

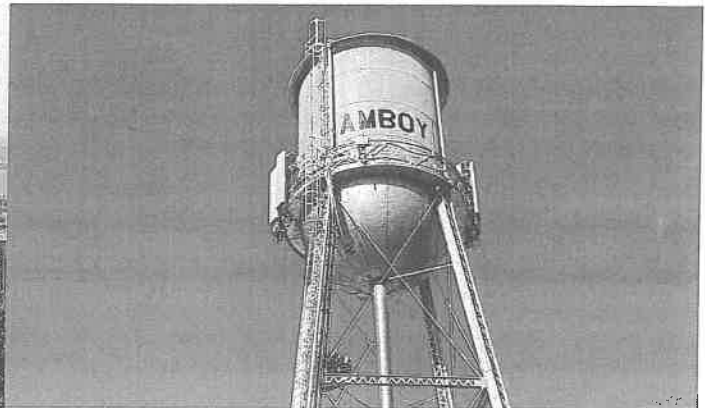
WATERLINE

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DEPARTMENT
OF HEALTH

NEWS AND INFORMATION

FOR PUBLIC WATER SUPPLIERS IN MINNESOTA

North and South, Minnesota Cities Make the Water Safe



Duluth and Amboy are meeting requirements for the safety of drinking water and wastewater, Duluth by replacing lead service lines and Amboy by installing new equipment for drinking water that reduces chloride discharge at the other end. Read more starting on page 3.

Safe Drinking Water Act Turns 50

Minnesota Department of Health Commissioner Brooke Cunningham (at right) addressed the media on December 15, the 50th anniversary of the federal Safe Drinking Water Act. "This landmark legislation directed all public water systems to follow federal health-based standards to protect consumers from contaminants that can be found in drinking water," said Cunningham, who added, "Water is abundant in Minnesota, but even here in the Land of 10,000 Lakes, we cannot afford to take our water supplies for granted."

The other speakers included Lori Blair, executive director of the Minnesota Rural Water Association; Racquel Vaske, general manager of St. Paul Regional Water Services; and Annika Bankston, director of Minneapolis Water Treatment and Distribution.

Concluded Cunningham, "Working together, I'm confident, that a future which everyone everywhere in Minnesota has equitable access to safe and sufficient drinking water isn't just a pipe dream."



Name that Movie

Name the movie, often called the greatest documentary ever made, that this quote was from:
"PC Load Letter? What the . . . ?"

Answer on back page

Duluth Gets Early Funding for Lead Service Line Replacements



Observed by interested parties from the Minnesota Department of Health, Duluth workers replaced two lead service lines on 103rd Avenue North off Heard Avenue North on September 16.

A multi-year, multi-billion-dollar push to remove lead service lines is underway in states across America and cities throughout Minnesota, and the first funds are flowing into Duluth for such work. Cities and counties have been coordinating the digging to replace the service lines with necessary street repairs to minimize the disruption.

Chad Kolstad, head of the Infrastructure Unit at the Minnesota Department of Health (MDH), noted that these efforts are “prioritizing public health” and explained that grants and loans are available to water systems for lead service line replacements through the Drinking Water Revolving Fund, which receives both state and federal Infrastructure Investment and Jobs Act funds.

The state money came when Governor Tim Walz signed legislation last year to provide \$240 million for a grant program for replacing lead service lines. MDH estimates there are about 100,000 water service lines in the state that have the potential to leach lead into the water flowing through them. In children, lead can also slow development or cause learning, behavior, and hearing problems.

In September 2024, a number of MDH employees—in town for the annual conference of the Minnesota Section of American Water Works Association—visited the Gary/New Duluth neighborhood to see a couple of service lines being replaced.

This area, along the St. Louis River and in the flattest and lowest part of Duluth, had once been small municipalities before being annexed by Duluth. It is somewhat distant from the main area, and Jon Maruska, a senior engineering specialist for the city, explained why he invited MDH staff to this location. “We met here today because we wanted you to drive all across [town] and let you imagine all the lead services that you passed on the way out here.”

Maruska said Duluth has approximately 31,000 water services. In the inventory the city performed, it determined that 6,800 were lead services with another 5,500 of unknown

composition. “We expect roughly half of those [unknown services], if not more than half of them to be lead, when we do the full investigation,” he said. “So we expect a total of 10,000 plus. This summer we’re on track to replace 670.”

At this time, the city was reaching its 500th replacement, which “leaves about 170, so we still have a busy fall ahead.” Maruska said they had three neighborhood replacement projects going on this year. “We’re targeting about 200 [replacements] per project, thinking that’s the amount one local contractor can complete in one season.”

On this day, two lead service lines were being replaced on 103rd Avenue West to the north of W. Heard Street. The general contractor, Veit & Company, Inc. of Rogers, Minnesota, was using directional drilling for the replacements. “I think contractors pretty quickly realized that directional drilling is the way to do these,” Maruska explained, “saving as much of the street as possible, saving all the restoration on the private property. In our early plans, we actually spelled out to use trenchless methods.

“We’re moving away from that and just saying, put the pipe in the ground and use what method works, and they’re going to use directional drilling when it works.” It doesn’t always work. While the Gary/New Duluth area is heavy in clay, parts of Duluth have a lot of rock, which leads to open cuts rather than directional drilling.

In addition to water utility work being done in neighborhood-wide projects, Duluth has a program for high-priority replacements, factors being a leaking service line or other utility work, such as sewers, being done. “It just makes sense to have them do the lead service line at the same time,” said Maruska.

How many years the entire project will encompass will depend on the exact total of lead service lines and continued funding availability. Duluth plans to scale up replacements in 2025 with a goal of replacing all lead services in a decade.

Quotes of the Quarter

It isn’t what you don’t know that gets you into trouble.
It’s what you know for sure that just ain’t so.

Education is what you have left over
after you have forgotten everything you’ve learned.

Amboy Tackles Wastewater Problem with Drinking Water Solution

A half-hour drive southwest of Mankato in south-central Minnesota, Amboy is laid out in a grid pattern to the north of Minn. Hwy. 30 (Maine Avenue) and east of U. S. Hwy. 169. To the south is a soybean factory, which has its own water supply. Along with some restaurants and businesses in town, the commercial customers are a Casey's gas station and convenience store at the highway junctions, and across the street a Dollar Store is going in, but most of the city's water usage is by its 535 residents.

Like much of the area, Amboy's raw water is hard. Until recently, most of the homeowners had water softeners, and the discharge from the ion-exchange process created high levels of chloride in the effluent from the wastewater plant, located on Maine Avenue about a mile east of Hwy. 169.

Halfway between the wastewater plant and highway is City Hall, which is connected to the city garage and water treatment plant. Amboy's water treatment system is known to go back to the 1930s, and for much of that period, a sand filter removed iron and manganese. The city grappled with radium levels in recent years. However, the real issue wasn't the water coming out of the plant but from individual homes, with the regeneration of the softeners creating the salty discharge that became the focus of the Minnesota Pollution Control Agency (MPCA).

With action needed, longtime city administrator Patty Smith worked with Jeff Urban of public works as well as Karen Cabett of SEH, Inc. to explore options and funding. (Urban and Cabett have since retired and Urban has also died.) Money came from a Point Source Implementation Grant (PSIG). "In general, PSIG provides an 80% grant to wastewater systems components needed to meet a more stringent wastewater effluent limit," said Chad Kolstad, supervisor of the Infrastructure Unit at the Minnesota Department of Health.

Though it was a wastewater grant, the money went into a reverse-osmosis (RO) unit for the water treatment plant. "When addressing chloride discharges, it is more cost effective to address the issue on the drinking water side," Kolstad explained.

The city's water treatment system goes back nearly 100 years, and much of this period consisted of a sand filter to remove iron and manganese. The aging filter was removed and replaced with a two-stage RO system, now operated by Don Wolters and Chris Kruse. In addition to reducing levels of iron, manganese, and radium, the treatment plant now provides softened water to residents.

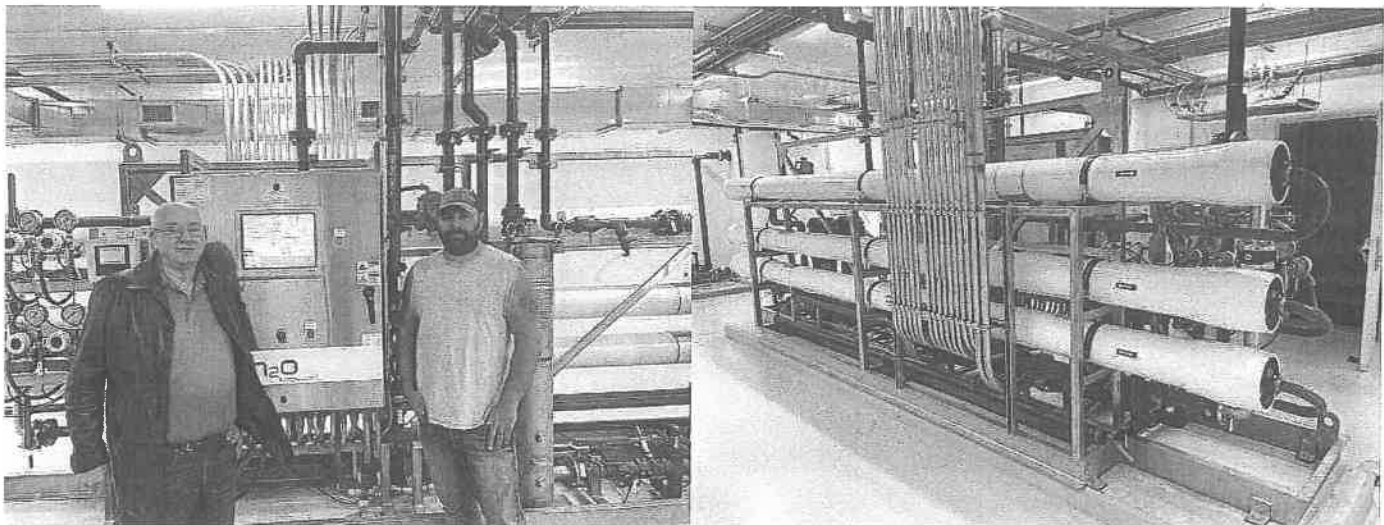
Amboy has two wells within the plant, both around 500 feet deep and drawing from the Jordan-Wonewoc and Tunnel City-Wonewoc aquifers. Kruse explained that they can rotate the wells and even bypass the treatment system temporarily if more water were needed, such as for fire protection.

Incoming water goes through two cylinders for the first stage of treatment and then through the other cylinder, which is the second stage. "It's getting fed at 60 gallons a minute, and it makes 45 a minute," said Kruse, nearly an 80% recovery rate, which is standard for RO treatment.

The city uses a clean-in-place (CIP) system – essentially the equivalent of backwashing in conventional treatment plants – and is initially performing the cleaning every four weeks. Kruse explained the process, pointing to the RO unit as he said, "We run product water into here. We put in 660 gallons of water for the first step. Then we have to heat this water to 90 degrees. Once you get your water temperature up to 90 to a hundred degrees, then we add three pails of solvent and then we'll run it. We do stage two first, run it for an hour, then we switch it to do stage one, and then we drain this and then we turn it on for 15 to 20 minutes to flush with clean water. And then we refill this with product water again."

Kruse said they also use solvent that has a low pH to make the water acidic. For this, stage one is done first. "What I've been doing is run it for an hour and have it sit for a half-hour so that acid can just sit there and eat the stuff," said Kruse. "Then we turn it back on, run it for another 45 minutes and go to stage two. We run that for an hour, shut it all off, run the tank back out, and then we rest it for 15 to 20 minutes. We look at our scum on the screen, check it to make sure it's rinsed well, and then we shut everything down and then put the production water back to the tower."

Continued on next page



John Thom of SEH, Inc., Chris Kruse of Amboy, and the city's new reverse-osmosis water treatment system.

Minnesota Leads the Way in Lead Service Line Inventories

Minnesota was recognized for having the highest percentage of lead service line inventories completed on time. In ongoing efforts to remove all lead in water systems, community and noncommunity nontransient systems prepared an inventory of all service lines, including those not in use, that are connected to the distribution system.

The top compliance rate is a testament to the dedication of public water systems in the state as well as the efforts of the Minnesota Rural Water Association and Minnesota Department of Health, whose circuit riders, district engineers, compliance staff, and others helped the systems conduct their inventories.

The results of the inventory are at <https://maps.umn.edu/LSL>, a site that will be updated with additional information.

Lead and Copper Rule Improvements

On October 8, 2024 the U.S. Environmental Protection Agency (EPA) issued the final Lead and Copper Rule Improvements. The rule sets requirements for identifying and replacing lead pipes and for testing drinking water for lead and copper. It also sets a lower threshold for communities to take action on lead.

For more information, see the EPA webpage, Lead and Copper Rule Improvements, as well as factsheets:

https://www.epa.gov/system/files/documents/2024-10/final_lcrl_fact-sheet_general_public.pdf (<https://tinyurl.com/mwdh7fcb>)

https://www.epa.gov/system/files/documents/2024-10/final_lcrl-one-pager-for-the-public_10.7.24-v2.pdf (<https://tinyurl.com/24hvm7n5>)

Minnesota Water Research Funds Keep Flowing

The Minnesota Water Research Fund, established in 2015 by Bernie Bullert, continues to provide support for water research done by faculty and students in the University of Minnesota's Department of Civil, Environmental, and Geo-Engineering. More than 25 individuals and organizations have joined Bullert in supporting the fund, and awards are being distributed to support research. To learn more about participating in or benefiting from research generated from these efforts, go to <https://cse.umn.edu/cege/minnesota-water-research-fund>.

Dueling Quotes of the Quarter

"I'd rather have someone who is real stupid but did something – even if it's wrong he did something – than have somebody who'd vacillate and do nothing."

—Curtis LeMay

Tracy Ringolsby on committees: "Members feel they have to take action, even if one is not needed, to justify their existence."

"You'd be surprised how often doing nothing is as good as doing something."

—Wally from *Dilbert*

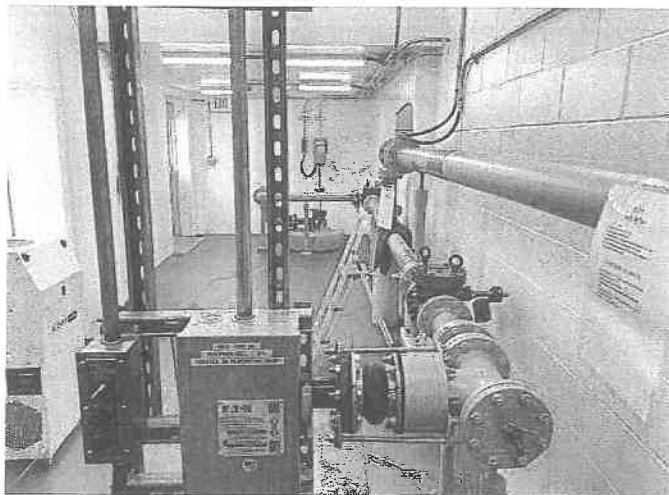
Amboy—Continued from page 3

Kruse noted that they are probably cleaning more often than necessary as a precaution as they learn more about the operation of the system in its early years. "We're trying to figure out the happiness of everything."

Chemicals, chlorine and fluoride, are added in the post-treatment stage. "You can't have chlorine or anything like that going into the filters," said Kruse. "You destroy those membranes. And we also put filters in place when we're doing the CIP, to catch the particles that are coming out to make sure we're not pushing it back into the membranes."

"The RO unit only deals with the hardness in the water, unlike the home softeners, where they can't really control each discharge clearance because of the softening," said John Thom of SEH, Inc. "So you gain control of that by centralized softening, and you're going to see more and more of that."

The total project, which included a rehabilitation of the garage for the new equipment, came to about \$2 million, with 80% covered by the PSIG grant. The reverse-osmosis system went on-line in early 2023, allowing homeowners to discontinue their softener usage and, with it, their chloride discharge to the wastewater plant.



Amboy's two wells

Drinking Water Protection (DWP) Doings

Blake Matti has joined the DWP Lead in Schools and Child Cares team and helps facilities understand the new requirements for lead sampling reporting. He's from Andover, Minnesota, and went to the University of St. Thomas in St. Paul, majoring in geology and minoring in sustainability. He was a teaching and research assistant for the geology department before becoming a park ranger intern at Minnesota Valley National Wildlife Refuge. After graduating, Blake was an environmental field technician at Barr Engineering for two years.

Recently engaged to Libby, Blake is a huge Timberwolves and Vikings fan and also enjoys movies, hiking, fishing, and anything geology related.

Zhanna Dunagan (right) is a Public Health Corps member working with communications for the Drinking Water Protection program. Zhanna grew up in St. Paul and graduated from Minnesota State, Mankato, with a bachelor of science degree in applied health science with an emphasis in public health. She's passionate about any topic in the public and environmental health fields. In her free time, Zanna watches soccer, travels, learns new things, and spends time outdoors.



Left: Blake and Libby; Right: Just Blake

Hannah Mendez is a compliance engineer for DWP. She is from Utah via Lincoln, Nebraska, where she attended the University of Nebraska. In an obligatory add-on, Hannah says, "Go Huskers!"

She worked for the Nebraska Department of Natural Resources as a water management planner and the North Carolina Department of Environmental Quality on the lead and copper compliance team. She loves exploring the outdoors, playing video games, and listening to music.

Hannah and her wife, Sierra, have two dogs, a Pomeranian-mix named Cinder and a mini-Aussie named Indigo, whom Hannah calls "the most dramatic dog I have ever met."



Cinder, Hannah, Sierra, and Indigo

Training and Education Highlights

Professional Operator Development

Conducted by the Minnesota Section of American Water Works Association in conjunction with utility partners and the Minnesota Department of Health, the Professional Operator Development program is an instructor-led series of lectures, hands-on lessons, and facility tours to enhance an operator's knowledge of the basic principles needed to operate and manage an advanced public water system.

Open to anyone who has at least a Class C water operator license, the course covers general math, filtration, membrane and ion exchange, disinfection, water quality, regulations, source water, and sampling. The goal of the course is to build competence, confidence, and understanding of public water systems.

The next course will take place on Tuesdays from January 14 to March 11, 2025 (skipping February 4) from 7:30 a.m. to 2:30 p.m. at the Minneapolis Water Works membrane facility in Columbia Heights. The fee for the course is \$300. Each week of attendance earns operators six contact hours toward the renewal of their licenses. An operator certification exam for students will be offered at the conclusion of the course.

Registration is available at <https://www.mnawwa.org/page/POD>.

Top Speakers Headline Metro School

WCCO-TV sports director Mike Max and Steve "Safari Dude" Fredlund will be the featured speakers at the Metro District Water Operators School at the Eagan Community Center May 6-8, 2025.

Although Max has a long history as a sports reporter, he was assigned to cover the unrest in Minneapolis after the murder of George Floyd in 2020. His presentation, *Inside the 2020 Riots: How It Changed the World*, will explore his on-site experiences on Lake Street as havoc reigned around him.

Fredlund is the founder of The Safari Way, which empowers people to achieve greater success and happiness based on the pillars of clarity, intentionality, courage, and engagement.

Other upcoming schools co-hosted by the Minnesota Section of American Water Works Association and Minnesota Department of Health:

- Southeast District, March 12-14, Rochester International Event Center
- Northeast District: April 15-17, Timberlake Lodge, Grand Rapids

MRWA Technical Conference

The Minnesota Rural Water Association (MRWA) will hold its annual technical conference March 4-6 at the River's Edge Convention Center in St. Cloud. In advance of that, MRWA will have a certification refresher class January 21-23.

For information and a complete list of training and schools for water operators, go to https://www.health.state.mn.us/communities/environment/water/wateroperator/wat_op_sched.html (<https://tinyurl.com/2fhw6dvb>).

WUTT's Up

The Water Utility Treatment & Technology (WUTT) program will begin a module on water distribution operations at St. Paul College on April 14.

WUTT consists of a series of non-credit modules designed to fill a need for recruitment and education for employees for water systems. The need to serve students in the Twin Cities area came about after St. Cloud Technical College ended a satellite program for water environment technologies that had been held at the Eden Prairie water plant for approximately 20 years. The closing brought concerns about how to recruit and educate potential employees for water systems in the metropolitan area. Students who complete the modules will be able to get water operator licenses and jobs with water utilities.

Water systems are encouraged to share news about WUTT with students and other potential recruits.

More information is available at https://mnscu.rschooldto-day.com/public/getclass/category_id/260/program_id/43/subcategory_id/5997 (<https://tinyurl.com/6yrzacv8>) or by contacting Steve Grossman, sgrossman@lakevillemn.gov, or Carol Kaszynski, carol.kaszynski@metrotransit.org.

Drinking Water Institute Teachers Return for Follow-Up in Eden Prairie



Science teachers from the 2024 Drinking Water Institute gathered in December for a follow-up session in Eden Prairie and got a tour of the city's water facility.

The 2024 Institute had been held August July 29-31 in St. Paul. Sponsored by the Minnesota Department of Health, Minnesota Section of American Water Works Association, and the Minnesota Water Well Association, the Institute has been held since 2001. Science teachers from around the state come together and develop action plans to create inquiry-based activities they can integrate into their existing science curriculum. In addition to the tour, teachers presented their action plans for incorporating what they've learned into their existing science curriculum.

The 2025 Institute will be August 4-6 in Eden Prairie. More information is at <https://www.health.state.mn.us/communities/environment/water/institute.htm>—[tinyurl: http://tinyurl.com/yh9ydpdx](http://tinyurl.com/yh9ydpdx).



CALENDAR

For an up-to-date list of events, see the training calendar on the MDH web site:
https://www.health.state.mn.us/communities/environment/water/wateroperator/wat_op_sched.html

Minnesota Section, American Water Works Association

*March 12-14, Southeast Water Operators School, Rochester International Event Center. Contact Josh Prokopec, joshua.prokopec@owatonnautilities.com

*April 15-17, Northeast Water Operators School, Timberlake Lodge, Grand Rapids. Contact Andrew Ohrt, aohrt@westyost.com.

*May 6-8, Metro Water Operators School, Eagan Community Center. Contact Brent Massmann, bmassmann@american-usa.com.

***Includes a water operator certification exam.**

Information for all district schools, including agendas:

<https://www.health.state.mn.us/communities/environment/water/wateroperator/schoolagendas.html>

Registration information is available at https://www.mnawwa.org/events/event_list.asp

Minnesota Rural Water Association (MRWA)

Contact Bob Klug, 800-367-6792

*January 21-23, Certification Refresher, St. Cloud

*March 4-6, Technical Conference, St. Cloud

Note: Only the MRWA workshops with water operator certification exams are listed to the left.

For more workshops, go to:

<https://www.mrwa.com/training/trainingcalendar>

Reminder to All Water Operators

When submitting water samples for analyses, remember to do the following:

- Take coliform samples on the distribution system, not at the wells or entry points.
- Write the Date Collected, Time Collected, and Collector's Name on the laboratory request form.
- Attach the label to each bottle (do not attach labels to the lab form).
- Include laboratory request forms with submitted samples.
- Use something other than a rollerball or gel pen (the ink may run).
- Consult your monitoring plan(s) prior to collecting required compliance samples.

Notify your Minnesota Department of Health district engineer of any changes to your system.

If you have questions, call the Minnesota Department of Health contact on the back of all sample instruction forms.

Waterline

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Answer to *Name that Movie*

Office Space