



THE CONNECTOR

Quarterly Updates



Dan Riley of Metro Denver Economic Development presents at the Regional Salinity Summit

Regional Salinity Summit

Erin Bertoli
Government Liaison

On February 19, Metro Water Recovery, along with Denver Water and Aurora Water, hosted the Regional Salinity Summit. Salinity concentrations in our waterways—sometimes referred to as salt or total dissolved solids (TDS)—are increasing over time and are increasingly a concern for water users and water managers across Colorado. With no one entity responsible for creating or solving the challenges related to increased salinity, the Regional Salinity Summit sought ideas, experiences, and information on how to address this growing issue through a collaborative approach.

The Summit brought together people from government agencies, water utilities, nonprofits, economic development groups, local businesses, advocacy organizations, and academic institutions to generate collaborative solutions to manage salinity. The diverse group focused on learning more about the issues along the Front Range to understand how other regions have approached salinity mitigation in their water resources. As a result of the Summit, valuable conversations about managing salinity have begun in the effort to move the issue forward.



Embracing Wastewater Thermal Energy Use as a Regional Decarbonization Strategy

Strategic partnerships drive progress toward decarbonizing the world's oldest continuously operated district steam system.

Metro Water Recovery is actively exploring opportunities to develop wastewater thermal energy projects to improve water quality in the South Platte River and promote sustainable economic development in the region. Currently, Metro is partnered with the City and County of Denver (Denver) and Xcel Energy (Xcel) to harness wastewater thermal energy as a resource for modern, efficient, and sustainable district energy.

Xcel's Denver district steam system holds the unique distinction of being the oldest continuously operated commercial district heating system in the world. It has been nearly 145 years since the Denver City Steam Heating Co. began operation in November 1880. Today, as part of Xcel Energy, the system provides service to over 110 customers across the downtown area. In addition to district heating, Xcel expanded its thermal energy business in 1998 with a district chilled-water cooling system.

Many of Denver's largest buildings are on Xcel's district steam and chilled-water systems, including iconic landmarks like the Convention Center, Denver Center for the Performing Arts, Denver City and County Buildings, State Capitol, and the U.S. Mint. For these customers, district steam and chilled water have become essential services, yet increasing rates and aging infrastructure have raised questions around the long-term reliability of the steam system.



The Denver Steam Plant produces steam from natural gas-fired boilers and distributes it through a ten-mile piping network (Image credit: Colorado Public Radio).

In response to these growing concerns and the rising cost of service, the Colorado Public Utilities Commission directed Xcel to evaluate alternatives to district steam. The challenge is finding an affordable, reliable, and sustainable alternative to carbon-based fossil fuel energy.

Because natural gas boilers are incompatible with Denver and Colorado climate goals, the solution will require some form of electrification; that is, converting buildings from non-electric sources of energy to electricity. Electrification is an emerging economy-wide decarbonization strategy impacting the electric power industry. If electricity can be generated using clean, renewable energy sources, switching to electric technologies will reduce overall carbon emissions.

Traditional electrification can be expensive and disruptive. Xcel found converting steam customers to electric boilers, while technically feasible, would require massive investment on both the electric distribution side and at the customer sites. In fact, the existing downtown power grid can support electrifying only about one-third of steam customers. For Xcel Energy, this has quickly become a billion-dollar problem.



The Ambient Loop has emerged as the most viable option to provide Downtown Denver customers with affordable, reliable, and carbon-free heating and cooling.

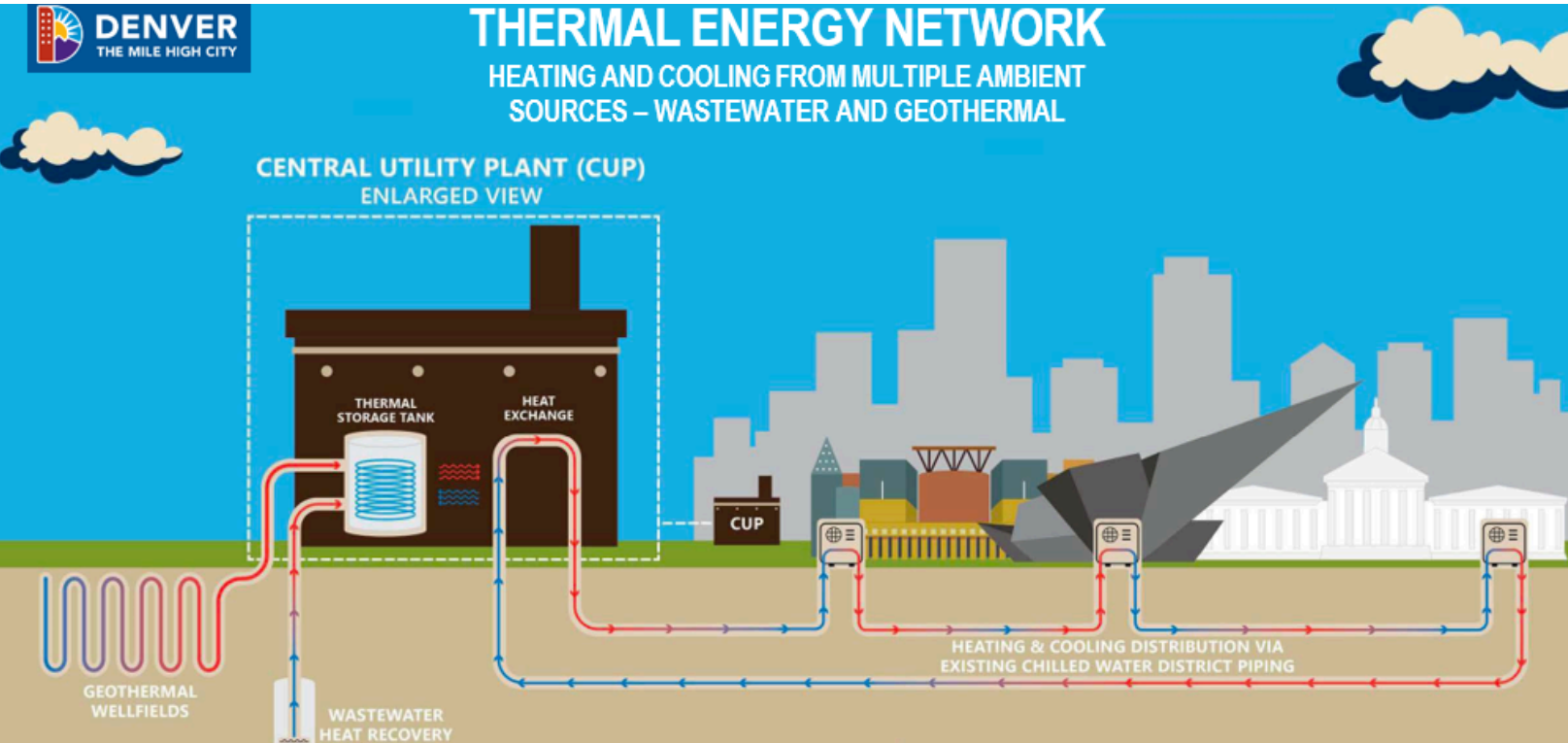
Denver recently completed an engineering study that affirmed the feasibility of an ambient solution. The Denver Ambient Thermal Energy Network (Ambient Loop) is conceptualized as a district heating and cooling system that would blend multiple renewable energy sources, including geothermal, wastewater thermal, and thermal load-sharing across a connected network of highly efficient water-source heat pumps. By converting portions of the chilled-water loop, the Ambient Loop repurposes existing district energy infrastructure to minimize new capital investment and reduce downtown construction disruptions.

Scalability is key to the success of the Ambient Loop. The network could be expanded to potentially thousands of customers. Major redevelopments, including the River Mile, Ball Arena, Fox Park, and Burnham Yard are studying district thermal energy networks, which could integrate with the Ambient Loop.



Twelve Denver-owned buildings around Civic Center will serve as the initial, scalable Ambient Loop pilot area by leveraging Xcel district-chilled, water piping (Image credit: Energetics Consulting Engineers, LLC).

The Ambient Loop Potential
Metro Water Recovery is launching additional studies to evaluate the potential connection of wastewater thermal energy recovered from the Robert W. Hite Treatment Facility (RWHTF) effluent stream and distributed to the Ambient Loop.



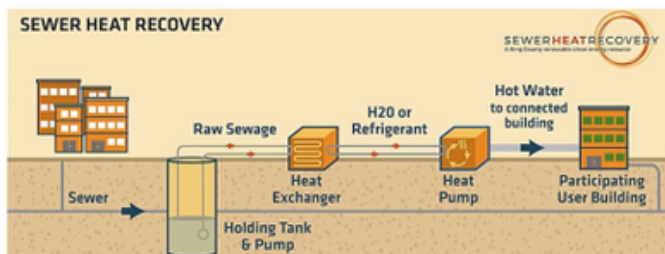
Wastewater thermal energy use (WTEU) stands at the confluence of innovation and sustainability, offering a cost-effective, reliable, and renewable energy solution for decarbonizing the region.

Given its dual capacity as a source for productive heating and cooling, wastewater thermal energy from Metro Water Recovery plays an important role in Denver's Ambient Loop. The idea is simple: The temperature of the wastewater is relatively stable, yet the wastewater is warmer than the air in the winter and cooler than the air in the summer. However, the practical challenge is harnessing this energy in a usable form.

Fortunately, wastewater is 99 percent water; and water has the highest heat capacity of any substance on Earth, making it ideal for heat transfer. Water's capacity for heat transfer is what makes water-source heat pumps highly efficient.

Heat pumps and heat exchangers are the key heat transfer technologies for wastewater heat recovery. Most systems deploy the two together, as the heat exchanger provides the initial temperature lift and thus improves the heat pump efficiency. In raw wastewater (sewer) applications, the two heat exchanger placement approaches are in-pipe and side stream. With the in-pipe approach, heat exchanger elements are installed directly in the sewer pipe. In the side stream approach, the wastewater is diverted through a wet well to the heat exchanger.

Pretreatment is a critical step in all side stream systems using raw wastewater. Its main purpose is to reduce clogging and fouling in heat exchangers.



Raw wastewater is pretreated and pumped to a side stream heat exchanger, which transfers the energy to a heat pump (Image credit: King County).

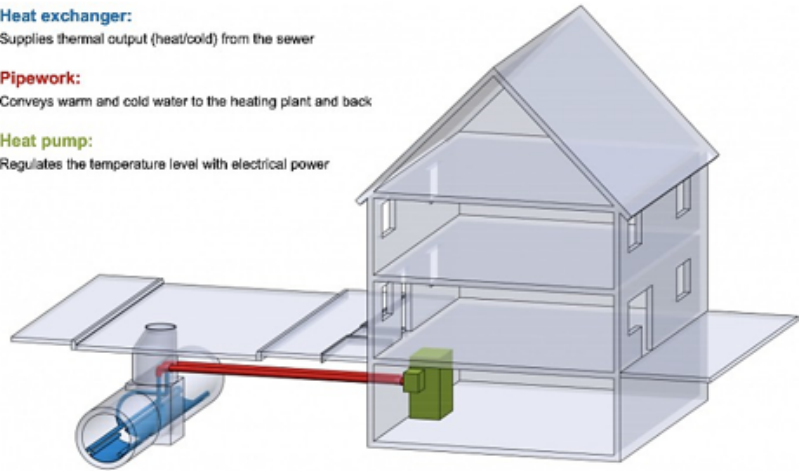
A dedicated wet well or building is required to house the pretreatment equipment, which has an associated maintenance expense and may be accompanied by unpleasant odors.

The benefits of the in-pipe approach include eliminating the need for pretreatment and wet well construction, fewer moving parts, and reduced risk of odors. In the case of the Ambient Loop, the urban environment limits the footprint available for a side stream wet well and heat exchanger, making an in-pipe heat exchanger the more desirable approach.

Heat exchanger:
Supplies thermal output (heat/cold) from the sewer

Pipework:
Conveys warm and cold water to the heating plant and back

Heat pump:
Regulates the temperature level with electrical power



In-pipe heat exchangers can be installed directly within the sewer pipe (Image credit: UHRIG Group).

required to house the pretreatment equipment, which has an associated maintenance expense and may be accompanied by unpleasant odors.

The Cherry Creek Interceptor, running beneath Speer Boulevard, is a very convenient source of wastewater thermal energy for the Ambient Loop. Metro Water Recovery is currently evaluating the technical feasibility of installing heat exchangers within the 54-inch interceptor. The results of Metro's study, expected in May of this year, will inform Denver as to the quantity of wastewater thermal energy which could feasibly supply the Ambient Loop. Preliminary estimates place this quantity around four megawatts, which is comparable to the capacity of the National Western Center's sewer heat recovery system.

Even though these WTEU systems are small in capacity and temperature reduction potential, Metro Water Recovery continues to foster and support these near-term efforts to help expand wastewater thermal as an energy source in the Metro service area, build stakeholder trust, and develop strategic partnerships opportunities, including an effluent heat recovery facility at the RWHTF.



Member Connector Service Area Maps Due March 31, 2025

Dawn Ambrosio

Chief Strategy Officer

It is that time of year again--all Member Connectors need to submit their updated service area maps as soon as possible. Metro depends on accurate service-area maps to ensure pretreatment delegation is appropriately managed. We appreciate your quick response to this request.

Per section 7.2.1 of the [Metro Water Recovery Rules and Regulations Governing the Operation, Use, and Services of the System \(Rules & Regulations\)](#) all changes to the service area should be reported to Metro annually, submitted within sixty days after the end of the calendar year. As a reminder, service area includes indirect connectors that you serve.

If you have not done so already, submit updated maps as either a shapefile or a file geodatabase to Kurt Babcock, GIS Specialist, at kbabcock@metrowaterrecovery.com. Kurt is also available to answer any technical questions concerning file transfer.



Metro Water Recovery's Service Area Map



Meet Metro's Directors

Alyse Greenberg

Communications Specialist Senior

Metro Water Recovery is honored to have 40 directors on its Board. These directors provide guidance and leadership for Metro while representing the interests of you, our connectors. We'd like to introduce a few of our directors.



Janet Kieler, Treasurer

Appointed to the Board in 2018

Connector Agency: City and County of Denver

Favorite thing about being on Metro's Board: Janet said that her favorite thing is, "the intersection of Metro's mission and its challenges and opportunities, as well as the evolution of the organization: Where Metro is, where it's going, and how it connects to the experience I bring."

Josh Redman, Finance Committee Chair

Appointed to the Board in 2023

Connector Agency: City of Thornton

Favorite thing about being on Metro's Board:

Josh stated that his favorite thing is, "understanding how water is treated and put back into the river. The enhancements to the river and the overall environmental focus of Metro are valuable. It's not just treating wastewater; it's helping the river and the Front Range."



Meet Metro's Directors, continued

Del Smith, Secretary
Appointed to Board in 2018
Connector Agency: Bancroft-Clover Water
and Sanitation District

Favorite thing about being on Metro's Board: Del stated that his favorite thing is, "interacting with the staff and other board members. There's open and honest communication, and we deal with difficult issues respectfully."



Jennifer Williams, Operations Committee Chair
Appointed to the Board in 2021
Connector Agency: City and County of Denver

Favorite thing about being on Metro's Board: Jennifer stated that her favorite thing is, "learning about Metro's projects. This allows me to see all of the fun work and innovations Metro does. We do important work, and it's nice to be part of that."



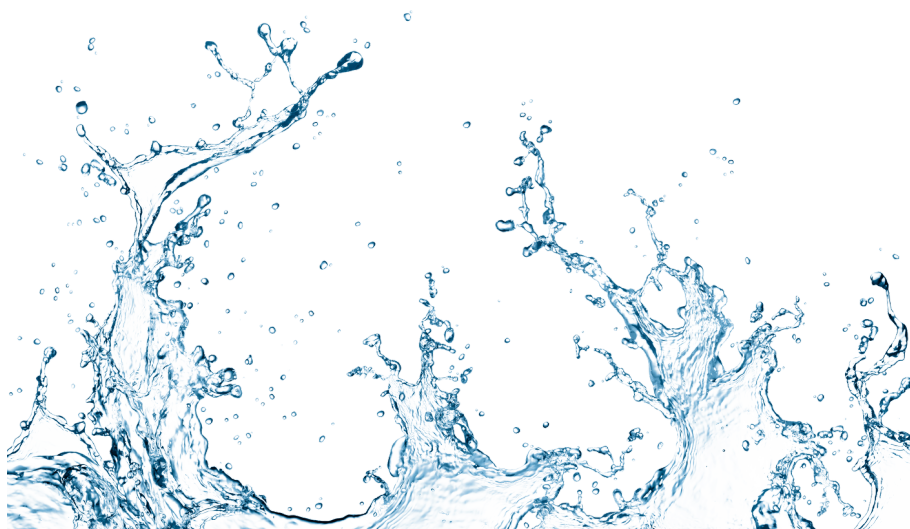
Attending a Metro Board of Directors Meeting

The Metro Water Recovery Board of Directors recognizes the value of public participation in the proceedings of the Board. To allow members of the public a fair and reasonable opportunity to present their viewpoints to the Board of Directors, the guidelines linked below will be followed at Committee and Board meetings.

In General:

- Any member of the public wishing to make Public Comment must sign up via the form below to ensure both virtual and on-site meeting access.
- Members of the public wishing to observe the meeting, but not provide Public Comment, must also fill out the form to ensure access.
- Each speaker will be limited to three (3) minutes to speak on an agenda item at any Committee/Board Meeting.
- While comments from members of the public will be allowed, there will be no question-and-answer sessions.
- Any behavior or comments deemed disruptive or offensive by the Chair or the meeting administrators will result in the disruptor immediately being removed from the meeting.

For the Public Meeting Request RSVP form, and for more details on expectations and guidelines on how to present your Public Comment to the Metro Water Recovery Board, please follow this link for [Guidelines for Public Participation of Metro Water Recovery Meetings](#).





Metro Water Recovery hosts teacher education series on the South Platte River

Metro Launches Community Survey

Anne Marie Boger

Community Engagement Liaison

As Metro Water Recovery expands engagement with communities in our service area, we would like to better understand our communities' cultures and priorities. To accomplish this, we will be conducting a survey in April. Information about the survey, available in both English and Spanish, will be sent to a random sample of residents across our service area. You and some of your customers may receive the mailing. Feel free to scan the code on the mailing to fill out the survey!

Metro previously conducted a community survey in 2022, which informed our strategic plan and has guided our involvement with communities in our service area and beyond.

[Visit our website to find out more about our strategic plan's focus on our communities.](#)

Introducing Industrial Pretreatment Manager, Florian De Clercq



Originally from Belgium, Florian De Clercq moved to the U.S. in 2014, beginning his career in the U.S. as a hotel and restaurant inspector. With a passion for environmental protection, he joined Miami-Dade County's Division of Environmental Resources Management (DERM), where he spent eight years working in various environmental compliance programs, including Water and Wastewater, Air Quality Management, and Industrial Pretreatment.

Over time, Florian took on more responsibility, eventually serving as Environmental Manager, overseeing Solid Waste, Industrial Waste Pretreatment, and Storage Tanks programs. His leadership in these areas contributed to improved regulatory compliance and environmental protection efforts across Miami-Dade County.

Looking for a lifestyle change, Florian moved his family to Colorado, drawn to the area's natural beauty and outdoor opportunities.

In January, he joined Metro's Industrial Pretreatment Division as Industrial Pretreatment Manager, where he is committed to protecting Metro's systems and staff through regulatory compliance and enforcement.

Outside of work, Florian enjoys hiking, spending quality time with his wife and two children (ages 7 and 9), and cooking—his specialty being elaborate meals that his kids excitedly refer to as a "feast." When he's not in the kitchen, he's often found chauffeuring his kids to their many activities, patiently answering their endless stream of "But why?" questions.

With his diverse background and dedication to environmental management, Florian is excited to contribute his expertise and leadership to Metro.



Annual Charges Summary

Click the links below for Metro's
one-pagers on charges:

[Rules and Regulations](#)

[Annual Charges Planning](#)

[Annual Charges Process](#)

[2025 Annual Charges Summary](#)



Dates to Remember

- **ASAP:** Member Connector Service Area Maps due to Kurt Babcock (kbabcock@metrowaterrecovery.com)
- **04/15/25:** Metro Board of Directors Meeting
- **04/15/25:** 1Q Sewer Connection Charges Due
- **05/20/25:** Metro Board of Directors Meeting
- **06/16/25:** 2Q Annual Charges Due
- **06/17/25:** Metro Board of Directors Meeting
- **07/15/25:** Metro Board of Directors Meeting