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Study reveals excess water in Traverse City sewers

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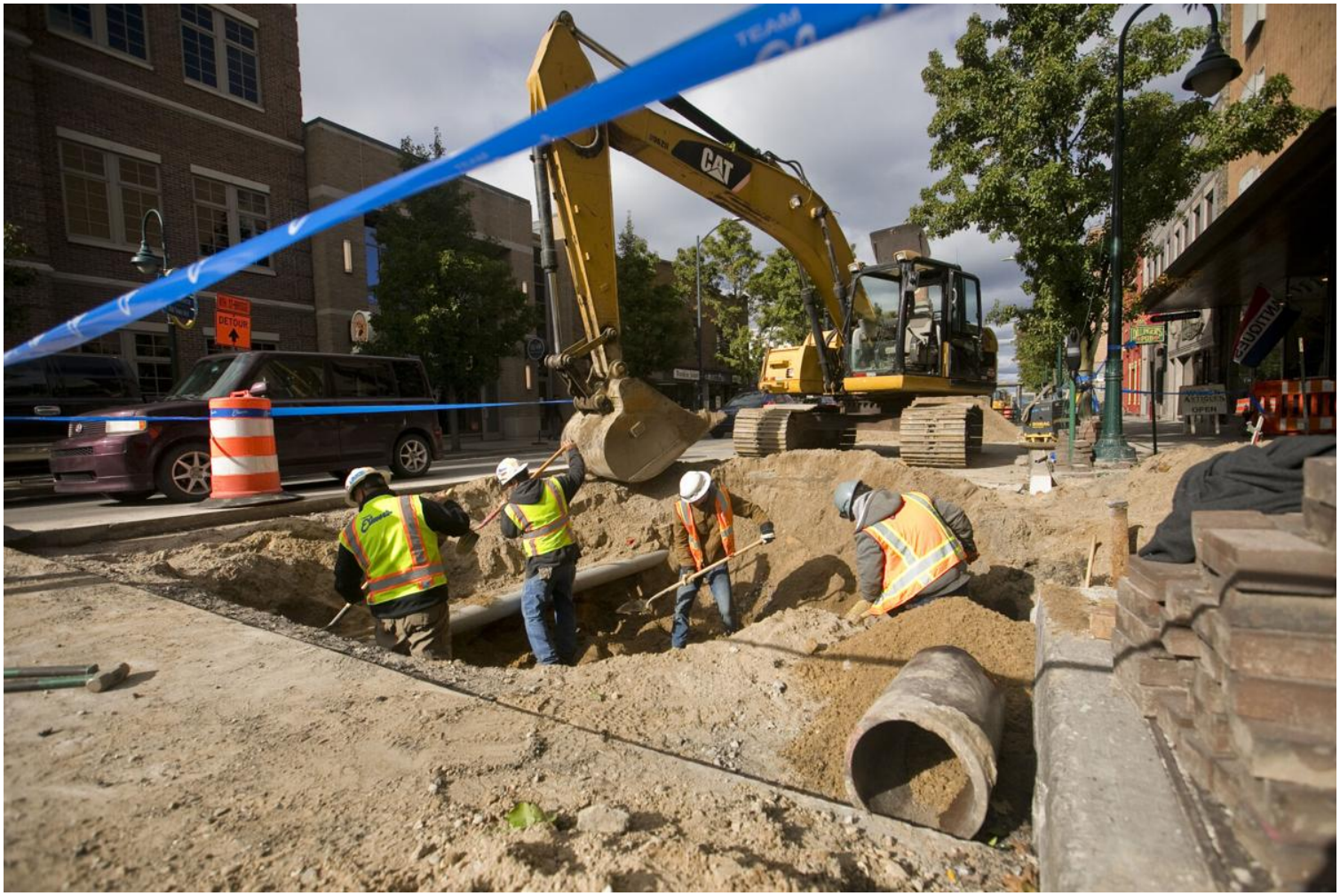
Oct 31, 2021



Workers from Team Elmer's dig underneath Union Street for the sanitary sewer, about nine feet down, to work on the line running from Bahia on Tuesday in downtown Traverse City.

Record-Eagle/
Jan-Michael Stump

TRAVERSE CITY — A study aimed at quantifying and locating groundwater and stormwater invading Traverse City's sewers is getting closer to finding the problem spots.

Meters placed at several points in the city's west half showed how inflow and infiltration caused sewage flows to spike during big rains, and how some parts of the system are awash with groundwater, city Municipal Utilities Director Art Krueger said. He and Hubbell, Roth & Clark Project Manager Doug Urquhart gave city commissioners an update on the firm's ongoing study into the problem that contributed to sewage overflows, including one on July 24.

That's when city employees were able to keep about 9,000 gallons of sewage out of the Boardman River, Krueger said. They did so thanks to a temporary holding pond over a sewer main access hole behind the Record-Eagle and a "brigade" of vactor trucks vacuuming up the overflow and unloading it at the Traverse City Regional Wastewater Treatment Plant.

It's the same spot where the sewer main overflowed three times in 2020, the worst a 54,000-gallon release that went into the Boardman River and West Grand Traverse Bay, as previously reported.

Data from the study so far shows three sectors of the sewer system where hundreds thousands of gallons of groundwater are entering the system. The worst is a spot along Bay Street that serves about 400 people and got an estimated 250,000 gallons of groundwater per day.

Krueger said the number is an estimate based on how much sewage the system users are expected to produce. That number is subtracted from actual flows to give an idea of how much groundwater is there, albeit not a perfect one.

“Granted, it’s estimates because people use different amounts of water every day,” he said. “It’s kind of based on a typical average, and you’ve got people that go out of town for a week and that’s not included.”

Still, it gives an idea of problem sectors that need further study and repairs, Krueger said – the city is already planning to reline a stretch of the Bay Street sewer main as part of a multi-million-dollar sewage system overhaul.

Falling Lake Michigan levels have helped where the record-high waters pushed groundwater levels higher than large stretches of the sewer system, Krueger said. But he’s under no illusion that the waters can’t or won’t rise again.

Flow meters also showed how some sectors surged during the July 24 rainfall. One meter district spiraled from a typical daily peak of around 2,000,000 gallons per day to nearly 15,000,000.

Climate change has and will increase the frequency of these heavy rains, Urquhart said. All that excess rainwater and groundwater in the sewer system costs money to treat.

Hubbell Roth & Clark has more recommendations for short- and long-term solutions, including more studies and flow monitoring for problem areas, video inspections of a major sewer main along the Boardman River and continued rehabilitation work.

Inflow and infiltration is one factor in a looming project to relocate a sewer main that runs along the Boardman River between Union and Cass streets, Krueger said.

“We would possibly look into upsizing that for capacity reasons, not just for higher flows from (inflow and infiltration) but long term we want to build this for the next 100 years,” he told city commissioners at a recent meeting. “So we know our city’s going to grow and any chance we get to upsize I think is a financially good use of funds, if it makes sense in the design.”

Cracked sewer mains, foundation drains connected to sewage lines, faulty access hole covers and bad pipe joints aren’t the only problems.

Urquhart said service lines, the laterals that connect houses and other buildings to the mains, can comprise up to half the length of a sewer system. Those can let in groundwater if they're broken, and Mayor Jim Carruthers pointed out replacing them can be difficult for homes with garages built over them.

Todd Sneathen, Hubbell Roth & Clark vice president, told commissioners that other cities' pilot projects to help property owners replace service lines have typically been small. The complexity of securing state funds and working on private property means it's easier for cities to repair their own infrastructure.

Commissioners suggested ways to incentivize what can be a costly project for property owners to tackle — Ashlea Walter wondered if some cities tried paying for part of the cost, Tim Werner suggested a rate hike except for those with newer service lines and Brian McGillivary mentioned Traverse City Light & Power's on-bill finance program for renewable energy and energy efficiency projects.

"Yes, it's a big lift but saying it's too hard, that's not an option for us," Werner said. "I think, yes, we all know it will be hard and take years, but that's all the more reason to keep some momentum and build some additional momentum."

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