

WASTEWATER PLANNING AND SERVICE CONSIDERATIONS

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Executive Summary

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High-quality, affordable, and sustainable wastewater collection and treatment is necessary to maintain and support a growing, prosperous region with high quality of life and environmental protection. Under state law, the Met Council is responsible for operating the regional wastewater collection and treatment system, as well as planning for sustainable drinking water supplies and water resources. We fulfill these statutory responsibilities through partnerships with local governments and state and regional water organizations. As the region grows and changes, wastewater service needs to adjust and respond to customer needs as appropriate.

Issue statement

Aging infrastructure is expensive to repair and maintain. If neglected, it can allow excess surface or subsurface water to enter the conveyance system and take up capacity otherwise reserved for growth. Adjusting wastewater treatment methods and technologies to meet changing nutrient limits is costly. Growth of the region will result in more users of the wastewater treatment system, leading to requested acquisition of local infrastructure and generating debate on how best to manage the wastewater treatment of the region.

Our treatment plants continue to achieve near perfect compliance with federal and state water discharge standards while keeping rates competitive. However, it is important to address upcoming challenges to maintain that level of service. Planning for and mitigating these concerns will help extend the life of the regional wastewater system, ensuring the growth of a healthy and prosperous region.

Our role in wastewater planning and service

The Met Council provides regional wastewater collection and treatment service that is high quality, cost-efficient and protects public health and the environment. Nine treatment plants process about 250 million gallons of wastewater every day from nearly 3 million residents in 111 communities. Wastewater is conveyed to treatment plants through more than 600 miles of large interceptor sewer pipes that collect flow from local municipal sewers.

The wastewater system also plays an important role in resource recovery. The wastewater treatment process not only contributes to energy recovery by generating heat or electricity from waste treatment process by-products, but it also produces nutrient-rich biosolids that can be spread on farmland to improve soil health and promote plant growth for local farmers. Additionally, the treated wastewater effluent is an important resource for nonpotable uses, such as industrial processes and irrigation, which help conserve potable water for essential use.

To allow for and support growth of the region, we invest \$110 million per year on average to maintain, replace, and expand wastewater treatment facilities. These investments are necessary to help us partner, plan, and provide services to protect our region's water. Historical and new concerns have arisen that must be thoughtfully considered for us to continue to serve projected growth at an excellent level of service and provide clean water for future generations.

Equity in wastewater service

Wastewater infrastructure is distributed unequally across the region in varying densities. At times, people living in areas around wastewater infrastructure experience increased odors, traffic, and noise. We are aware of these potential issues and strive to build, rehabilitate, and upgrade facilities in an equitable way and work with impacted communities to improve burdens if able.

Crucial concerns for the wastewater system

Inflow and infiltration (I/I)

Excessive inflow and infiltration continues to impact regional wastewater flow rates. It also places added risks on local and regional conveyance systems during significant wet weather-related events. There is a need for continued work to locate and mitigate these sources with focused attention on private property sources. However, with most of the easily identifiable and less expensive sources addressed, it has become more difficult for communities to continue this work without financial assistance.

Liquid and vector waste receiving sites

Many liquid and vector waste receiving sites have closed around the region, leaving few options (Figure 1). Closures have been initiated for different reasons, including low flow levels at the disposal sites resulting in solids buildup and higher maintenance costs. There have been requests for more disposal sites to reduce drive time for haulers. If more sites are added for waste disposal, siting would require critical conversations with the communities and nearby residents to ensure that new sites are constructed with minimal impact to the neighborhood, and work areas are left in equal or better condition than before.

Acquisition of rural wastewater treatment plants

We have acquired rural wastewater treatment plants in the past, and there is potential to acquire those still operating independently if desired by the local government.

Rural Centers can request Met Council acquisition through the comprehensive plan and comprehensive sewer plan processes. We consider acquisition requests that provide a benefit to the region and the local government. We maintain our long-term service area when considering acquisition requests and planning for future growth.

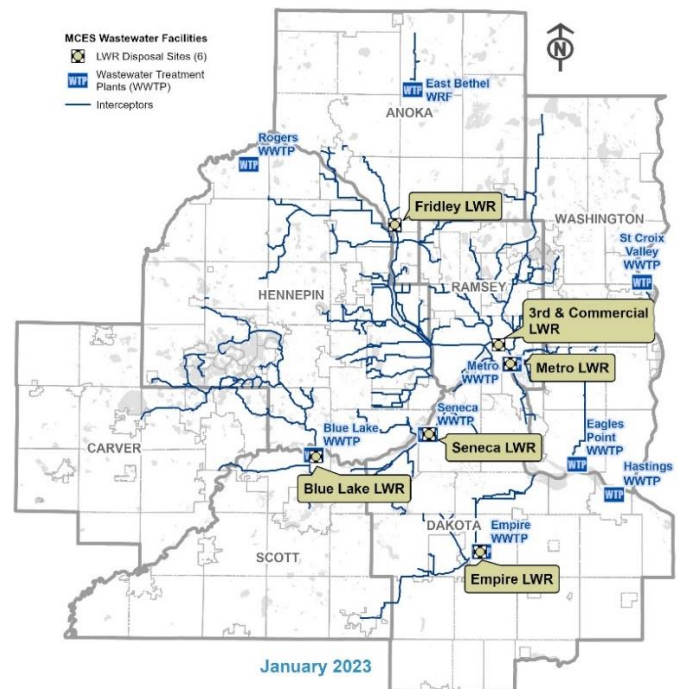


Figure 1: Metropolitan Council Environmental Services liquid waste receiving sites

Contaminants of regulatory concerns

The Minnesota Pollution Control Agency (MPCA) develops regulatory structure for contaminants. Contaminant limits change with new information and treatment technologies. The Met Council continues to monitor new and changing regulatory limits to meet permit requirements and achieve our vision of clean water for future generations. Phosphorus, nitrate, ammonia, total nitrogen, and per- and polyfluoroalkyl substances (PFAS) compounds are highlighted in this paper. New and changing limits often result in additional capital costs and operating expenses to the Met Council.

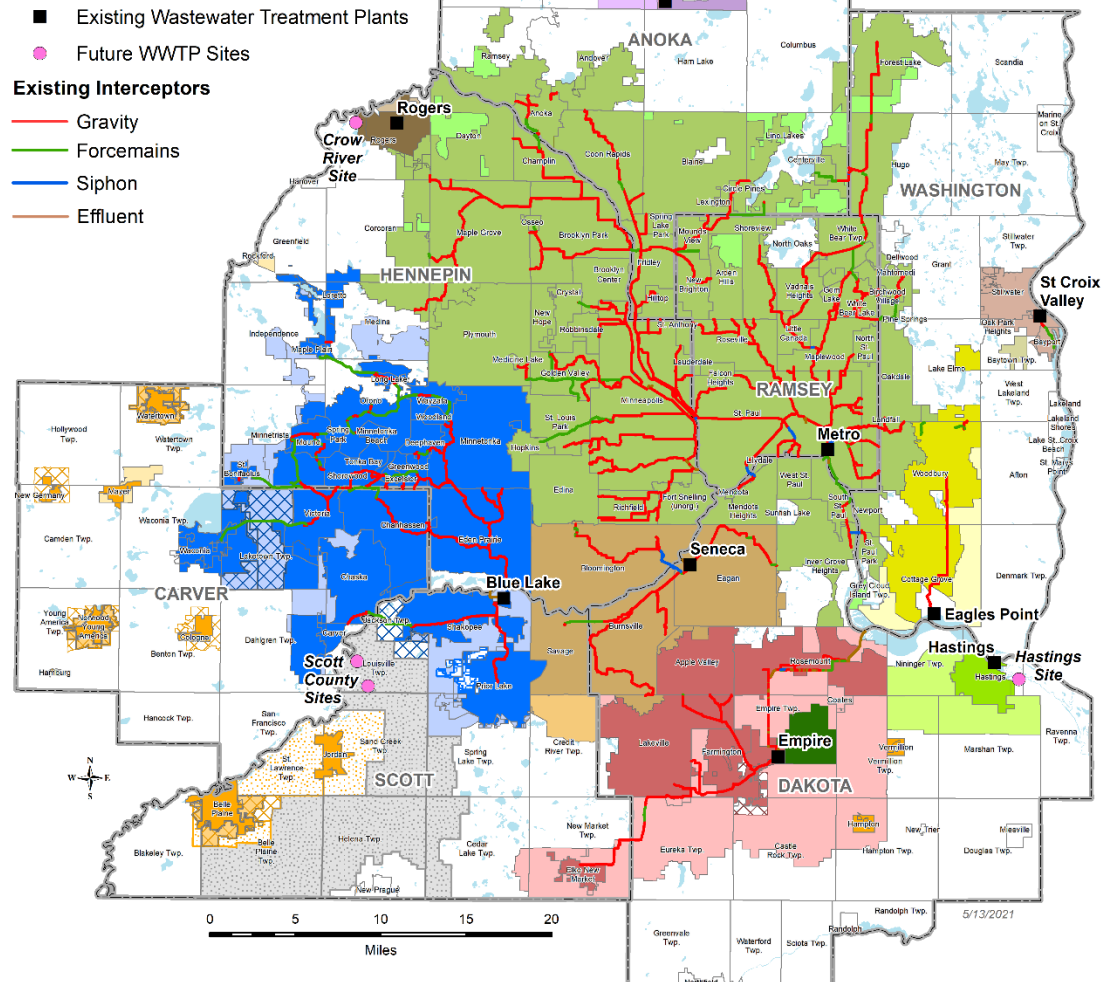
Centralized and decentralized wastewater planning

As the region grows in population and as more Rural Centers join the Metropolitan Disposal System, the question arises whether the wastewater conveyance and treatment system should be centralized or decentralized. A centralized system utilizes the investments already made and enjoys economies of scale. Decentralization opens greater potential to incorporate new technology and treatment options, which may be advantageous in areas with water supply concerns. Expansion through centralization or decentralization will be important to consider as the region grows and when infrastructure expansion is needed (Figure 2). Either system has its own strengths and weaknesses. In either case, Environmental Services will continue to provide an excellent level of service to protect human health and the environment.

Wastewater surveillance

At the beginning of the COVID-19 pandemic, we were asked to assist in efforts to track and monitor COVID-19 in the region through wastewater testing and surveillance. This new request provided critical and timely information and insight into the status of the pandemic in the region. The partnership with other public health organizations is ongoing and recommended to continue. This allows us to aid in providing public health insights for future needs.

Regional Wastewater System Long-Term Service Areas



Long Term Service Areas



Figure 2: Long term service areas of the Twin Cities metropolitan area

Recommendations for water resource policy and related strategies/actions

Our goal in this document is to share our current understanding of issues, identify current policy connections or gaps, and to propose future policies and strategies to ensure sustainable water resources. Not all the recommendations included in this paper will move forward for inclusion into the Water Resources Policy Plan, and conversely, the Water Resources Policy Plan may include policies not discussed in this paper. The intent is to begin to develop a shared understanding and conversation about our wastewater planning and service concerns.

This paper offers several draft policy and action recommendations related to wastewater service. It also includes proposed recommendations for the creation of new policies about wastewater surveillance, contaminants of regulatory concern, and interceptor reconveyance.

Proposed policy on wastewater surveillance

We recommend adding a new policy addressing wastewater surveillance. Draft policy is as follows:

“The Met Council will support efforts to investigate if or how Environmental Services can assist in wastewater surveillance in the interest of public health insights, when the need arises and funding is available. The Met Council will continue to partner with public health agencies to remain aware of when Met Council can provide insights.”

Proposed policy on contaminants of regulatory concern

We recommend adding a new policy addressing contaminants of regulatory concern. Draft policy and recommended actions are as follows:

“The Met Council will continue to partner, engage, and provide expertise in the research and regulatory work for contaminants of regulatory concern. The Met Council will continue participating in conversations with other public agencies to stay on top of emerging contaminants and any changing regulatory requirements.”

To implement this policy, we are also proposing the following recommendations specifically related to nitrogen and PFAS, resulting from an analysis of the key issues.

Nitrogen

- The Met Council will continue to engage with stakeholder groups in the development of both potential ammonia water quality standards and the Minnesota Nutrient Reduction Strategy. We will provide resources and expertise to other agencies working towards the same goal.

Per- and polyfluoroalkyl substances (PFAS)

Currently there is no proven technology to treat municipal wastewater for all the types of PFAS at the very low levels that regulators are considering. Source reduction within the sewershed is currently the best available strategy. The Met Council will:

- Develop communication tools to address this complex and quickly evolving topic.
- Continue internal development of PFAS knowledge.
- Develop risk-based priorities for accelerated actions, for example, focused source reduction at wastewater treatment plants with land application programs.
- Where appropriate support PFAS research related to wastewater treatment plants.

Proposed policy on interceptor ownership transfer

We recommend reinstating a policy on interceptor reconveyance as follows:

“Interceptors and related facilities for the collection, treatment, and disposal of sewage in the metropolitan area that are no longer needed to implement the regional wastewater system plan will be reconveyed, abandoned, or sold to the appropriate local governmental unit pursuant to statutes.”

The following implementation strategies are recommended for adoption to support this policy.

- An existing interceptor (or segment of it) is no longer necessary to the regional wastewater system when it serves:
 - Primarily as a local trunk sewer; or
 - As a local trunk sewer that conveys 200,000 gallons per day or less from an upstream community; or
 - A local trunk sewer that conveys only stormwater.

Unless,

- The interceptor has been designed to provide wastewater service to all or substantially all the upstream community; or
- The flow from the upstream community is greater than 50% of the total forecasted flow at any part within the interceptor.

Policy on water conservation and reuse

We have an existing policy regarding water conservation and reuse and we support the policy recommendations and implementation activities related to wastewater reuse proposed in the Water Reuse research paper. Although no additional implementation actions are suggested here, we acknowledge that decreasing water consumption is an effective way to preserve or recapture hydraulic wastewater system capacity. The Met Council will continue to support efforts and relationships to reduce water consumptive use.

Policy on serving the urban area

We have an existing policy regarding serving the urban area and recommend continuing to use that policy.

Policy on serving the rural area

We have an existing policy regarding serving the rural area. We recommend making the policy modifications indicated in bold:

*“The Met Council will acquire wastewater treatment plants owned by Rural Centers, based upon their request through the comprehensive plan and comprehensive sewer plan processes, **if the requested acquisition:***

- **Provides cost-effective service**
- **Accommodates assigned growth**
- **Protects public health and well-being**
- **Currently meets, or with improvements can meet, environmental and regulatory requirements.**

In addition, customer input must be solicited and a public hearing on the request must be conducted.”

Below are the recommended actions that could be added to the policy. The Met Council will

- Consider providing a higher level of service for liquid waste haulers by investigating adding and maintaining liquid waste receiving sites.
- Partner with state agencies to discuss subsurface sewage treatment system disposal facilities and rural access to disposal sites.

Policy on private wastewater systems

We have an existing policy regarding private wastewater systems. Below are the recommended actions that could be added to the policy:

- The Met Council will give higher priority to service extensions in those areas with subsurface sewage treatment systems that have a higher likelihood of contaminating source water protection areas through spills or underperforming systems.

Policy on investment

We have an existing policy regarding how the Met Council makes regional wastewater system investments. Below are the recommended actions that could be added to the policy. The Met Council will:

- Perform cost/benefit analyses, including environmental impacts, if customers express a need for a higher level of service, for example, opening or reopening a liquid waste disposal site, to ensure all waste is efficiently and effectively processed and all rate payers have access to reasonable and appropriate levels of service.
- Consider future infrastructure investments with an equity and environmental justice perspective to minimize impacts and leave the community with something better than what they had.

Policy on wastewater sustainability

We have an existing policy regarding wastewater sustainability. We are currently considering the Met Council's new Climate Action Work Plan to determine how it may impact and guide our new policy on wastewater sustainability.

Policy on inflow and infiltration

We have an existing policy regarding inflow and infiltration. We recommend making the policy modifications indicated in bold:

*“The Met Council will not provide additional capacity within its interceptor **and treatment systems** to serve excessive inflow and infiltration.*”

The Met Council will establish inflow and infiltration goals for all communities discharging wastewater to the regional wastewater system. Communities that have excessive inflow and infiltration in their sanitary sewer systems will be required to eliminate the excessive inflow and infiltration within a reasonable time period.”

Below are the recommended actions that could be added to the policy. The Met Council will:

- Continue to support, advocate, and coordinate with Metro Cities for state bond funding for municipal public system inflow and infiltration grants.
- Advocate for dedicated and reliable funding for private property inflow and infiltration mitigation and pursue grant program recommendations from the 2023 Private Property Inflow and Infiltration Task Force.
- Consider direction from the Climate Action Work Plan when considering climate impacts on inflow and infiltration.

Policy on wastewater system finance

We have an existing policy regarding wastewater system finance. Below are the recommended actions that could be added to the policy. The Met Council will:

- Collaborate with partner organizations who advocate for and assist with household water and wastewater affordability.
- Continue Sewer Availability Charge (SAC) loan programs for small businesses (new or expanding) and qualifying existing residential connections to the Metropolitan Disposal System.

This list of key issues and policy suggestions are not exhaustive. Topics not addressed in this paper are not disqualified from further discussion or incorporation into the Water Resources Policy Plan. For example, other topics of conversation at the Met Council and the utility community include the age of infrastructure and the costs and ability for maintenance and repair, and sustainability related to wastewater operations, resource recovery, and end use.