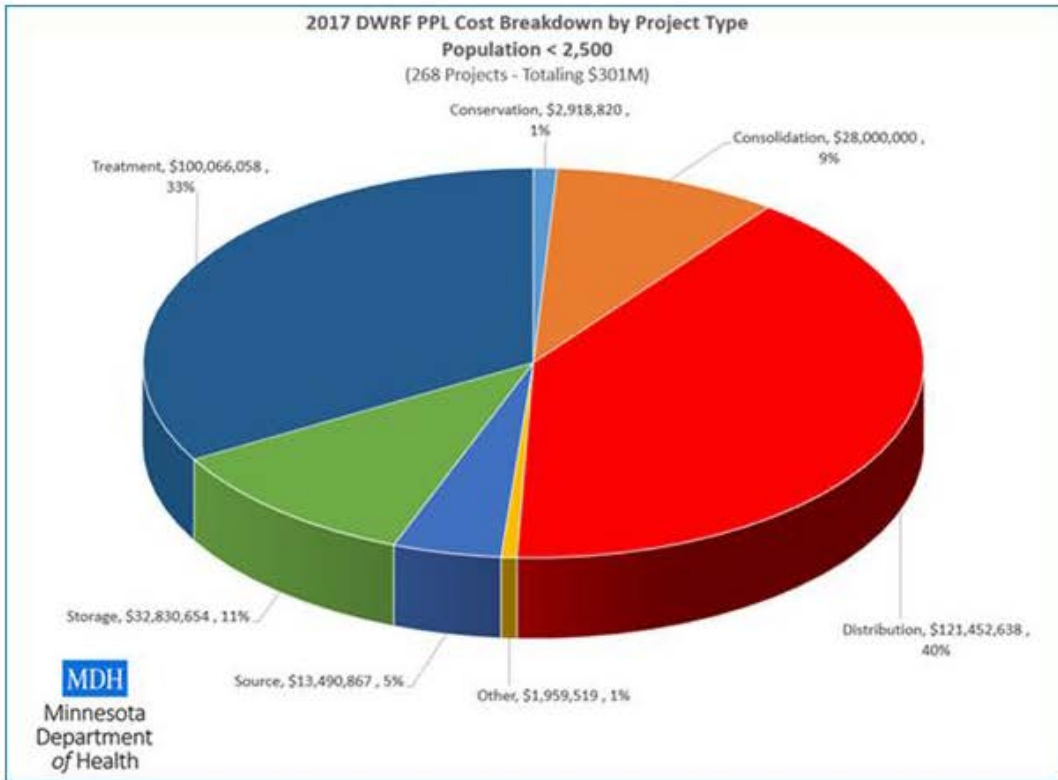
MDH did not produce a report like MPCA's on future wastewater infrastructure needs but are considering doing one; they would need to do some modification on how they collect some information to do a complementary report.

3. Wastewater needs are at \$4.2B and drinking water needs are at \$7.4B; what portion of these needs are covered by enterprise funds?

The Clean Water and Drinking Water needs survey total of \$11.6B reflects all estimated capital improvement needs over 20 years and MDH knows that a significant share of these costs are and will continue to be covered by local governments through their annual revenues and private financing. Currently state and federal funding programs provide approximately \$200 million per year (\$4B over 20 years), including about \$160 million in low interest loans and \$40 million in grants.

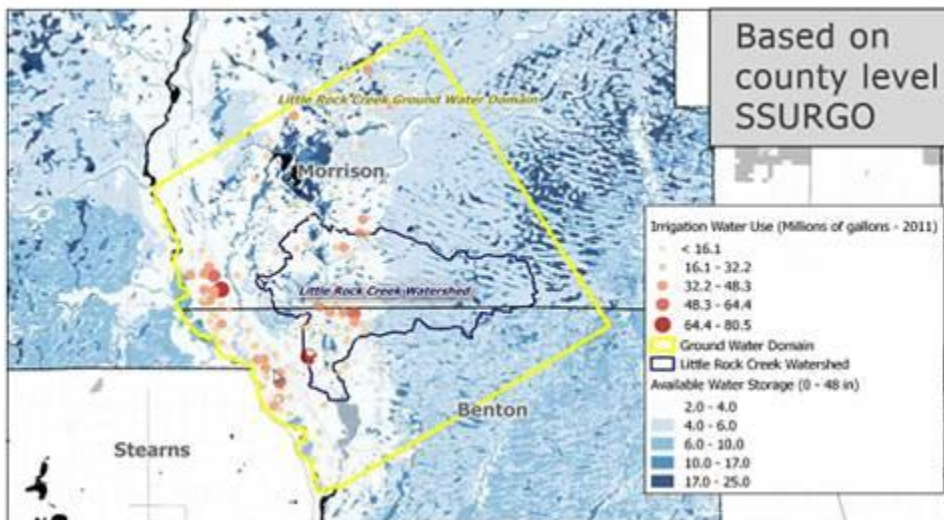
4. Can MDH distinguish between large and small city needs? **Below are 3 graphs showing the 2017 Drinking Water Revolving Fund project priority list needs by project type (cost & percentage) for all projects, small cities, and large cities.**





LITTLE ROCK CREEK AREA IRRIGATION SCHEDULING

Just north of St Cloud, near Rice, Little Rock Creek is listed as an impaired water because temperature, nitrogen, and dissolved oxygen do not meet water quality standards and because the creek does not adequately support aquatic life as a listed trout stream. One of the implementation strategies to restore this creek is to increase stream flow by conserving groundwater. The Benton and Morrison SWCDs received an LCCMR grant to develop a mobile irrigation scheduling app so farmers can collectively and voluntarily manage irrigation using real time data to make pumping decisions that support both yields and natural resources. The consulting firm RESPEC was hired to develop the app in consultation with area irrigators, the U of MN, and other agencies. The first phase of the app – the Irrigation Management Assistance (IMA) app – was completed in time for about a dozen irrigators to begin testing it this summer. During the second phase of the project, which will begin this winter, the app will be refined with indicators of stream flow, stream water quality and groundwater quality that irrigators can use to further manage their pumping. Below is an example of available water storage data that is incorporated into the app:



Another goal of the project is to insure that the IMA app can readily accept inputs from other areas of the state so it can be utilized in other areas with intensive irrigation. Yet to be decided is whether the app will be launched on local, state or private platforms, with each option having pros and cons, including data maintenance and costs of use. So far, irrigators who have used the tool have had a positive response to it and there has already been interest in expanding its use elsewhere in the state.

IMPACTS OF STORMWATER INFILTRATION ON GROUNDWATER

With some permit-specified exemptions, organizations with municipal separate storm sewer system (MS4) permits must control the volume of stormwater runoff in new development and redevelopment projects. A common method for not increasing or reducing discharge volumes from pre-project conditions is by utilizing best management practices that allow stormwater to infiltrate into the underlying soils. There are many considerations to factor before infiltrating, such as:

- the presence of contaminated soils that could negatively impact groundwater or surface water quality
- sites with very high infiltration rates that preclude natural treatment
- the potential to enhance aquifer recharge
- the treatability of contaminants of emerging concern, chlorides, and pathogens if they are present in stormwater

- the potential to induce slope failure with added soil saturation

Staff from MPCA, DNR, MDH, MnDOT, U of MN, USGS, cities, non-governmental organizations, and consulting firms have formed a work group to begin tackling the unknowns associated with stormwater infiltration. As they develop recommendations, they will be incorporated into the state's [Stormwater Manual](#).

WHAT FLINT CAN TEACH MN

At the Water Resources Conference last month, Chris Kolb (Director of Michigan's Environmental Council & co-chair of the Governor's Water Advisory Task Force on Flint) spoke about the Flint water crisis and the lessons they learned for improved governance and oversight. After interviewing 63 individuals and reading thousands of emails and documents, they published a final consensus report with 36 findings and 44 recommendations: [Flint Water Advisory Task Force Final Report \(March 2016\)](#). The biggest outcome: Michigan realizes it must now *protect water from source water to the tap and back again*. Here are a few of Chris's comments about their findings:

- The MI Department of Environmental Quality had primary responsibility for this failure
- This crisis could have been avoided if the lead and copper rule had been followed, but the monitoring periods prescribed in the lead and copper rule are too long
- They underestimated effect of lead in drinking water as a vector for lead poisoning; no unfiltered water coming out of lead pipes is safe
- Ignorance, incompetence and arrogance were rampant and the state was dismissive, combative and discrediting to locals
- This was an instance of environmental injustice
- This was a systematic problem that was decades in the making; differing, partisan beliefs in how to fund government programs, emergency management, and regulations contributed
- They paid a price for budget cutbacks

Chris' key take aways:

- Don't take for granted that drinking water is safe; don't assume state regulators are on top of the situation – verify
- Re-involve the public in decision making on source water protection and infrastructure solutions; translate engineering and scientific information so citizens can understand it
- Be aware of contaminants of emerging concern
- Return to the primary mission of protecting human health and the environment (and not being so focused on economic development)
- MI is proposing a more restrictive lead and copper rule (moving from 15 to 10 ppb); they plan to revisit the highest risk populations, inventory lead service lines, develop a lead service line replacement plan, and immediately connect anyone with >40 ppb of lead with appropriate mitigation services
- They have other threats to monitor: poor water infrastructure grade, harmful algal blooms, leaks from aging oil & gas pipelines sited near (or in) water, and nitrates
- More money is needed to analyze data (beyond collecting it)

His parting thought: clean water contributes to a high quality of life that is necessary to attract talent, a more important economic driver than industrial growth.

WATER EQUITY

Ruth Hubbard, Director of the MN Rural Water Association, was one of three people who spoke about environmental justice and water that the MN Water Resources Conference. She noted that:

- 27% of Minnesotan's live in rural areas (compared to 19% nationwide)

- Rural Minnesotan’s incomes are 20-30% lower than the metro area and their unemployment rate is high
- 20% of Minnesotans rely on private wells that may have more exposure to both naturally occurring chemicals (e.g., arsenic and manganese) and human added compounds (e.g., nitrate)

Some of her thoughts on health inequity and water:

- the cost of private well monitoring is borne by the well owner, so less monitoring and health protection happens
- smaller public water supplies have fewer customers to share costs; for example: Oslo (population 310) has \$4,283,000 in infrastructure construction needs, but is only eligible for a \$2,066,000 grant (based on the PFA funding equation), so the local share is beyond the cost individual rate payers can afford (particularly those on fixed incomes)
- small communities lack the capacity to support a community water supply
- residents are having to pay to remove contaminants introduced by others
- There are not enough certified operators who are affordable to operate small systems

Interested in your own social justice biases? Take one of Harvard’s [Implicit Association Tests](#) to measure your own attitudes and beliefs.

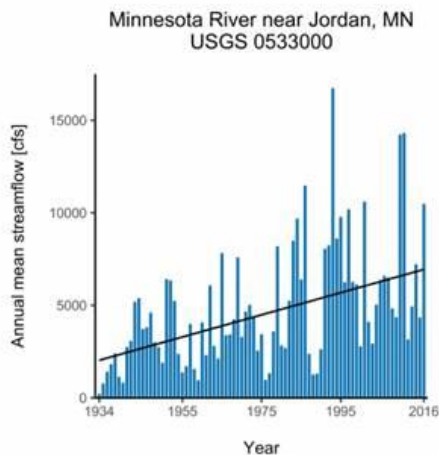
REPORTS

STATE OF MN WATER

- DNR: Stream Flow Report – discontinued until spring
- National Drought Mitigation Center: [11/1 Drought Monitor](#)
- DNR: [HydroClim Minnesota for Early November 2016](#); heavy rains in south central MN on 10/25-26; warmer than normal temps for Oct & Nov; expect below normal precipitation in Nov

UNWANTED SAND IN THE LOWER MN RIVER

- Open Rivers: [Rethinking the Mississippi - Interventions](#) (Issue 4 Fall 2016); the article by Dr Carrie Jennings, Freshwater Society, on p.27-33, *Why So Much Sand in the Lower Minnesota River?*, may be of particular interest; in it she describes how the Lower MN River (from just upstream of Carver to Ft Snelling), without costly dredging, would gain about a half-inch of sandy sediment each year (that’s about 6 times the average rate before settlement); changes in rainfall amount, land cover types, and artificial drainage contribute to increased stream flows (see graph below) that carry away about 80 acres of land/yr; to correct this problem, more upstream water storage via basins, wetlands, and perennial plants are needed



On a related note, the [Yellow Medicine One Watershed One Plan](#) has just been completed. The plan recognizes the need to address altered hydrology through a more consistent approach to implementing their drainage programs and by adding new water storage practices in the priority Coteau headwaters areas.

THE WATER-ENERGY NEXUS

The Water Research Foundation and other collaborating organizations representing the water and wastewater industry have published [The Energy-Water Nexus-A Plan for Collaboration Between the Department of Energy and the Water Sector](#) to help reinforce their partnership with the Dept of Energy when the new administration is on board. The report gives an overview of the relationship between water and energy, describes successful energy-water programs and partnerships, identifies policy and research gaps, and makes recommendations for next steps. In case, the connection between water and energy is unclear, look at these facts:

- There are about 52,000 community (drinking) water systems and about 15,000 wastewater utilities in the US and about 2–4% of the nation’s electricity is used by them
- Approximately 27% of U.S. nonagricultural freshwater is consumed by the energy sector
- Between 1996 and 2011, energy use in public water supply and treatment rose 37% while energy use in wastewater treatment rose 74%
- The 2 top energy uses for public surface water systems are finished water pumping and water treatment
- The single largest energy use in municipal wastewater treatment is aeration, but significant amounts of energy are also used in processing and managing wastewater derived biosolids
- Wastewater contains nearly 5 times the amount of energy it needs for the wastewater treatment process; if this thermal energy could be harnessed & WWTFs became more energy-efficient, WWTFs could potentially eliminate energy consumption and have excess energy left for other uses

UPCOMING EVENTS

- Oct 1-Nov 13: **Smithsonian Water/Ways Exhibit** at the [Goodhue County Historical Society](#)
- Nov 16: **MN Groundwater Association Fall Conference** “Modern Advances in Groundwater”; 8:00 to 4:30; \$145 (members)/\$195 (non-members); agenda and registration links [here](#)
- 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 7: **Nutrient Management Conference**, St. Cloud; details to be announced
- 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](#)