1 Water Policy Plan

Introduction

The Water Policy Plan is a policy plan within the Metropolitan Council's Regional Development Guide. The aim of this plan is to guide the region towards a present and future where water is clean and plentiful, the benefits of water and water services are maximized and equitable, and risks and negative outcomes are eliminated or minimized. By ensuring water use is sustainable, ecosystems and public health are protected, and our natural and engineered water systems are adaptable~~,~~ and resilient ~~from both an ecosystem and public health lens~~, the region positions itself to meet the evolving needs of current and future generations.

Water services refers to the breadth of benefits provided by clean and abundant water in the natural and built environment; including those derived from water service providers like water supply or wastewater utilities. Benefits may be felt directly or indirectly by society and fall into four categories:

- **Regulating:** Environmental quality, carbon sequestration, disease and flood control…
- **Provisioning**: Water supply, energy, sustenance, and food production…
- **Supporting:** Fundamental ecosystem processes, habitat, biodiversity…
- **Cultural**: Recreation, tourism, community and spiritual connection, mental and physical wellbeing…

The Water Policy Plan ~~provides~~is a ~~framework~~guide for ~~integrated~~managing all types of water ~~planning and management (~~- wastewater, water supply, stormwater, and natural surface waters~~) for~~ and groundwater. By taking an integrated approach to water planning and management, the ~~region~~plan helps to ~~secure~~ensure a clean and plentiful water future. It ~~contains~~includes policies, strategies, and actions for the Met Council and the region's ~~187 counties,~~181 cities~~,~~ and townships ~~and~~, 33 watershed management organizations, and seven counties.

High quality water and water services are necessary for public and ecosystem health, social and cultural cohesion, and a prosperous economy. The Twin Cities metropolitan region benefits when water and water services are protected, restored where degraded, and enhanced wherever possible. Planning for water and water services helps to ensure these benefits for current generations and for all who will live, work, and play in this region in the future. Securing clean, safe, and plentiful water for residents and a thriving economy, while protecting the region's diverse water sources and surrounding environments, requires coordinated, holistic, interdisciplinary, and ongoing effort.

Minnesota is known for its abundant clean waters, which can lead to the misconception that it always will be. ~~Likewise, if we've~~If people have ever been without water or ~~what we've~~only have had ~~wasn't healthy, we~~access to unsafe water, they may not trust that water can be safe for use. Complacency, distrust, or a willingness to sacrifice long-term sustainability for short-term gains can increase the risks to, and potential for, negative outcomes for water, the ecosystem services it supports, and the services provided by water utilities.

The diversity of water and water needs across the region's many landscapes means that water is being used, managed, regulated, and planned for at many different scales, from individual homes to businesses and industries, to cities and watersheds, and to the region and state. As water enters and moves through the region, it doesn't naturally adhere to political boundaries. The diversity of landscapes and the complexity of engineered water systems requires collaboration between

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communities, the public, political bodies, and technical experts to address challenges. It also requires integrated planning, holistic thinking, and adaptive approaches so that current and future generations have:

- Robust, reliable, and trusted water utilities and infrastructure
- Safe and abundant water sources for supplies
- High-quality, resilient water features that support recreation, community and individual well-being, thriving economies, cultural activities, and ecosystems

Regional Development Guide Connection to Water

The Met Council's Water Policy Plan is contained within the Regional Development Guide. Water connects us and links the frameworks that guide land use, infrastructure development, environmental protection, transportation planning, and economic development. The Regional Development Guide shapes the Met Council's values and objectives, and therefore the Twin Cities region. Coordination and alignment between regional and local planning processes are essential for sustainable regional development, that preserves and enhances water and water services now and into the future.

The Imagine 2050 Regional Development Guide has the following vision statement: "A prosperous, equitable, and resilient region with abundant opportunities for all to live, work, play, and thrive." By prioritizing water planning and coordination, regional development initiatives can contribute to building healthier and more resilient communities.

The 2050 Water Policy Plan aligns with the Regional Development Guide and the core Met Council values of equity, leadership, accountability, and stewardship. Each core value can be connected to the water plan by:

Equity: The Water Policy Plan prioritizes equitable access to clean water and water services, especially for historically marginalized populations. Equitable water work involves initiatives such as investing in overburdened communities, addressing historical harms beyond mitigation, creating accessible information and communications, and including the diverse perspectives of community members in regional water planning and management decisions. The water plan is rooted in the Met Council's Equity and Environmental Justice frameworks.

Leadership: The Water Policy Plan encourages proactive approaches to water planning and management, such as promoting sustainable water use practices and conservation activities, implementing green infrastructure projects, mitigating and adapting to climate change, and fostering public and private partnerships to address water quality and quantity issues. Leadership in the context of water policy involves engaging diverse stakeholders to collaboratively address water challenges.

Accountability: The Water Policy Plan will align with the Regional Development Guide to create metrics that our policies can be measured against. These metrics will measure progress and reveal successes and areas needing improvement. Regular monitoring and evaluation of water management practices will hold us accountable to our goals and help to identify and address disparities in access to water resources and services. Additionally, the plan will be adaptable to changing conditions, allowing for adjustments and revisions based on future conditions, feedback, and lessons learned from implementation.

Stewardship: Stewardship principles guide decisions about the sustainable use and management of water resources. This involves considering the long-term impacts of water policies and practices on both the environment and people. The plan prioritizes conservation efforts, such as promoting efficient

water and energy use, resource recovery, and protecting natural habitats, while also addressing the impacts of climate change on water availability and quality.

By incorporating these core values into the Water Policy Plan, the Met Council can ensure that its approach to water management reflects the needs and priorities of the region, fosters inclusive decision-making processes, and promotes sustainable operations and development for the benefit of current and future generations.

To align the Met Council's Water Policy Plan with the regional goals, it is essential to integrate water management strategies that contribute to achieving each objective. The regional goals and water management strategies are outlined below.

Our region is equitable and inclusive

- Actively involve historically marginalized and overburdened communities in decision-making processes related to water management.
- Ensure equitable access to clean water services across the region, while specifically considering the needs and service for historically marginalized and overburdened communities.
- Investigate and support programs to address affordability and accessibility of water services, especially in underserved areas.

Our communities are healthy and safe

- Operate the regional wastewater collection and treatment system to protect public and ecosystem health.
- Prioritize water quality management through monitoring~~,~~ and information sharing to ensure safe drinking water and protection against waterborne diseases.
- Develop strategies to manage water-related hazards such as flooding and contamination to enhance community safety and resilience.

Our region is dynamic and resilient

- Incorporate sustainable water management practices to address challenges such as water scarcity and infrastructure resilience.
- Promote water conservation efforts to ensure water availability for future generations, considering issues of access~~,~~ and affordability.
- Implement innovative, cost-effective solutions in water treatment to maximize the benefits from our drinking water supply and regional wastewater collection and treatment system.
- Facilitate collaboration between communities and water agencies to understand the sustainable limits of groundwater and surface water sources to meet future demands within subregions of the metro area.

We lead on addressing climate change

- Develop adaptation strategies to ensure water systems and infrastructure are resilient to climate impacts, such as changing precipitation patterns and extreme weather events.
- Implement measures to reduce greenhouse gas emissions associated with water supply distribution and wastewater treatment and collection processes.

We protect and restore natural systems

- Prioritize the protection and restoration of natural water systems, such as wetlands and watersheds, to safeguard habitat and enhance ecosystem resilience.
- Incorporate green infrastructure practices into water management strategies to improve water quality and support biodiversity.

By integrating these strategies into the Water Policy Plan, the Met Council can contribute to creating a more equitable, healthy, dynamic, and resilient region while leading efforts to address climate change and protect natural systems. This holistic approach ensures that water management aligns with the overarching goals endorsed by the Met Council, fostering sustainable development and improving the quality of life for all residents.

The Water Policy Plan and the Regional Development Guide share a common vision of sustainable development, underpinned by values of environmental stewardship, social equity, and economic vibrance. Their goals intersect in promoting responsible land use practices, protecting water resources, and enhancing community resilience. By recognizing the diverse values of water and its importance for ecosystem, economic, community, and individual well-being, this plan can guide coordinated action towards a more sustainable and equitable future for the region.

Regional Water Context

Water has always held great significance to the people of the region. The name Minnesota comes from the name the Dakota people gave this land, Mni Sóta Maḳoce – meaning 'the land where waters reflect the skies".[1] From the continental ice sheets that shaped the land forming lakes, rivers, and wetlands nearly 16,000 years ago, to the Indigenous cultures that have flourished living alongside those water features, to the present day's thriving and diverse communities, water has defined the people and places of our metropolitan region.

1 Roper, E. (2021, December 17). Curious Minnesota: What does 'Minnesota' mean and how did the state get its name? Star Tribune. https://www.startribune.com/mnisota-mni-sota-dakota-language-minnesota-river-state-name/600114154/

~~i.~~ Sustaining plentiful and clean water

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Plentiful, high-quality water is a foundational pillar of public and ecosystem health and thriving economies. The seven-county metro area includes nearly 3,000 square miles of diverse landscapes, from highly developed cities to large rural agricultural areas. Equally diverse are the water needs of the more than 3 million people, over half of Minnesota's population, who reside here. These landscapes include almost 1,000 lakes, hundreds of miles of rivers and streams, and thousands of acres of wetlands (**Figure 1.1**). Below ground there are surficial sand, gravel, and major bedrock aquifers that provide nearly 70% of the region's water supply (**Figure 1.2**).

Water Resource Recovery Facility

Our wastewater treatment plants do so much more than treat wastewater; they produce clean water, recover nutrients for second uses, and tap renewable energy to reduce fossil fuel use.

Our change in name from wastewater treatment plants to water resource recovery facilities reflect that our work is more than only wastewater treatment.

Water is supplied to homes, businesses, and industries by over 100 municipal community public water supply systems and tens of thousands of private and nonmunicipal public wells. Stormwater is conveyed through thousands of miles of stormwater infrastructure ~~and collected in green infrastructure~~ that allows it to safely ~~infiltrate to~~ replenish the water table and groundwater system. Used water is treated by individual subsurface sewage treatment systems, municipal wastewater facilities, private communal wastewater systems, ~~or~~and the regional water resource recovery system, which includes 9 water resource recovery facilities serving 111 communities. The treated water from these facilities is then safely returned to the environment or reused to improve the sustainability of the region's water sources.

As water moves through this landscape, it provides residents with sustenance, spiritual solace, recreational enjoyment, the ability to transport goods, and the potential for industrial power. This same water also supports biodiversity and natural systems that are resilient and provide a high quality of life.

The region's water naturally cycles to and through surface water features and an extensive groundwater system. While often regulated and managed separately, groundwater and surface water are an integrated system that works to support ecosystem health and the needs of people. The natural system is continually influenced by the built environment consisting of developed landscapes that include engineered water systems (stormwater conveyance, water supply utilities, subsurface sewage treatment systems, and wastewater systems and utilities). No part of this natural and developed water landscape is without human influence or intervention, and issues or solutions in any part of the system are likely to have connected impacts on the whole. (Error! Reference source not found.).

Community growth and development cannot occur without sustainable water and water services. The region's waters (ground and surface water) are sustainable when managed to not harm ecosystems, degrade water quality, and to ensure their availability for current and future generations ~~while ensuring a balance between~~ safeguarding economic, environmental, and social well-being. If stormwater, water supply, and wastewater infrastructure that treats and moves water throughout the region is put at risk, the essential services provided by these engineered water systems cannot be sustainable. Sustaining natural waters and the services that provide clean and plentiful water is essential for public and ecosystem health, and to ensure a high quality of life for present and future generations.

Water sustainability occurs at the confluence of social, economic, and environmental factors. This tells us that issues that create risk and limit benefits cannot be addressed in any one water planning or management sector, and that our planning and management approaches must be holistic and adaptative to allow for new knowledge and ways of thinking to inform decisions. ~~We~~The region cannot achieve and sustain clean and plentiful water if we do not understand environmental conditions or the socioeconomic factors that drive needs and risks.

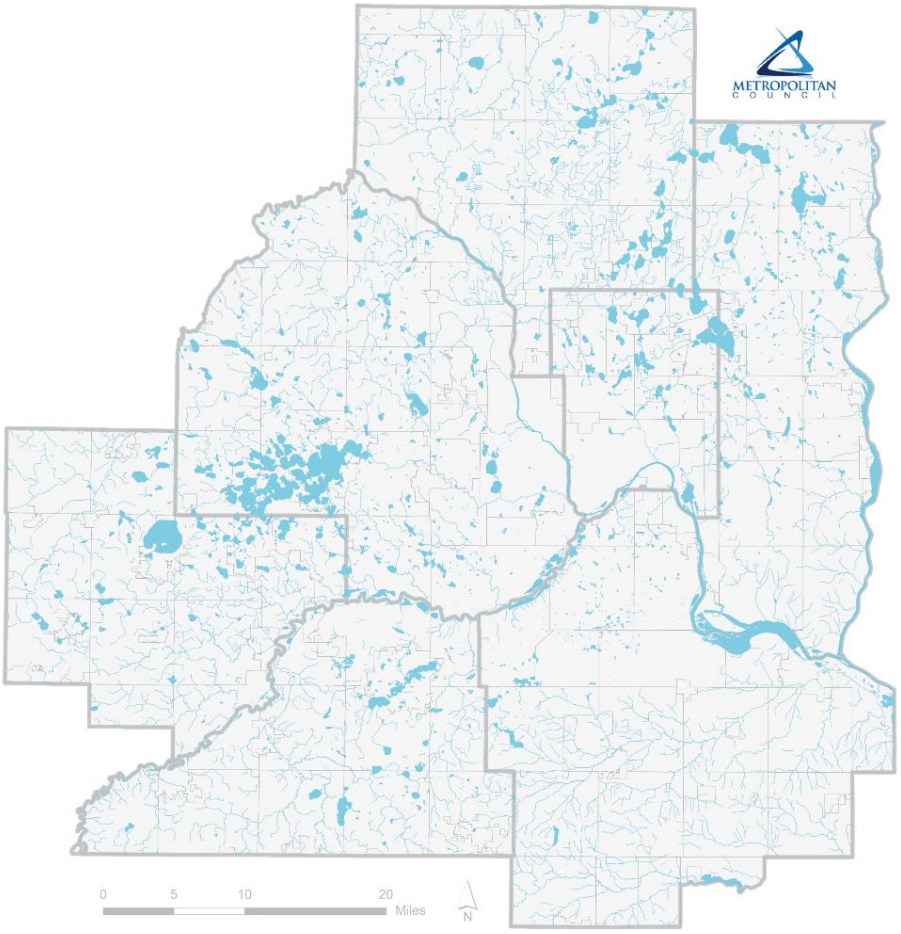

Figure 1.1: Regional rivers, lakes, and streams

Data source: Minnesota DNR

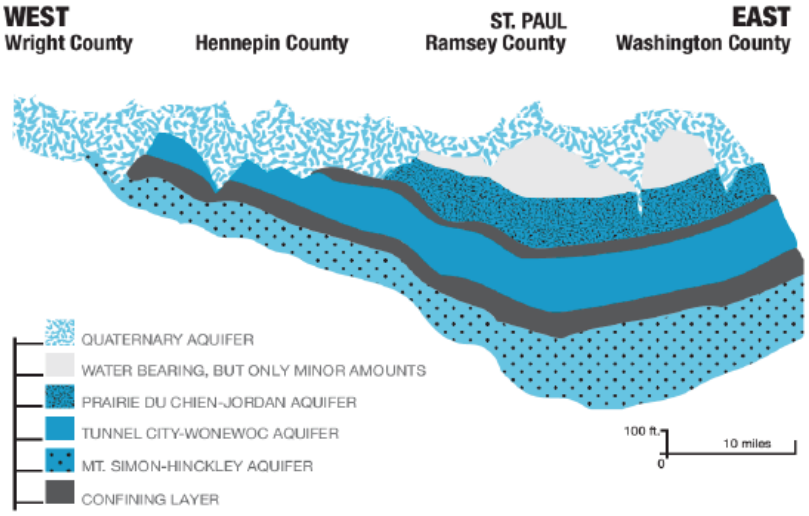

Figure 1.2: Regionally significant aquifers

~~Th~~Graphic source: Met Council

Figure 1.2: Water movement through the natural and built environment

Graphic source: Met Council

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~~ii.~~ Benefits of regional water planning

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Water naturally flows along topographic and geologic boundaries and is defined by its physical and chemical properties and hydrologic conditions. However, when we define water, we tend to think of the water nearest to us, or that we interact with the most. Rarely do we think of the journey water has taken to get to us or what happens after we interact with it.

It's also rare that we consider how water moves through our communities and eventually flows out of the region. This movement of water into and out of the region can take as little as a few days, as in the case of stormwater, or as much as several thousand years in the case of groundwater that's pumped from deep bedrock aquifers for water supply, treated post-use, and returned to the environment.

All residents, businesses, and communities have a responsibility to protect and conserve water as it moves through the region. We must consider how land and water are used, how the region's landscapes are developed and redeveloped, and how water needs and challenges vary from place to place. We need to identify and remedy past decisions that have polluted waters, harmed ecosystems, made water and water systems less resilient to climate change impacts, and increased the costs of water services and management. This stewardship requires integrated holistic approaches and collaborative planning between communities, watersheds, and water regulators.

As the regional wastewater service provider, development and integrated water planning agency, and policy making body, the Met Council is well situated to help the region find solutions to complex challenges and meet the water needs of current and future generations. The Met Council partners with communities to address the long-term sustainability of water resources and water utilities by:

- Providing integrated water planning and sustainable wastewater management to the region.
- Facilitating collaborative planning activities throughout the region.
- Building partnerships with communities, local governments, watersheds, technical experts, and state and federal agencies, inside and outside of the region.
- Supporting sound local and regional decision making with data, information, tools, and grants.
- Monitoring the quality and quantity of the region's water resources.

Key Water Sustainability Challenges

Many factors influence the abundance and quality of water in the region. Over the coming years and decades, new stressors and risks will emerge and current challenges will evolve, putting new pressures and limitations on the region's waters and multifaceted water systems. The Met Council and its partners have identified a few ~~over-arching~~overarching themes that will impact the region's waters throughout the life of this plan. These include:

- Growth and development patterns and associated land use impacts.
- Adapting to and mitigating climate change.
- Water contamination, pollution prevention and source water protection.
- Addressing inequitable water outcomes that limit access, use, public and ecosystem health, or other benefits of clean and plentiful water.
- Developing an adaptable water sector workforce able to steward water services and systems.

~~iii.~~ Growth, Development, and Land Use Connections

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What happens on land (use/development) directly impacts water quantity and quality. Additionally, the number and density of people living and working in the region, as well as the businesses and industries operating in the region, influences how, how much, where, and what water is used. The connection between the built and natural environment must be considered in short- and long-term planning so that the region's water needs can be met now, while not compromising the ability of future generations to meet their needs as they see fit.

The Met Council strives to foster and maintain a growing economy that benefits all who live, work, and recreate in the region. Sustainable and plentiful high-quality ~~water resources~~surface and groundwater sources provide a firm foundation for future economic growth, livability, and high quality of life.

Likewise, a thriving economy must not come at the expense of, and must be in balance with, the needs of the natural environment, where water is sourced from and returned to after use.

The Met Council forecasts future population conditions in the region and sets regional land use policies through community designations, which group jurisdictions based on urban or rural character and historical development patterns. Community designations help jurisdictions implement the regional vision by setting expectations for development density and the character of development throughout the region. For example, the Met Council defines maximum residential development densities to help avoid premature development, protect natural systems, and ensure regional service needs can be met until additional regional growth requires accommodation.

The region's ~~diverse~~ communities have diverse needs and challenges due to many factors, including their varied natural and urbanized landscapes. Water planning in the region must reflect these diverse needs and landscapes so that complex water issues are properly contextualized and addressed. As the region develops and redevelops, approaches that have resulted in current water issues need to be addressed and solutions must account for historical injustices and community character.

The metro region land area is roughly 50% rural and 50% urban/suburban community designations. Understanding and addressing rural water as opposed to urban challenges and protecting rural landscapes is crucial for achieving regional sustainability. Rural areas are critical for natural system protection, groundwater recharge, and agricultural production, but can negatively impact waterbodies and drinking water sources when not properly planned for or managed. In some areas, contamination from agricultural and industrial practices has impacted aquifers and ecosystems in the metro area.

Similarly, excessive appropriation and use of groundwater sources in rural areas for commercial ~~purposes or~~, agricultural ~~irrigation~~, residential or other purposes can impact groundwater levels and connected surface waters. However, integrated and collaborative planning, best management practices, remediation efforts, and modern approaches like water reuse are all helping to ensure the needs of rural communities and environments are met, and that the rural character of the metro continues to thrive into the future.

Rural communities face significant obstacles in maintaining wastewater services due to limited financial resources and a challenging population distribution. Fewer people and businesses make meeting the costs of water utility services more challenging. Aging infrastructure and underperformance can further exacerbate concerns and cause systems to become noncompliant, posing environmental and public health risks. The Met Council must work with rural partners to balance stewardship of the environment and health of the population with preserving rural and agricultural land uses outside the long-term service area.

Rural water supply systems face similar challenges as rural wastewater services. Additionally, private well owners do not have the same water quality safeguards as those who get their water from a public system. Testing by counties and state agencies has documented growing problems with water quality in private wells, raising concerns about human health and costs for treatment. The Met Council must also work with partners to help rural communities address their source water protection and drinking water challenges.

Addressing urban and suburban water challenges is equally critical to achieve equitable and sustainable water outcomes. Seventy percent of the region's population lives in an urban or suburban community. Highly developed and developing communities also face unique water planning and

management issues connected to their historical and ongoing development. Areas with limited natural landscapes, expansive impervious surfaces, and significant industrial and commercial areas contend with legacy surface water and groundwater pollution, a lack of natural recharge, and the costs of operating and maintaining complex stormwater, water supply, and wastewater systems.

For example, areas with highways and expansive road networks tend to have surface and groundwaters polluted with chloride, a contaminant that disrupts ecosystem function and is extremely difficult and expensive to remove from water. Urban and suburban communities are also home to natural areas that support surface and groundwater, provide habitat and protect biodiversity, are important recreation and community gathering spaces, and provide refuge from and resilience to climate change impacts. As urbanized areas are redeveloped and new suburban areas are developed, the Met Council will work with partners to provide regional wastewater and water planning and management services to protect, restore, and enhance public and ecosystem health.

The connectedness of the region's water and water systems also means that actions taken in one part of the metro can have lasting impacts in other parts. Land use changes affect water and water service needs. As the region develops, with associated increases in impervious surfaces (buildings, sidewalks, parking lots, etc.), it impacts the ways that water infiltrates and moves through the region. An increase in impervious surface results in a loss of groundwater recharge, which supports the functioning of healthy ecosystems and supplies drinking water to the region. Instead, it runs off, carrying pollution, and discharges into the nearest body of water through stormwater conveyances~~.~~ like storm sewers and constructed ditches. Constructing and installing best management practices and stormwater management technologies can help to direct water flows to mimic natural pathways.

~~iv.~~ Responding to Climate Change Across Water Sectors

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Climate change poses immediate and future challenges for the natural and built environment. Changes to the region's climate affect the condition of water, water needs and uses, infrastructure and utility services, and ecosystem services. In turn, the livability, prosperity, and sustainability of the region face additional risks and uncertainty. Public and ecosystem health, economic growth, and community and individual well-being are threatened when climate change negatively impacts water and water services. These impacts are socially and financially costly and intensify existing disparities for vulnerable people and overburdened communities.

The consequences of climate change will not be felt by all residents or communities simultaneously or in the same ways, potentially worsening current disparities around water services and resources. However, these multifaceted challenges create significant opportunities to develop policies and partnerships that address climate change and ensure the water needs of historically marginalized communities are met.

Limiting the most severe climate change impacts necessitates immediate and sustained action to reduce greenhouse gas emissions (mitigation) and to implement resilient climate design and management (adaptation). Achieving the scale of emissions reductions required for carbon neutrality will result in substantial transformations across every community and sector of the economy, bringing both challenges and opportunities.

Likewise, the region must invest in adaptation to new ~~realties~~realities brought about by climate change including increased weather variability, intense precipitation events, prolonged droughts and heat waves, extended growing seasons, and warmer air temperatures. These climate realities have already imposed greater risk to and costs of the region's water and water utility services and altered ecosystems and water management and planning approaches. The region can expect the varied effects of changing climate to continue and become more severe in time, but by acknowledging,

planning for, and adapting to new and evolving challenges the region can be prepared for and ~~effectively~~ respond effectively, making the benefits of clean and abundant water resilient now and for the future.

Climate resilience occurs when communities and ecosystems are able to adapt to evolving and challenging climate conditions~~,~~ and mitigate and offset emissions, while ensuring the needs of people and the environment are met and able to recover rapidly and efficiently during periods of stress. The region's water and water services that support public and ecosystem health and a thriving economy are a foundational component of the region's climate resiliency. Every aspect of water planning, management, and service delivery must consider how climate change is impacting and will continue to impact ~~their~~the work and the lives of those who depend on it.

The region's water service providers, watersheds, regulators, and users need to adjust practices, behaviors, and develop coordinated approaches that address risks posed by climate change to water and water infrastructure. For instance, about 30% of the groundwater delivered to homes and businesses by water suppliers in the region is used outdoors primarily for lawn and landscape irrigation. During periods of high temperatures and drought these uses tend to increase, when water sources are likely to be stressed, potentially leading to excessive aquifer drawdown, well interference issues, and impacts to surface waters and surrounding ecosystems.

These high-demand periods also result in increased energy usage and additional water treatment, infrastructure, and associated costs to meet demands. However, by investing in and implementing efficient water use and conservation programs and practices, non-essential water use can be lessened or eliminated, with water sources and connected ecosystems becoming more resilient to climate stresses.

The Met Council produced the Climate Action Work Plan to address areas where we can act and reduce climate change impacts within the organization. The plan's vision is "*to reduce our contributions to greenhouse gas emissions in the region and make our services and facilities resilient to the impacts of climate change.*" The Water Policy Plan supports the actions and goals of the Climate Action Work Plan. ~~The Met Council is~~We are committed to reducing greenhouse gas emissions and increasing service resiliency in our wastewater operations and support services.

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Likewise, through our long-term planning responsibilities, our wastewater and water resource planning sections can help the region adapt by providing technical support for communities to prepare, build resiliency, and grow sustainably. Recent updates to the national climate assessment point to ongoing and future impacts and the need for coordinated climate planning to enhance resiliency[2]. As Tribal Nations, the state of Minnesota, watersheds, counties, and communities around the region develop and implement climate adaptation and greenhouse gas mitigation plans, the Met Council can play a role in

[2] U.S. Global Change Research Program, 2023: Fifth National Climate Assessment. Crimmins, A.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, B.C. Stewart, and T.K. Maycock, Eds. U.S. Global Change Research Program, Washington, DC, USA. https://doi.org/10.7930/NCA5.2023

coordinating climate planning for the region to support cross-jurisdictional collaboration and holistic approaches that build regional resiliency.

~~v.~~ Water Contamination, Pollution Prevention and Source Water Protection

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Water contamination and its consequences impact public health, ecosystem function, and regional economic competitiveness. Over the past century, federal and state water protection laws significantly reduced the amount of pollution in rivers, lakes, and streams nationwide, especially since the passage of the Clean Water Act. However, the country has not met the ambitious Clean Water Act goal of all waters being "drinkable, swimmable, and fishable."

Source water: water that is used for water supplies (drinking water, irrigation sources, etc.).

Recreational water: Waters that are used for swimming, fishing, boating, and other recreational activities.

The ~~metro~~ region is challenged by multiple complex water quality issues. These include increased pollutant-loaded runoff, a growing list of water impairments, contaminated drinking water sources, and high costs for water treatment, utility operations, and infrastructure. The severity and type of contamination impacts how Minnesotans use and value the state's waters. The sources of contamination are both natural and caused by human activities. Uncertainty around emerging contaminants, regulatory changes, and climate change intensifies these issues, and complicates how to address water contamination. Holistic, proactive approaches and sound water policies are needed so that the region's waters can meet the region's needs.

~~It's~~It is difficult to put a price on the value of clean water. Beyond the obvious benefit of maintaining life, the additional benefits of improving water quality include increased property values, protection of human health, aesthetic and cultural value, secure utility and ecosystem services, and sustainable water for future growth and development.

However, the costs to address polluted waters are continuing to grow, including the associated expenses for water utilities who treat water so that it is safe to drink and to reuse or return to the environment. These costs increase the financial burden for individuals and businesses and make the delivery of water utility services more challenging. Investing in proactively addressing water pollution before it happens is far less expensive than paying to address it after it occurs. One of the many benefits of integrated and long-term water planning is the ability to identify risks and opportunities and the tradeoffs necessary to ensure clean and plentiful water in the region.

In Minnesota, surface waters that do not meet state water quality standards are tracked on the Minnesota's Impaired Waters List by the Minnesota Pollution Control Agency. Usually, waterbodies are added due to persistent pollution, increased monitoring, or new, emerging contaminants. Minnesota's ability to test and monitor across the state for a wide variety of contaminants~~,~~ allows waterbodies that are impaired to be identified and listed, leading to opportunities for increased investment. However, because restoration activities take time to enact and produce measurable outcomes, waterbodies are being listed faster than they are removed. Waterbodies *are* being removed from the Impaired Waters List, but progress takes time.

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Currently, there are 802 water quality impairments in 451 river sections, lakes, or stream reaches in the metro region (Error! Reference source not found.**1.43**), with many waters having more than one i

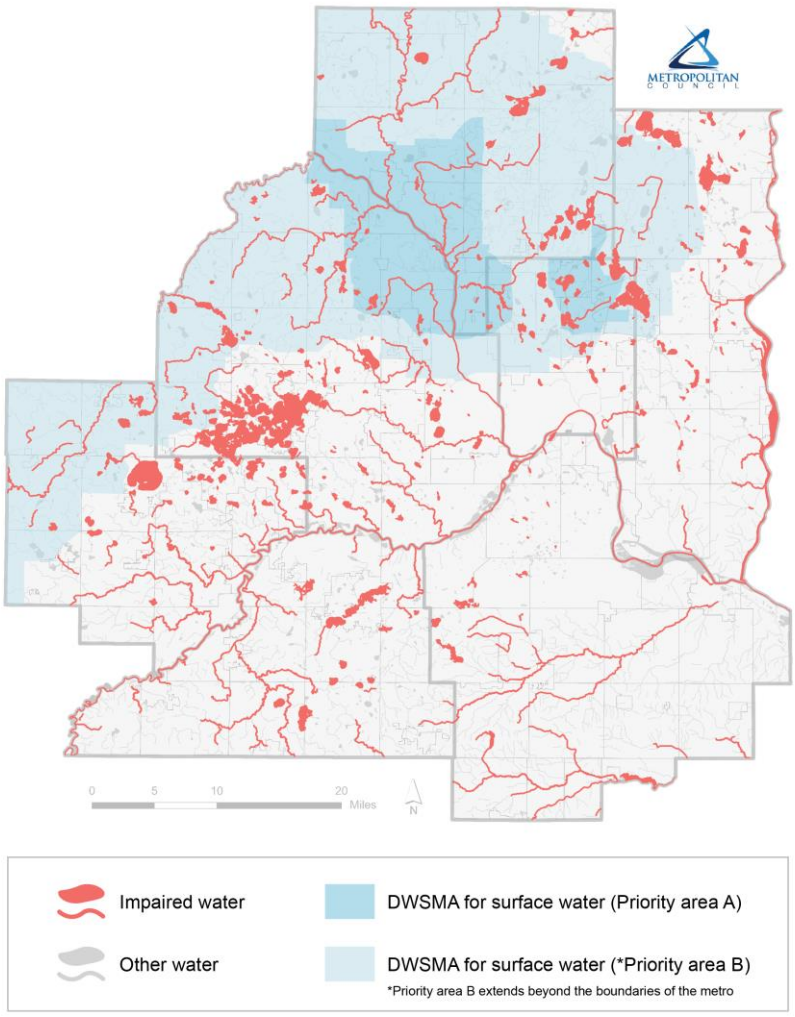
mpairment[3]. Likewise, management and regulation of water usage has advanced significantly in recent decades leading to improved preparedness and resilience, fewer conflicts, improved coordination, and a greater understanding of water sustainability.

The Met Council works with its partners towards the shared goal of safe, sustainable, and sufficient drinking water for the region. Source waters are the rivers, lakes, and aquifers that supply public drinking water systems and private wells. Source water protection is the suite of water quantity and quality actions and policies aimed to protect drinking water from pollution. Public water suppliers and the Minnesota Department of Health are responsible for providing safe drinking water, but they cannot protect drinking water supplies on their own.

Much of the land within Minnesota Department of Health-designated drinking water supply management areas (DWSMAs) is privately owned, and many of these areas extend beyond the jurisdictions where they originate, adding complexity and associated land management challenges for source water protection challenges. Further, some challenges exist due to the nature of underlying geology or where commercial and industrial activities have historically taken place. The Minnesota Department of Health works with public water suppliers, local decision-makers, other state agencies, and partner organizations like the Met Council to plan and implement activities that protect drinking water sources.

About a third of the metro area is currently covered by a ~~groundwater~~ drinking water supply management area (~~DWSMA) (**Figure**~~**Figures 1.~~~~5)~~~~.~~**3 and 1.4**), although these areas are expected to change over time as the Minnesota Department of Health updates their delineation methods (particularly for surface water DWSMAs). Around three million people, over half of Minnesota's population, are currently supplied by water flowing through these areas. In addition, roughly 200,000 people get water from private wells, which do not have surrounding areas mapped for protection. Private well owners are responsible for following the health department's guidance to protect their supplies; however, they too have limited ability to address contamination risk beyond their properties. All land use decisions, large and small, can impact source waters, making collaboration between communities, agencies, water providers, and private groups necessary to achieve source water protection goals.

[3] Minnesota Pollution Control Agency. (2024). *Minnesota's 2024 impaired waters list. https://www.pca.state.mn.us/air-water-land-climate/minnesotas-impaired-waters-list*


METROPOLITAN COUNCIL
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DWSMA for surface water (*Priority area B)
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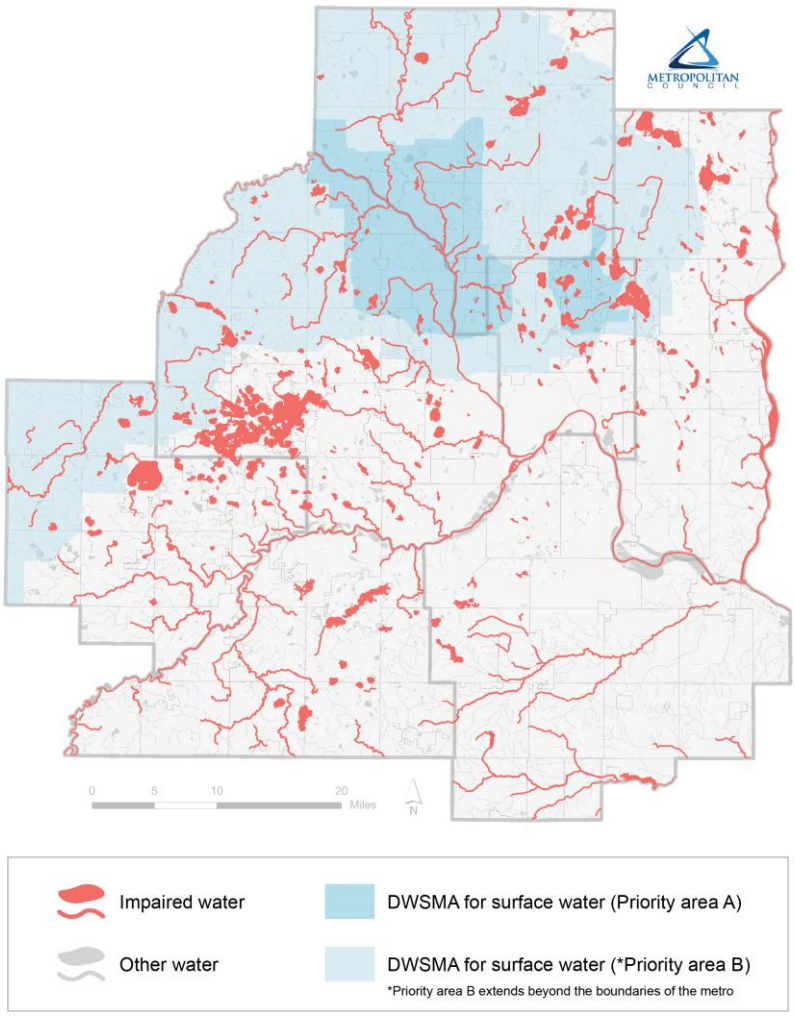
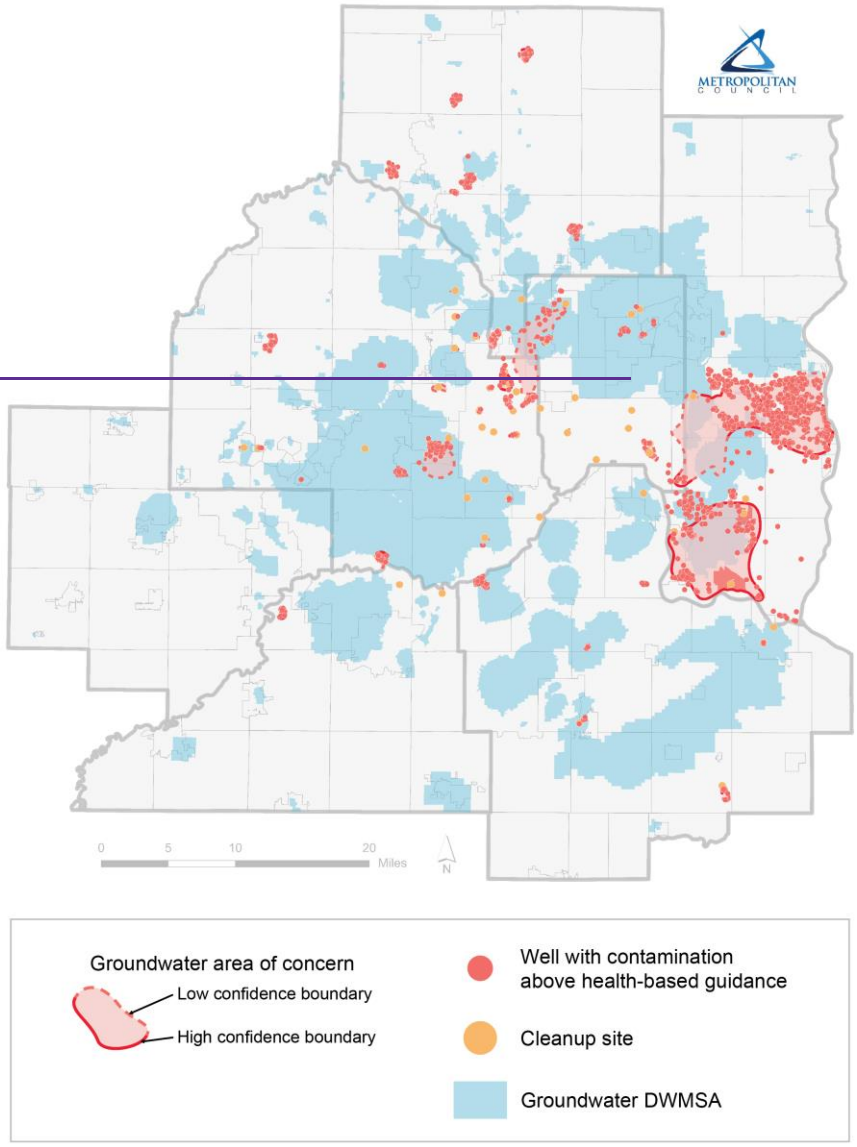


Figure 1.3: Surface Water Drinking Water Supply Management Areas and Impaired Waters ~~(303d Impaired Waters List)~~



Data sources: 303d Impaired Waters List, Minnesota Pollution Control Agency; DWSMA information, Minnesota Department of Health. This information periodically changes, please contact the agencies for the most up to date information.

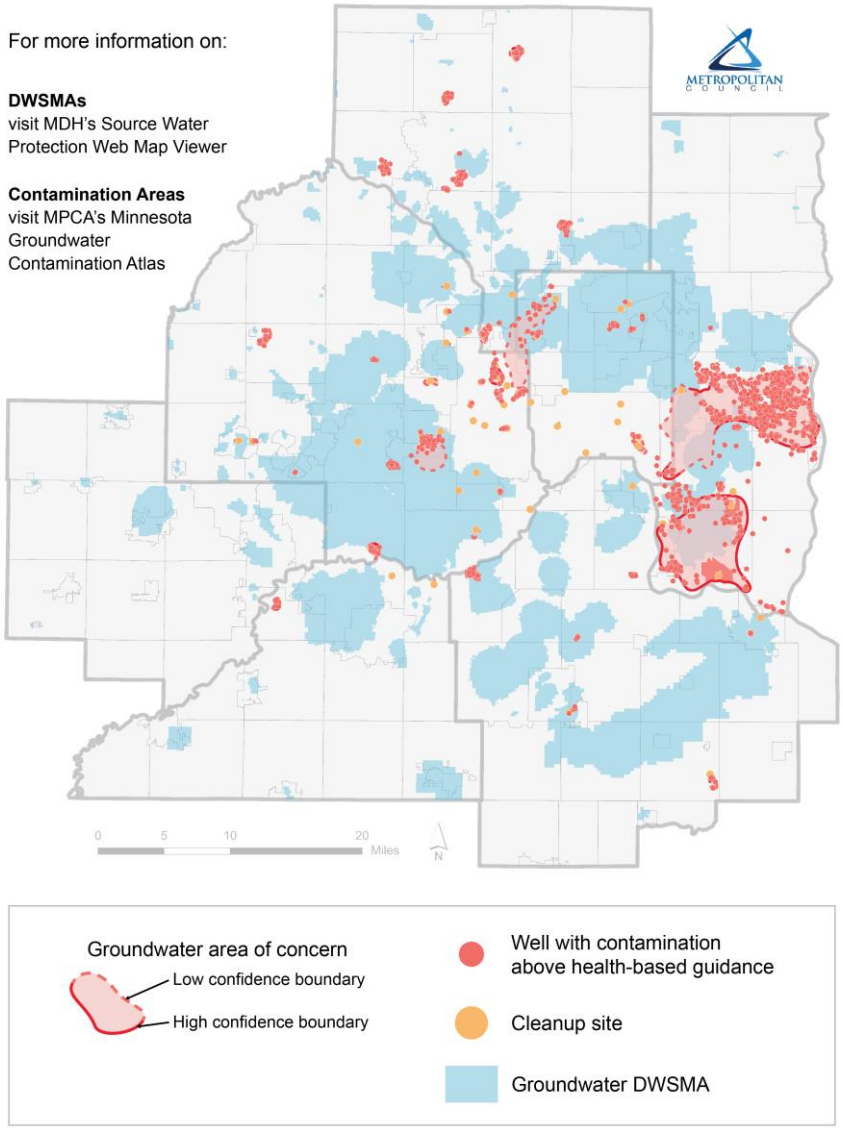


Figure 1.4: Contamination areas and groundwater Drinking Water Supply Management Areas

Data sources: Contamination areas, Minnesota Pollution Control Agency; DWSMA information, Minnesota Department of Health. This information periodically changes, please contact the agencies for the most up to date information.

There are numerous contaminants that can impact water quality in various ways. **Table 1.1** below focuses on major contaminants or groups of contaminants that are of great concern to the region's waters. Some of these contaminants have been long known (nutrients and chloride) and some are of more recent concern (Per- and polyfluoroalkyl substances). While initial efforts to understand and address the ~~contaminates~~contaminants identified in this section through monitoring, assessment, investigatory taskforces, or technical advisory groups has begun, further work and innovative approaches are needed to fully remediate the impacts of these contaminants.

Water type	Example contaminants	Concerns
Groundwater	• Chloride • *E. coli* bacteria • Elevated levels of manganese or selenium • Nitrate • Per- and polyfluoroalkyl substances (PFAS) • Dioxane • Trichloroethylene (TCE) • Radium • Arsenic	• Negative health impacts • Corrosion of infrastructure • Taste, color, and smell • Discoloration of clothing, appliances
Surface water	• Chloride • *E. coli* bacteria • Gas/oils • Nutrients (phosphorus & nitrate) • PFAS • Temperature • Radium • Sediment (TSS) • Mercury	• Human and animal sickness/death from contact, inhalation, or ingestion of waters • Toxicity to wildlife, fish, and plants • Eutrophication (too many nutrients) • Fish kills • Harmful algal blooms • Plant and animal community shifts • Aquatic Invasive Species ○ (i.e., curly pond leaf, zebra mussels, spiny water flea)
Wastewater	• Chloride • PFAS • Pharmaceuticals • Microplastics	• Corrosion of infrastructure • Health impacts to wildlife, fish and plants • Accumulation of contaminants in animal tissue • Drug resistant bacteria

Table 1.1: Major contaminants or groups of contaminants that are of regional concern

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Contaminants of emerging concern have become a priority for public water suppliers, water resource professionals, and the public. Emerging contaminants are human-made, chemical compounds detected at low levels in water that can have a detrimental impact on public health and aquatic life. Microplastics, pharmaceuticals, and PFAS are all examples of emerging contaminants that are impacting natural waters, water supplies, wastewater, and the regulatory environment. New emerging contaminants are

being identified as public health risks, and water professionals are learning more about how chemicals impact human health and the environment. There will always be "unknown unknown" contaminants, and the region needs to be prepared, adaptable, and have the resources it needs to address new challenges quickly and efficiently as they arise.

~~vi.~~ Equitable Water Services, Planning, and Management

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The Met Council holds that accessible, affordable, sufficient, and safe water for personal and domestic use is a human right. This right has been identified by the United Nations, recognized in international law, and by some U.S. states and local laws and policies. Likewise, water should be plentiful and clean to support healthy ecosystems and the life that depends on them, including the needs of humans. While some environmental location-based factors influence water quality and availability, the major drivers of water and water service disparities are historic and ongoing social, cultural, economic, and political inequities.

Across the United States, public policymaking has a long history of disproportionately favoring certain communities at the expense of others. Resources have been directed away from low-income, immigrant, and communities of color and toward affluent, predominantly white areas. Both financial and legal practices such as redlining and racial covenants limited the social and economic mobility of and opportunities for black, Indigenous and persons of color (BIPOC). Discriminatory zoning laws and urban renewal policies have bolstered white affluence as families moved to suburban and higher-income neighborhoods while further constricting BIPOC families' housing options.

Planners at all levels of government have exacerbated inequality by continually identifying low-income neighborhoods for the siting of industrial development~~;~~, creating environments where pollution has been concentrated and public health has suffered. These practices have impacted water quality, availability, and accessibility, contributing to a lack of trust in water services. Communities that are presently overburdened are disproportionately impacted when new issues arise, including the effects climate change has on water and water services.

The Met Council and other partner organizations in Minnesota are members of the U.S. Water Alliance, a national, water-focused nonprofit, ~~who~~which has identified key issues to address to achieve equitable water outcomes. Issue areas to address fall under three foundational pillars of water equity for water utilities:

1. Ensure all people have access to clean, safe, and affordable water service
2. Maximize the community and economic benefits of water investments
3. Foster community resilience in the face of a changing climate

In Imagine 2050, equity is identified and incorporated as a key value and objective of current and future planning and policymaking. The Met Council has developed an Equity Framework that guides us and the region towards an equitable future through the development of policies and actions that are community-centered, reparative, and contextualized to ensure solutions are addressing systemic inequity. We have also developed an Environmental Justice Framework that is grounded within the Equity Framework. Environmental Justice is the right for all residents to live in a clean, safe environment that contributes to a healthy quality of life. The Environmental Justice Framework ~~is~~prioritizes:

1. People-centered, data-driven decision making (contextualized)

2. ~~Prioritizes engagement~~Engagement with overburdened communities (community-centered)
3. Solutions that benefit communities beyond harm mitigation (reparative)

The work of the Environmental Services division plays a critical role in achieving environmental justice and equitable outcomes for the people of the region by listening to community concerns, centering it in our own planning and operations, and providing resources and guidance to local organizations.

Environmental justice and equity concerns regarding water include:

- Access to, and impairment of, waters for fishing and recreation.
- Access to, and affordability of, clean drinking water.
- ~~Affordability of wastewater treatment.~~
- ~~Pollution from treatment processes in nearby communities.~~
- ~~Affordability of treatment technologies to address private drinking water contamination.~~
- Climate preparedness and resiliency of water infrastructure and utility services and associated costs for overburdened residents and communities.
- Pollution impacts on nearby communities.
- Affordability of wastewater treatment fees.
- Affordability of treatment technologies to address private drinking water contamination.

~~vii.~~ Water sector workforce development

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Nationally, and in our region, the water sector faces a critical shortage of skilled workforce across various disciplines, including engineering, management, and technical operations. This shortage threatens the sustainability and efficiency of water resource management, jeopardizing public health, environmental conservation, and economic development. The challenge lies in developing a robust and diverse workforce equipped with the necessary expertise, innovation, and leadership to address emerging challenges such as aging infrastructure, climate change impacts, and evolving regulatory requirements.

Demand for skilled professionals in the water sector continues to grow due to a smaller pipeline of workers, evolving technologies, aging infrastructure, and emerging environmental challenges. Furthermore, the lack of diversity in the workforce poses a significant threat to innovation, creativity, and effective problem-solving.

Environmental Services was fortunate for decades to have a strong talent pipeline. However, as in the water workforce nationally, the water workforce in Minnesota is homogenous and aging. On the national level, nearly 85% of the water workforce is male, more than two-thirds of the workforce is white, and the average age of most water employees is above the national average for all workers. Unfortunately, our workforce is even less racially diverse than the national figure and the overall Twin Cities regional population.

Furthermore, at this moment 20% of ~~our~~the Met Council's water workforce is eligible for retirement. People of color are leaving the organization at a faster rate than their white peers. The percentage of women employed in the organization has trended downward for the past four years, currently sitting at

21% (near its lowest point since visible in data made available).[4] Declining enrollment in the past decade and the closing of one of the local wastewater treatment education programs, along with fewer people going into labor roles, has led to a smaller pool of applicants.

The water sector faces challenges in fostering diversity, equity, and inclusion within its workforce and workplaces. Despite efforts to promote equal opportunity and representation, disparities persist in recruitment, retention, and advancement opportunities across various demographics. Women, racial and ethnic minorities, individuals with disabilities, and other historically marginalized groups remain underrepresented in key roles within the water industry, hindering the sector's ability to harness the full potential of a diverse workforce.

Inequitable access to education, training, and career advancement pathways further aggravates these disparities, perpetuating systemic barriers to entry and progression for underrepresented groups. Additionally, cultural biases, discriminatory practices, and lack of inclusive policies in some water organizations contribute to an unwelcoming work environment for diverse employees, resulting in high turnover rates and diminished productivity.

A comprehensive policy framework that addresses the root causes of inequity and promotes diversity, equity, and inclusion throughout the water workforce should encompass:

- Targeted recruitment strategies
- Inclusive hiring practices
- Equitable access to training and development opportunities
- Culturally competent leadership
- Supportive workplace policies that foster a culture of belonging for all employees.

By proactively addressing these challenges, the water sector can build a more resilient, innovative, and sustainable workforce and future talent pipeline that reflects the diversity of the communities it serves and ensures equitable access to clean and safe water for all.

Roles, Principles, and Plan Objectives

The state of Minnesota has distributed water governance across multiple state and federal agencies, tribal governments, the Met Council, watershed management organizations, soil and water conservation districts, water supply utilities, and city and township governments. Clearly defined roles and responsibilities for each organization help to build collaboration and trust that are vital for integrated water planning and management since water flows across political boundaries.

~~viii.~~ Metropolitan Council's water role

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The Met Council's role related to water planning and protection is shaped by our responsibilities as the regional policymaking body, land use planning agency, and provider of other essential services in the

[4] Metropolitan Council internal "HR Workforce Dashboard"

seven-county Twin Cities metro region. It is also shaped by federal and state water protection requirements led primarily by state agencies.

Water sustainability is the responsible management of water resources (ground and surface water) to not harm ecosystems, degrade water quality, and to ensure their availability for current and future generations while ensuring a balance between economic, environmental, and social-well-being.

~~We are~~The Met Council is the regional wastewater system operator. We are also the wastewater, surface water, and water supply planning agency. We strive to ensure sustainable water resources through intentional planning and operations. Our water resource recovery facilities consistently meet National Pollutant Discharge Elimination System permit requirements. Our wastewater, surface water, and water supply planning functions work to promote sustainable water resources while addressing pollution and other factors that impact those resources. Clean water for drinking and recreation, and a robust wastewater treatment system, are all important parts of the region's livability and prosperity. We work with our partners, use our regional influence, and perform our statutory responsibilities to protect and preserve our water.

While we are responsible for essential regional services such as regional water planning and wastewater treatment, local governments focus on planning for their communities, including source water protection, surface water management, and municipal water supply and wastewater planning. Together, we work as a team to ensure clean water for the region.

The Met Council's water-related roles include partnering with a wide range of entities ~~to plan and provide~~, planning for water sustainability, and providing regional services. The policies, plans and related implementation actions in this document reflect those roles. Recognizing that one size fits all approaches are not the most useful in the region~~;~~, the provided implementation actions offer a suite of example strategies that local governments could identify within their own plans to locally address regional policies. Over the ten-year lifespan of the Water Policy Plan, as new understandings are gained, these strategies may change or evolve. This allows for regional and local water needs and planning to align.

~~1.~~ *Partner*

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The Met Council recognizes that one-size-fits-all approaches cannot address the full spectrum of water challenges across all areas of the region. The diversity of landscapes, land uses, watersheds, and local needs requires community-centered co-creation, with focus on those most affected. Partnering can take various forms, whether it is offering technical assistance, convening organizations, communities, and individuals into regional conversations, or offering grant opportunities. The Met Council commits to working with its partners to achieve our vision of clean water for future generations. Partnerships move the region towards a common vision in water sustainability, climate resilience, and equitable water outcomes. This collective effort and commitment to building partnerships and trust allows the Met Council to find sound innovative solutions to complex water challenges.

~~2.~~ *Plan*

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The Met Council's Environmental Services (Environmental Services) division collaboratively develops regional policies and plans to protect, enhance, restore, and sustainably manage the region's water resources. We have three primary water planning focuses supported by state and federal statutes. These water planning topics become an integral part of the local comprehensive plans as described in Minnesota Statute § 473.

- **Wastewater:** The Met Council prepares a comprehensive Wastewater System Plan that is a vision for both 20-year and post 20-year time ~~frame~~frames as to how, where, and when regional

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wastewater service will be provided. It provides asset information, capital projects and budgets, regulatory strategies, and long-term service needs that guide how we provide wastewater service. The regional wastewater collection and treatment system is one of the four regional systems defined in Minnesota statute (Minn. Stat. § 473.146).

- **Water management:** State and federal law requires the Met Council to adopt a water resources plan and federal requirements for a regional management plan to address pollution from point sources, such as treatment plant discharges, and nonpoint sources, such as stormwater runoff (Minn. Stat. § 473.157; 33 U.S.C. §1288).
- **Water supply planning:** ~~We are~~The Met Council is required to create plans to address regional water supply needs, including the Metropolitan Area Water Supply Plan, developing and maintaining technical information related to water supply issues and concerns, providing assistance to communities in the development of their local water supply plans, and identifying approaches for emerging water supply issues (Minn. Stat. § 473.1565).

As a part of our statutory authority, ~~we are~~the Met Council is required to review and comment on local comprehensive sewer, surface water management, and water supply plans to ensure that they are in conformance, consistent, and compatible with the regional plan. More details about local plan requirements, guidance, and the Met Council's plan review process are included in the Local Comprehensive Plan Requirements section.

~~3.~~ *Provide*

Environmental Services provides essential surface water, water supply, and wastewater planning services to the entire region. This includes technical assistance, tool development, novel research, water monitoring, and plan guidance throughout local water and wastewater plan creation and implementation. We also provide regional wastewater collection and treatment services to 111 communities through our nine water resources recovery facilities within the metro region.

Resource Recovery is the process of recovering materials or energy from a potential waste stream and recycling them for a second use or into the environment. Some methods include reclaimed water for reuse or wastewater treatment producing clean water.

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~~ix.~~ Partners' roles and relationships

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Organizations must work across silos to create the conditions for water and water service sustainability. The Met Council's water planning and management work depends on partnerships with governmental and non-governmental organizations including Tribal, national, regional, and local organizations and experts, local communities and watersheds, and residents.

Indigenous peoples are and will always be stewards of the land and water. They continue to play a vital role in protecting and guiding our region. The metro region is home to two land-holding Tribal governments, the Prairie Island Indian Community and the Shakopee Mdewakanton Sioux Community. The region is home to Indigenous residents relocated here with connections to over 100 Tribal affiliations~~,~~ and additionally holds cultural and spiritual significance to all 11 federally recognized Tribal nations within the state of Minnesota along with Dakota Tribal nations with reservation lands outside of the state. The Met Council commits to respecting and prioritizing relationships to the land, waters, and living things, and to grow our understanding of Indigenous approaches, values, and practices.

Federal water agencies provide oversight and support to state and local governments by defining national water standards, collecting data on natural resources and wildlife, maintaining navigational channels and floodplain assessments, and stewarding public lands. Examples of federal agencies that operate within the metro region are the U.S. Environmental Protection Agency, U.S. Geological Survey,

U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, National Park Service, and the Federal Emergency Management Agency.

The Minnesota Legislature and state water agencies are also important partners in regional water planning and management. The legislature provides policy direction and, in some cases, prioritizes funding. State agencies as regulators have a role in incentivizing public and private sectors to improve water utility service. These roles and responsibilities are distributed across six state agencies (**Table 1.2**).

State Agency	Role	Example Water Responsibilities
Pollution Control Agency	The Minnesota Pollution Control Agency is committed to ensuring that every Minnesotan has healthy air, sustainable lands, clean water, and a better climate.	• Monitors state water quality • Develops water quality standards • Regulates wastewater and stormwater facilities through permitting • Identifies strategies to address water pollution and to protect healthy waters
Department of Health	The Minnesota Department of Health exists to protect, maintain and improve the health of all Minnesotans.	• Provide guidance and assistance for source water protection • Inspects and monitors public drinking water supplies for compliance with the federal and state standards and regulations, including the federal Safe Drinking Water Act • Develops and enforces standards for well construction and sealing • Investigates health exposure risk to contaminates of emerging concern
Department of Natural Resources	The Minnesota Department of Natural Resources works with Minnesotans to conserve and manage the state's natural resources, to provide outdoor recreation opportunities, and to provide for commercial uses of natural resources in a way that creates a sustainable quality of life.	• Operates the State Climatology Office • Management for dam safety • Monitors and inventories wildlife • Regulation and technical assistance for floodplain management • Permitting and assessment of water use • Assessment and assistance of groundwater availability and ecological impact • Prevention of aquatic invasive species • Conducts surface water hydrologic assessments
Department of Agriculture	The Minnesota Department of Agriculture enhances all Minnesotans' quality of life by equitably ensuring the integrity of our food supply, the health of	• Regulates pesticide and fertilizer use • Monitors surface and groundwater for agricultural pollution • Operates the Minnesota Agricultural Water Quality Certification Program

	our environment, and the strength and resilience of our agricultural economy.	

Board of Water and Soil Resources	The Board of Water and Soil Resources improves and protects Minnesota's water and soil resources by working in partnership with local organizations and private landowners.	• Approves watershed management plans, soil and water conservation comprehensive plans, and county watershed management plans
		• Offers grants, technical assistance, and training to local entities for planning and implementation projects with landowners and conservation groups to:
		  • Prevent sediment and nutrients from entering our lakes, rivers, and streams
		  • Enhance fish and wildlife habitat
		  • Protect wetlands

Public Facilities Authority	The Minnesota Public Facilities Authority provides financing and technical assistance to help communities build public infrastructure that protects public health and the environment and promotes economic growth.	• Administers and oversees the financial management of revolving loan funds and other programs that help local units of government construct facilities for wastewater and drinking water infrastructure projects

Table 1.2: State agencies' water governance roles and responsibilities

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Counties, conservation districts, watershed organizations, municipal water utilities, business, and ~~private well~~ owners of high-capacity nonmunicipal wells plan, partner, and implement water projects at the local scale (**Table 1.3**). These front-line organizations know and understand the concerns that directly affect residents and work to alleviate those issues.

Local Water Organization	Example Water Responsibilities
Counties	• Develop and implement comprehensive plans in alignment with regional goals and priorities • May prepare and adopt groundwater and watershed management plans • Guide land use in townships that includes zoning, shoreland, and mining operations • Administrate subsurface sewage treatment system tracking and inspection programs • Comply with the well and subsurface sewage treatment system code and local ordinances • May regulate construction, sealing, and maintenance of water supply wells
Soil and Water Conservation Districts	• May prepare and adopt county groundwater and watershed management plans (if the authority is delegated by the county)

	• Set priorities, address issues, and build local capacity for the protection and management of surface and groundwater • Monitor and assesses water bodies for water quantity and quality
Watershed Organizations (Watershed Districts and Watershed Management Organizations)	• Develop and implement watershed management plans • Work with local governments on land use planning at watershed scale • Approve local surface water management plans created by cities within the watershed • Monitor and assess water bodies for water quantity and quality
City and Township Planning	• Develop comprehensive plans in alignment with regional policies • Create and enforce ordinances to guide land use, development zoning, and growth within city/township boundaries • Work with public works to ensure connection to municipal community public water systems • Comply with the well and subsurface sewage treatment system code and local ordinances
City or Municipal Public Water Utilities*	• Plan, develop and maintain local stormwater, drinking water, and wastewater infrastructure in compliance with water quality standards such as the Safe Drinking Water Act • Plan for capital improvements and asset renewal/replacement • Set rates to support treatment, delivery, and conveyance systems for drinking and wastewater • Ensure emergency procedures are in place • If larger city, maintains Municipal Separate Storm Sewer System (MS4) permit compliance
Noncommunity Water Infrastructure Systems (Manufactured home parks, places of worship, schools, correctional facilities, etc.)	• Develop, maintain, and use wells for domestic and commercial purposes • Emergency water supply planning • Maintain and operate subsurface sewage treatment system • Comply with the well and subsurface sewage treatment system code and local ordinances • Water quality testing and treatment technology is the individual operator's responsibility

~~Table 1.3: Local water organizations~~

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* Water utility governance is unique to each community in the region. Some operate municipal water supply, stormwater management, and wastewater conveyance as one entity. Others may have separate providers.

Table 1.3: Local water organizations

Complex water challenges are not only addressed by government organizations. They require diverse perspectives and resources that can be provided by numerous other entities. For example, university researchers, water nonprofit and special interest organizations, and public-private partnerships all bring valued knowledge and experience to tackle regional water concerns.

Another group of vital voices is the residents of our region. Each of us has a distinctive relationship with water, from enjoying a glass of water, to boating, fishing, or swimming at our favorite water body. Additionally, some residents operate their own private water infrastructure (drinking water wells and subsurface sewage treatment systems) and have the personal and financial responsibility to ensure it is working properly. Water and how ~~we all value~~the region values it shapes our expectations and the way we plan and create water policy. There is no universal personal and cultural tie to our water experiences. Therefore, we commit to ~~meaningfully~~meaningful engagement, respectfully listen, and respond to the residents of our region to ensure we protect and enhance ~~the~~our waters. The Met Council looks to incorporate all these perspectives when addressing water challenges and opportunities, as water is foundational to us all.

Building and maintaining partnerships with a wide swath of organizations and individuals broadens our ability to achieve regional water goals. For example, we support collaborative water planning and implementation in partnership with conservation districts, watershed organizations, academic researchers, and communities by:

- Monitoring water quality in the region's lakes, rivers, and streams.
- Assessing surface water and groundwater conditions and trends.
- Providing technical guidance on water protection and management through research, advisory committees, plan review, and other activities.
- Planning for and protecting drinking water supply quantity and quality.
- Assisting communities through grants to implement water efficiency, stormwater, and inflow and infiltration (I/I) programs.

The Met Council and our regional partners are uniquely positioned to address water concerns and issues across the water sector. The Met Council has statutory water authorities across the water cycle – from regional surface water, water supply, and wastewater planning to wastewater collection and treatment. We have valued partnerships with water organizations within governmental and nongovernmental sectors. We push to frame our regional water opportunities holistically to incorporate and integrate good ideas across the water sector.

~~We welcome~~The Met Council welcomes new perspectives in developing shared regional understanding of how water systems work and are intertwined. Our water challenges compel us to create novel approaches with innovation and collaboration. Every day, we work to make Environmental Services' vision of "Clean water for future generations" a lasting promise to the region.

~~x.~~ Local comprehensive plan roles and requirements

Under state law, each county, city, and township in the seven-county metro region is required to review, and if necessary, amend its local comprehensive plan every 10 years to ensure that the local plan – and local fiscal devices and official controls – are not in conflict with the Met Council's regional policies and metropolitan system plans (Minn. Stat. § 473.864). Following the adoption of the 2050 Water Policy Plan with the 2050 Regional Development Guide and the issuance of system statements, local communities have three years to amend their local comprehensive plans. The Met Council's

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requirements for the surface water, water supply, and wastewater comprehensive plan submittals are in Appendix A.

Local comprehensive plans are reviewed by the Met Council based on three primary criteria:

- Conformance with metropolitan system plans
- Consistency with Met Council policies
- Compatibility with adjacent and affected governmental units

When a plan meets these criteria, the Met Council authorizes it to be put into effect. If a plan does not meet the review standards, we can require the jurisdiction to modify its plan to reflect the regional system plans.

Conformance: Conformance is achieved if the local plan:

- Is consistent with the metropolitan system plans.
- Integrates existing or planned metropolitan public facilities.
- Addresses land use policies, plans for forecasted growth, meets density standards set by the Regional Development Guide and maximizes the efficiency and effectiveness of the regional system.

Consistency: Consistency is achieved if the local plan:

- Addresses the community role for land use policies contained in Imagine 2050.
- Addresses the linkage of local land uses and the metropolitan wastewater system plan.
- Includes an implementation plan describing public programs, fiscal devices, and other specific actions that implement the comprehensive plan and ensure conformance with regional system plans.
- Addresses official controls and includes a capital improvement program (sewers, water supply, parks, transportation, and open space) that accommodates planned growth and development.

Compatibility: Compatibility with adjacent and affected governmental units is achieved if the local plan:

- Adequately documents that it has addressed the concern(s) of all adjacent and affected jurisdictions based on comments or concerns from these entities.

When regional and local water plans align and water roles and responsibilities are clear, ~~we~~water planning organizations can act in concert to collaboratively achieve sustainable and equitable water outcomes for the region.

~~xi.~~ Principles and objectives

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To achieve the intent of this plan, "To guide the region towards a future where water is clean and plentiful, the benefits of water and water services are maximized and felt equitably, and risks and negative outcomes are eliminated or minimized," we developed four core principles and four plan objectives.

~~1.~~ *Plan principles*

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The principles ensure that we think broadly about water challenges and opportunities without making the effort unnecessarily complex. Additionally, we must measure the success of this plan through metrics to hold ourselves accountable and we are open to adapting our approach if we do not achieve our desired outcome. The principles are detailed below:

- **Watershed approach:** The state of Minnesota has adopted a watershed-based management strategy, fostering heightened collaboration and a shared perspective for planning and executing water improvement activities. This method transcends county or city boundaries, and follows topographic and hydrologic boundaries. This emphasizes partnerships among state agencies, Tribal Nations, local governments, and various stakeholders that share a connection with a common water body.
- **"One Water", integrated water management:** The metro region is perceived to be water-rich, and that water holds immense value. Integrated water management, also known as "One Water" addresses water as it moves from water supply, through wastewater systems and into surface waters. The ultimate goal of integrated water management is sustainable, high-quality water in the region.
- **Use existing systems:** The metro region has a robust water planning and wastewater operations system with many actors – community water and wastewater utilities, watershed management organizations, and regional, county, state, Tribal Nations, and federal agencies. Coordination and collaboration between these groups is necessary to protect our water.
- **Metric-based policies:** It is hard to quantify policy success without accountability. We will provide policy options with associated metrics and measurable outcomes where possible, to demonstrate the effectiveness of our water policies and actions.

~~2.~~ *Plan objectives*

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The Water Policy Plan has four objectives focused on climate, investments, health, and equity. They are vital areas to guide the region towards achieving our goal of sustainable waters by protecting, restoring, and enhancing regional waters and water services for public and ecosystem health. The connections between the natural water cycle and the built or engineered environment are evident. Additionally, the physical connections between surface and groundwater, stormwater, drinking water sources and supply systems, and wastewater treatment result in water quantity and quality connections that are complex, and require holistic, integrated planning and management approaches. The Met Council strives to integrate regional water planning efforts and operation of the regional wastewater system to help the region have waters that are clean, safe for use, and plentiful.

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~~**CLIMATE: The region's waters and water services are protected from and made resilient to the ongoing and future effects of climate change.**~~

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The policies and actions associated with these objectives direct and guide the Met Council and our partners to employ approaches that collectively result in sustainable water uses, water and water services that are resilient to risk and benefit a growing and a thriving economy – including convening partners, utilizing new tools and technologies, water conservation and protection efforts, and water planning and technical assistance. The Met Council commits to working with and supporting our regional water partners to meet the needs of current and future generations.

~~The region's waters~~**CLIMATE: The region's waters and water services are protected from and made resilient to the ongoing and future effects of climate change.**

The region's surface water and groundwater, water infrastructure, and utilities are experiencing the impacts of climate change. Observations show that the frequency and intensity of storm events has shifted, winters are warming, growing seasons are extending, and more extreme heat

and drought events are projected to occur over the coming years and decades. These and other changes create risks to public and ecosystem health, while magnifying past and future water and water service challenges. In partnership with Tribal Nations, the ~~State~~state of Minnesota, local communities, and our regional water planning and management partners, the Met Council supports work that helps the region to mitigate greenhouse gas emissions, limit risks and adapt to climate change impacts, and be resilient when new and evolving challenges threaten water and water services and a high quality of life in the region.

INVESTMENTS: Water protection, planning, management, and infrastructure investments are optimized to ensure public and ecosystem health are fully protected now and for future generations.

Water professionals provide critical operations and planning services and put significant investment into water infrastructure for stormwater, wastewater, and local water supply across the region. We work to optimize the existing investments and thoughtfully and responsibly plan future programs and infrastructure to sustain and serve our growing region. The funding for this work and water planning must be supported now and into the future. We will continue to work to secure funds and grants for our efforts as well as to support local communities in those pursuits. We have a responsibility to the region to protect our region's waters with community input to identify needed expansions or additional service needs.

HEALTH: Natural waters, source waters, water services, and infrastructure are managed, restored, and enhanced to protect public and ecosystem health that ensures a high quality of life in the region.

Through our breadth of services, we will continue to protect public and ecosystem health for the region and those downstream. The protection of these critical resources will allow our region to be successful, support growth, and improve the health and well-being of all living things. Examples of how we work to protect public and ecosystem health include wastewater treatment, water quality monitoring, source water protection, and technical assistance.

EQUITY: The benefits of clean and abundant water and water services are defined by local needs and environmental context, accessible, and justly shared by all residents and communities.

The Met Council and our partners work across the region to provide access to safe and affordable water for drinking, recreation, cultural, industrial, and other social uses. Not all communities have the same water needs, environmental conditions, or cultural connection with water. The Met Council will be inclusive of community perspectives in our efforts to identify water service and benefit gaps, co-create solutions, and provide resources for the work necessary for an equitable water future.

The associated objective icon will appear in the policy section of this plan to indicate the connection of policies that support each objective.

Water Policies

The region faces many complex water challenges. However, these challenges can be addressed with concerted and collective action. The region must also take proactive actions to ensure that the next generations are not burdened by the water challenges of today and that they are able to address new challenges as they arise.

The Water Policy Plan contains policies that recognize water issues are connected across water sectors and that partnership is required because issues and solutions in one sector are likely to influence the others. Regional water polices are intentionally crafted to apply across multiple water areas wherever feasible based on the Met Council's roles and responsibilities and the roles of our many partners in the region. By aligning the regional Water Policy Plan and its component water supply and wastewater system plans with local needs and water planning efforts, communities, Tribal Nations, and agency partners can be aligned on actions to protect current and future water needs. The Water Policy Plan contains 12 policies, each containing desired outcomes, and example actions that support the policies and outcomes. The actions are work the Met Council is currently performing or ~~work that the Council~~ will be performing in the future based off needs identified through research and stakeholder engagement with our partners.

1. Integrated Water Policy

Water planning, management, and operations are collaborative and holistically address the natural and built water cycle.

The Water Policy Plan is an integrated plan that supports the Met Council's core mission to operate and manage the regional wastewater collection and treatment system, and plan for wastewater services, water supply, and water resources management for the region. Water organizations within the metro region need to work together to address issues that transcend water organization boundaries to prepare water management plans. These plans must promote the enhancement and restoration of regional waters (lakes, rivers, streams, wetlands, and groundwater) and allow for economic prosperity including affordable and sufficient water to meet the needs of residents, institutions, businesses, industries, and agricultural producers.

Desired outcomes:

- Federal, Tribal, state, regional, and local water plans and policies align to support sustainable and equitable water outcomes.
- Water planning and management decisions consider the needs, challenges, risks, and impacts of planning decisions for both natural surface and groundwaters, as well as water moving through the built environment.
- Water organizations work collaboratively across geographical, political, social, and cultural boundaries to achieve water sustainability.
- Water planning and management roles and responsibilities within the region are clarified and any identified gaps collaboratively addressed.
- The Met Council coordinates among its divisions and across the integrated water cycle to maximize the benefits of clean and plentiful water from regional investments.
- Surface water and groundwater in the region are protected and restored to meet the needs of current and future residents, communities, ecosystems, and economies.

Actions:

Partner

a. Convene and facilitate discussions and cross-water sector solutions that support sustainable waters and delve into regional water issues that transcend community or watershed organization boundaries.

b. Collaborate with federal, Tribal, state, and local partners on studies that develop information and approaches that enhance the sustainability of water services of the Met Council and local providers.

c. The Met Council will take a leadership role in coordinating between Tribal staff and relevant state agencies' staff including Tribal Liaisons.

~~c.~~d. Support regional outreach and educational opportunities with organizations that advance integrated water planning and management through consistent messaging regarding pressing water concerns.

~~d.~~e. Partner with communities, water agencies, technical experts and residents to identify risks, gaps, associated vulnerabilities, and develop solutions for our regional water concerns.

f. Partner with economic development entities on projects with regionally beneficial economic, social, and environmental outcomes.

Plan

e. Provide local surface water, water supply, and wastewater plan timing, requirements, and guidance to align state, regional, and local efforts in water planning, management, and development decisions.

f. Ensure that local water plans and related environmental planning documents are developed collaboratively and consider the natural and built water cycle, through the Met Council's plan review authority and function.

g. Prioritize protection and enhancement efforts for regional waters listed in the Priority Waters List.

Provide

h. Provide technical information to watershed organizations, city planners, and local water providers on practices to use and incorporate into their operations or planning efforts that protect water quality and quantity.

i. Advocate for federal, state, and regional financial assistance to local governments, water suppliers, and other partners on water issues and water management activities.

j. Advocate for legislative initiatives that advance progress on challenges and opportunities identified by partners that align with regional water policies and priorities (examples: reuse, bonding to develop shared water supply systems, wellhead protection or water quality rule changes).

2. Water-Centered Growth and Development Policy

The effects of land use and population changes on water and water service providers are identified, potential negative outcomes addressed, and past harms ~~repaired.~~will be evaluated and mitigated. The benefits of clean and plentiful water are integrated with, protected by, and restored through development and redevelopment decisions so that the region can grow equitably and sustainably.

As the region grows, development and redevelopment change how land is used, influencing both the need for, use of, and risks to water and water service sustainability. Growth increases the need for additional water, water infrastructure, and water utility services. Increasing demands on water sources and water utilities, along with other potential stressors like climate change, have associated economic, environmental, and social costs that can lead to water sustainability challenges.

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For growth in the region to be sustainable, the use of and risks to water and water utility services must be considered when planning for and making decisions about how the region grows, develops, and redevelops. This requires the region to identify and understand the limitations of current water and utility systems, project needs and drivers of future change, and pursue opportunities to protect, restore, and enhance water and water services.

How water is used and the potential risks to the quality and quantity of water sources and services are connected to the ways metro area landscapes are used and managed. For instance, the potential for and types of water pollution vary across urban and rural landscapes. Much of the commercial and industrial use of water is concentrated in more urban areas, while agricultural land and water use is found in rural parts of the region. Similarly, highly developed areas tend to have smaller and fewer natural areas than less developed landscapes, with associated differences in ecosystem health, recreational opportunities, and access to nature.

The Met Council's water planning functions take into consideration the varied and unique interactions between land use and water quality, growth patterns and industry, and the long-term efforts to maintain ~~a~~ plentiful and healthy water ~~supply~~. The Met Council provides guidance, tools, technical support, and coordinated planning that supports and connects state, regional, and local action.

As water and water service needs vary across the region, so do local and regional actions. The diversity of land uses and the complexity of water systems means that one size fits all solutions are rarely effective. By accounting for and incorporating water and water service needs into growth, development, and redevelopment planning, the Met Council and the region's communities can identify holistic solutions that align growth, development, and redevelopment activities with sustainable water outcomes.

Desired Outcomes

- Natural waters, water supply, and wastewater systems and services are accounted for and addressed in new development and redevelopment planning.
- Growth is prioritized where ~~multiple source water supplies are feasible and where~~ existing infrastructure can accommodate ~~growth~~it and where additional water supply sources are most feasible, to improve resiliency.
- Growth is limited as much as possible to areas that can sustain reliable water supply and water services.
- The quality and quantity of source and recreational waters is protected and restored.
- Recharge areas are identified, protected, and enhanced through land restoration and new systems that promote infiltration.
- The Met Council and local partners implement engineered systems and new technologies that enhance the rate of groundwater replenishment where feasible and appropriate for public health.
- Current land ~~uses~~ and future land use changes ~~consider equity,~~ reduce and prevent negative water outcomes, ~~and~~ enhance the benefits of clean and abundant water in all communities, and ensure land use changes do not further disadvantage communities that already bear a large burden of negative environmental outcomes.
- Development and re-development plans consider natural waters and water system sustainability, including potential impacts to public and ecosystem health, as critical parts of land use decisions, planning protocols and procedures.
- Public water suppliers, land use planners, and developers have tools, funding and authority to work together - supported by aligned agency directions - to guide and support development in

ways that balance communities' economic needs while protecting the quantity and quality of sources waters that are vital to the region's communities.

- The Met Council works with its regional partners and technical experts to develop guidance and example ordinances that protect the region's water.

Actions:

Partner

a. Partner with state, Tribal, local, and watershed planners and water utility staff to build a shared understanding and identify strategies that address risks to public and ecosystem health.
b. Foster preservation of areas that help to protect surface water and groundwater quality and quantity through stakeholder engagement, technical assistance, outreach to local governments, and plan review.
c. Encourage participation in the agriculture certification program and practices that improve soil health like regenerative agriculture through the Met Council-monitored Agricultural Preserves Program and partnerships with the Minnesota Department of Agriculture, and local soil and water conservation districts.
d. Work with communities, watersheds, soil and water conservation districts, agricultural landowners and businesses, and agency partners to identify, promote, and assess best management practices, including nature-based stormwater management.
e. Partner with local and regional experts to identify needs and develop tools that help to improve public understanding around contamination, well testing and maintenance, source water protection, and publicly available resources.
f. Assist communities and watersheds in their application of regional treatment of stormwater to reduce design and maintenance costs while increasing the utilization of developable land.
g. Encourage local efforts that result in restored social and cultural connections through human-water interaction.
h. Partner with state, Tribal, and local water stakeholders to develop water supply constraint and availability criteria, to inform future regional growth projections and long-range planning.

Plan

~~h.~~i. Support the development and coordinated review of local comprehensive plans, comprehensive sewer plans, local surface water management plans, water supply elements of comprehensive plans, source water / wellhead protection, county groundwater, and other environmental ~~impact~~documents and plans with partner agencies and communities.
~~i.~~j. Support and use the latest research to improve and update stormwater infiltration requirements and recommendations around practices, particularly in vulnerable drinking water supply management areas.
~~j.~~k. ~~Evaluate how~~Partner with state agencies and local governments to establish water supply constraints to inform the management of growth and development~~, urban and rural land uses, and overall land use change impact and influence water supplies and local water needs~~ across the region.
~~k.~~l. Support, guide, and inform partner's implementation plans that promote the use of nature-based, green infrastructure solutions, including on Met Council properties.

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Provide

~~l.~~m. Analyze the impact of land practices on water quality and quantity, including risks for source water areas, and the benefits of reducing impervious surfaces.

~~m.~~n. Identify and develop tools and resources to promote land use practices and development decisions that enhance water quality and quantity for communities and watersheds across the region.

~~n.~~o. Identify and develop tools and resources to better understand pressures on and interconnection of the region's rivers, lakes, streams, and aquifers to help regional, local, and watershed planners and water utility staff make informed water management decisions.

~~o.~~p. Offer grants or other funding opportunities that protect and enhance water quality, quantity, or other water benefits throughout the region.

3. Water Equity Policy

Access to and the benefits of safe, plentiful, and affordable water, including sustainable water utility and ecosystem services, are shared among all residents and communities by addressing inequities with community-centered solutions that go beyond harm reduction.

The Met Council recognizes that water inequities exist in the region, and we will continue to grow our understanding of these challenges throughout the life of this policy plan. Conversation and co-creation with residents and overburdened communities add context to and guide our policies and approaches, address past and ongoing harms, and work toward remedying injustices. The Met Council is committed to identifying and addressing water equity gaps and concerns within our organization including our role in past harms, building trust with residents and overburdened communities, and supporting ~~with~~ our planning and utility service partners to do the same.

Desired outcomes:

- All residents have access to safe and affordable water for drinking, recreation, cultural, ~~and~~ social, spiritual, or communal uses.
- The public and ecosystem health benefits of clean, safe surface and drinking waters are fully achieved in all communities in the region.
- Water utility and ecosystem services gaps are prioritized and addressed in overburdened communities.
- Historically marginalized and overburdened populations are centered in water planning and management conversations and decisions.
- Improvements to the regional wastewater conveyance and treatment systems enhance regional aesthetics and amenities as directed by communities.

Actions:

Partner

a. Address environmental justice issues by working with overburdened communities and regional partner organizations.

b. Engage with residents, prioritizing overburdened communities, and other local and regional partners to understand local perspectives and identify water utility and ecosystem services and benefit gaps in water planning and the delivery of regional water utility-related improvements.

c. Build trust with Tribal nations and Tribal communities by amplifying and honoring Indigenous values, perspectives, and experiences in order to collaborate on solutions that ensure sustainable and equitable water outcomes for the region.

d. Environmental Services will partner with other Met Council divisions on overlapping equity efforts to produce equitable water outcomes.

Plan

e. Infrastructure investments and resource protection are prioritized to promote equitable public and ecosystem health outcomes and provide solutions to systemic issues that benefit communities beyond harm mitigation.
f. Local ~~comp~~comprehensive plan updates are supported by broad community engagement to ensure community water values are reflected in long-range plans.
g. Address water inequities within our work, including plan review, the design and operations of wastewater facilities, and the planning for and management of water and water services in the region.

Provide

h. Met Council staff will convene communities and residents who have water equity and environmental justice concerns. We will work together to address policies and practices that cause injustices, strengthen our relationships, and build trust in our organization and the water services we and our partner organizations provide.
i. Identify the diverse water experiences and values across the region to understand how overburdened communities and residents are impacted by the work of the Met Council and other water organizations to inform water planning, policies, and work approaches.
j. Develop information and tools for the region that inform and support equitable water outcomes.
k. Incorporate environmental justice and water equity considerations into funding and grant applications to address past barriers faced by historically disproportionately burdened groups.

4. Climate Change Mitigation, Adaptation, and Resilience Policy

The effects of climate change on natural waters, water infrastructure, and water service providers are proactively identified, assessed, mitigated, and adapted for to enhance community and environmental resiliency.

Climate change poses significant risks to the water the region relies on for public and ecosystem health and economic productivity. Various acute and chronic changes to weather patterns including extreme storm events, drought, flooding, warming temperatures, extended growing seasons, and others impact the ability of water service providers, like the regional wastewater utility and community water suppliers, to provide their essential services to the region. Climate impacts can threaten the reliability of water infrastructure and service delivery, and the predictability of the regulatory environment, resulting in increased costs for water utilities and those they serve. Other public water service providers, businesses and industries with water appropriation permits, and individuals with private water supplies and wastewater treatment infrastructure may also be impacted.

Likewise, climate change impacts natural waters and water sources that put ecosystem and public health and associated societal and economic benefits at risk. To ensure the health and abundance of the region's waters, as well as the robustness of water services, the region must proactively address the current risks and impacts of climate change and plan for known and unknown impacts in the future. This means that the factors that drive climate change like greenhouse gas emissions are mitigated, and that the region can adapt to new and evolving conditions. Doing so helps to limit negative outcomes

and increases the resiliency of communities and the water and water services ~~we all rely~~the region relies on.

Desired Outcomes:

- Actions are taken locally and regionally to lessen greenhouse gas emissions, adapt to changing climate conditions, and equitably address climate impacts across all water planning and management sectors.
- The region's water service providers and managers are prepared for and able to adapt to climate impacts to water sources and water infrastructure.
- The tools and resources needed to plan for and respond to climate impacts across water sectors to develop and enhance the region's resilience to current and future climate challenges are developed and in place.
- Met Council and local actions align with the Minnesota Climate Action Framework.
- Climate risks and their potential to impact the benefits of clean and plentiful water and water services are assessed across water sectors, in the built and natural environment.
- State and regional climate objectives are integrated into wastewater and water supply operations and water and watershed planning, across local and regional scales.
- Increased hazard mitigation and improved emergency preparedness.

Actions:

Partner

a. Collaboratively partner with water planning~~,~~ and water management organizations to address the effects of climate change on water, water utilities, and water services.
b. Partner with and support academic institutions and other organizations to conduct research to generate metro area-specific climate change information, identify potential risks and benefits, develop new technologies and approaches to address challenges, and better understand future climate scenarios based on current science and models.
c. Support the research and development of new technologies or other innovative approaches to reduce emissions throughout water utility operations.

Plan

d. Assess climate vulnerabilities and risks within regional wastewater facilities and operations to prepare for and adapt to current and future climate impacts.
e. Develop guidelines that inform the design and placement of regional wastewater infrastructure based on the latest scientific and engineering knowledge to address climate change risks and maximize longevity.
f. Support low-impact design, renewable options for wastewater and drinking water, and the integration of nature-based solutions into regional development.
g. Work with state agencies and local governments to prepare for evolving climate conditions, droughts, floods, and extreme weather events, through the Minnesota Drought Task Force, the Minnesota State Drought Plan, and other coordination activities.
h. Assess the risks to water services and benefits from climate change~~,~~ and develop mitigation and adaptation plans and planning guidance for the region.

Provide

i. Manage and renovate facilities and land holdings to reduce impervious surfaces, integrate green infrastructure and nature-based solutions within our stormwater management systems, install native plantings where possible, and be a regional leader in climate-focused land management.
j. Assess vulnerabilities, risks, and climate preparedness across the natural environment, built water environment, and water utilities to identify challenges, gaps, and opportunities to ensure the present and future water needs of the region are met.
k. Develop and share tools, information, guidance, and educational materials around climate mitigation, adaptation, and community resilience for the local and regional audiences.

5. Conservation and Sustainability Policy

The Met Council and its regional partners work together to ensure the region's water is conserved and used efficiently to optimize current water infrastructure and treatment investments, safeguard the sustainability of water sources, and ensure the reliability of water utility services.

The current and long-term viability of natural waters, water infrastructure investments, and the services provided by water utilities depend on the wise use and conservation of water. The sustainability of water, water utilities, and water infrastructure starts with practices that conserve sources, protect infrastructure investments, and use water efficiently. When we use water efficiently, we are using only what is needed, limiting the need for additional water infrastructure, treatment, and associated energy use and costs. We are also optimizing and, in some cases, extending the life of current investments in water services and infrastructure, helping to ensure that the water and water systems we rely on are available to meet needs in the future.

Conservation behaviors and efficiency practices help to ensure water sources are available and more resilient during periods of stress like an extended period of drought or contamination event. Through these best management practices, the region can ensure water and water services are sustained, water conflicts are eliminated, and the current and future water needs of the region are met.

All water supply and wastewater systems should have sufficient funding to provide affordable services that meet the needs of communities. Efficient water use and conservation practices help to lower treatment and infrastructure investment costs for water utilities. Limiting these costs helps the region to sustainably operate and maintain its water utilities. It also helps individuals, businesses, and industries to lower costs and contribute to the stewardship of the region's water. All communities should share in the economic, social, and environmental benefits of investment in water systems, and those investments should be maximized wherever possible.

Desired outcomes

- The water needs of all cities, townships, residents, and ecosystems across the metro region are met now and into the future.
- Efficient use and water conservation practices are prioritized and invested in at the local and regional level to help optimize all water infrastructure investments.
- The Met Council explores and supports community efforts to adopt technologies that increase the efficient use of water and reduce energy consumption.

- Communities can act quickly, thoughtfully, and equitably to address aging infrastructure, contamination, changing groundwater conditions, changing water demand, and financial challenges.
- Communities and water agencies understand the sustainable limits of groundwater and surface water sources.
- Agency priorities, management, and regulatory strategies are aligned and support local plans for land use and related water demand that is consistent with the ~~original~~available design capacity for water infrastructure.

Actions:

Partner

a. Partner with local organizations to best understand and address water conservation and efficiency practices through research, data assessment, tool development, and convening conversations that support investments and behavior change.
b. Partner and support efforts, including developing informational resources, that encourage residents, businesses, local government units, homeowner associations, and water utilities to incorporate new technology and behaviors, as a means of achieving water sustainability and energy efficiency in the region.
c. Promote engagement of water users ~~about~~around water conservation to reduce water demand and support reliability and protection of our water supply.
d. Work with water supply service providers and agency partners to prioritize work with significant water users that may reduce water use, promote conservation, and implement reuse where applicable.
e. Work with soil and water conservation districts, watersheds, or other local organizations that have established relationships and are a trusted source of information within the agricultural community.

Plan

~~e.~~f. Create and develop funding requests with partners for education campaigns, water infrastructure projects and feasibility studies that benefit multiple communities.
~~f.~~g. Plan and invest to use water efficiently and regeneratively at Met Council owned properties and facilities, where feasible.
~~g.~~h. Work with agency partners and universities to map recharge areas and groundwater-dependent ecosystems and their groundwater-sheds to assess their vulnerability to increased pumping and opportunities to protect recharge.
~~h.~~i. Support water supply and wastewater system emergency preparedness planning in collaboration with state agencies and local governments.
~~i.~~j. Support local ~~plans that~~water supply planning to identify long-range water demand and commit to approaches that reduce per capita demand to help manage infrastructure capacity.

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Provide

~~j.~~k. Implement water conservation and efficiency technology and activities in the operation of the regional wastewater collection and treatment system.
~~k.~~l. Install drought-resilient, native landscaping on Met Council properties to reduce the need for irrigation and turfgrass management, where feasible.
~~l.~~m. Support programs targeting water and energy conservation practices and implementation of efficient water and energy use like the Minnesota Technical Assistance Program (MnTAP) to assist local businesses, residents, and communities.
~~m.~~n. Support efforts to direct residents, homeowner associations, and developers to prioritize alternatives to using drinking water supplies for lawn watering, such as installing low-

maintenance turf, no-mow, or native landscapes that reduce outdoor water use and support research and studies to identify other effective alternatives for the region.

n.o. Explore connections with the agricultural community to understand how farming practices impact water quantity and quality and support efforts to decrease groundwater use for irrigation and implement best management practices to minimize water quality degradation.

o.p. Continue to offer grants to support water conservation and efficient water use practices and appliances.

6. Water Reuse Policy

The Met Council works with partners to reduce barriers, pursue opportunities, and support efforts to reuse stormwater and wastewater, while balancing public and ecosystem health and financial viability.

The region has already begun to explore and implement ways to lessen its reliance on our water resources by reusing treated stormwater and wastewater for non-potable purposes. Stormwater reuse is the practice of harvesting stormwater runoff to meet non-potable water demands (for example, irrigation, toilet flushing, etc.). Wastewater reuse is the practice of treating wastewater effluent to a level that allows for potable or nonpotable use before releasing it back into the water cycle. This highly treated wastewater, called reclaimed water, must meet water quality guidelines established by the Minnesota Pollution Control Agency before it can be used. Reuse can be a cost-effective and water-smart solution for industrial or growing areas, or when there may be barriers to accessing groundwater for nonpotable uses.

Changes in climate and continued growth in the region have increased demands on and added stress to water supply systems, ecosystems, and valued water resources. Water reuse can offset the demands being placed on surface waters and groundwater. The metro region may not have an immediate need to implement reuse for drinking water sources as in the arid southwest, but we are seeing clear impacts on our surface water and groundwater quality and ~~quantities~~quantity, and associated ecosystem impacts. These impacts may continue or become more advanced in the future as populations grow and climate change influences become more severe. Therefore, alongside the implementation of reuse for nonpotable purposes, we need to begin proactively considering the reuse of water for potable purposes in the region to be prepared for future scenarios where those investments are needed.

The state and other partners in the region are also exploring engineered systems, like advanced aquifer recharge, to replenish and sustain water sources. Continuing to support and explore these systems and techniques is valuable, as there is ~~a~~ great potential to reduce impacts to water sources, ecosystems, and water utilities, while addressing fundamental water sustainability issues in the region. However, techniques like advanced aquifer recharge face many technical, economic, and regulatory obstacles that have so far made their implementation a significant challenge.

The Met Council supports furthering the implementation and use of stormwater and wastewater reuse across the region. Requests have been and will continue to be made to use reclaimed water from Met Council water resource recovery facilities for various purposes. In response to past requests, the Met Council convened a task force to determine a cost-sharing approach to wastewater reuse. That

approach is shared in Appendix D and continues to stand as the Met Council's financial commitment to future reclaimed water projects.

Desired outcomes

- Water reuse projects are implemented across the region by our partners and are supported by the Met Council through financial and technical support.
- State guidelines on stormwater reuse are clarified and barriers to implement stormwater reuse are reduced.
- Stormwater reuse guidelines for the state and region balance the needs of implementors, state agencies, public health, and financial cost, while furthering sustainable waters.
- Reclaimed wastewater reuse is implemented at Met Council facilities and a regular part of our operations.

Actions:

Partner

a. Work with agency partners to better define agency roles and responsibilities for reuse and reduce barriers for reuse in Minnesota.
b. Advocate for and participate in interagency collaboration to understand the effectiveness of water reuse and infiltration as a stormwater management practice, while considering flooding, drought, and a range of potential climate futures.
c. Collaborate with partners to determine direction on whether further guidance and/or regulation is needed for the various stormwater reuse practices being installed in the metro region. Work with partners and agencies to better understand the risks and cost-effectiveness associated with all types of reuse before decisions are made about guidance or regulation.
d. Work with and support local partners on their ~~stormwater~~water reuse projects and provide guidance and resources to help partners plan and implement those projects benefitting water resources and ecosystem restoration.
e. Support research on the benefits, costs, and feasibility of using reclaimed water for high-volume industrial, agricultural, or commercial purposes and for groundwater injection.

Plan

f. Identify and evaluate the economic and technical feasibility of best practices that enhance groundwater recharge and make the best use of reclaimed water and stormwater while protecting source water quality.
g. Identify and plan for long-range regional investments in reclaimed water use that protect source water quality and quantity.
h. Identify criteria for viable reclaimed water projects including, but not limited to, reducing effluent contaminant concentrations to match the water quality need associated with the intended reuse.
i. Pursue sources of external funding to complement Met Council funding of reclaimed water projects, including Clean Water Legacy Funds, state bond funds, and reuse grants.
j. Encourage local efforts to plan for multi-development stormwater capture and reuse in developing areas.

Provide

k. Promote and invest in stormwater and wastewater reuse, both internally and regionally, as viable alternatives to augment nonpotable water uses to support regional growth when feasible.
l. Use reclaimed water to meet nonpotable water needs within Met Council water resource recovery facilities where economically feasible.

m. Support our partners in their water reuse goals and projects through technical assistance such as information, educational resources, example ordinance language, potential grant or financial support, and other implementation support.
n. Report on all wastewater reuse study and project activities at the Met Council's annual budget outreach meetings.
o. Follow the cost-sharing and project implementation recommendations of the 2017 Task Force (in Appendix D) when cost-sharing for any wastewater reuse projects with the Met Council.

7. Pollution Prevention and Contaminant Management Policy

The quality of the region's surface, groundwater, and drinking water supplies is protected and restored through proactive and collaborative action. Planning and management for source water protection, stormwater, wastewater, and water resources prioritizes public and ecosystem health and equitable outcomes.

Polluted water impacts every aspect of the water use cycle, from the quality of water for recreation, to drinking water availability and treatment, to wastewater treatment requirements, to aquatic life, and to public and ecosystem health. The Met Council is committed to partnering with ~~regional water professionals to further our efforts and actions~~others to address contamination and ~~work to~~ improve water quality.

~~Today we~~Today, water professionals across the region are working to address environmental pollution due to nitrogen, phosphorus, chlorides, per- and polyfluoroalkyl substances (PFAS), sulfates, ~~and~~ manganese, selenium, and arsenic. Tomorrow may bring something new, either another contaminant of concern or new or modified standards or regulatory limits. ~~Within our own wastewater treatment processes, we will mitigate these threats to the best of our technological ability. New and changing limits have the potential to increase operational expenses and require new technology installation or additional treatment infrastructure for the Met Council, local water suppliers, watershed managers, and others. Our goal is to cost effectively meet current and new regulatory standards~~The Met Council acknowledges the challenges and timelines that water utilities and their partners face in implementing changes to federal rules around drinking water and wastewater. High water quality and pollutant reduction is only successful if the region works together towards clean water resources.

Within the Met Council's wastewater treatment processes, we will mitigate these threats to the best of our technological ability. Our goal is to cost effectively meet current and new regulatory standards. A team of operators, chemists, engineers, mechanics, water resources scientists, and others support our water resource recovery facilities in meeting their federal clean water discharge permits. Treatment methods and technological improvements are addressed and implemented as new and modified regulatory limits arise. Constant monitoring and communication with other state and federal agencies support us in our goals and our record of compliance.

~~High water quality~~New and ~~pollutant reduction is only successful if~~changing limits have the ~~region works together towards clean water resources.~~ potential to increase operational expenses and require new technology installation or additional treatment infrastructure for the Met Council, local water suppliers, watershed managers, and others.

Preventing water from being contaminated, also described as source reduction or source water protection, is an effective and ~~inexpensive~~less expensive way to keep waters clean. Activities like smart

salting during wintertime, cleaning catch basins of debris, and addressing PFAS at the source are only some examples of the many ways to keep our water ~~bodies~~resources healthy.

Desired outcomes:

- Protection, restoration, and improvement of water quality is holistically pursued and achieved.
- The Met Council partners, engages, and provides expertise in the research and regulatory work for contaminants of concern with other public agencies.
- The Met Council stays abreast of new and evolving emerging contaminants, contaminant issues, and responds to changing regulatory requirements.
- The connections between water quality (physical and chemical), public and ecosystem health, and equitable water outcomes are addressed in planning and management decisions.
- Efforts to protect and improve water quality are addressed collaboratively by local governments, state agencies, regional partners, Tribal nations, and individual residents.
- Communities have the resources they need to provide a safe water supply. A shared process is developed that allows communities, water utilities, and regulators to respond in a more coordinated and effective way to both contaminants of emerging concern and existing contamination.
- Pollution in stormwater is reduced with the widespread use of best management practices and green infrastructure.
- Public and environmental health is protected, and all residents, communities, Tribal Nations, and agency partners have the support, technical and financial, needed to address evolving and emerging contaminants.

Actions:

Partner

a. ~~Develop potential water quality standards with~~Assist stakeholder groups, state agencies, local utility organizations, researchers, and regional water professionals in the development of any newly required water quality standards.
b. Address current and emerging contaminants with the support and partnership of stakeholder groups, state agencies, local utility organizations, researchers, and regional water professionals.
c. Partner with other state agencies in determination and review of state water plans, permits and regulatory limits through convening assistance and technical support.
d. Continue working with state agency partners in the development and revisions of the Minnesota Nutrient Reduction Strategy and other state water plans.
e. Support research and wastewater treatment activities that address PFAS, chlorides, and other contaminants specific to wastewater treatment, both internally and with external partners.
f. Partner with and regulate industrial customers to help reduce environmental impacts while encouraging economic development.
g. Partner with industry to discuss and address regional industrial customer concerns like fats, oils, ~~and~~ grease, and others.
h. Support source reduction of pollutants (chlorides, PFAS, nitrogen, and others) to urban and rural waters.
i. Partner with local public works and city planners through the development of technical assistance, research, and potential funding to ensure stormwater infrastructure helps protect and enhance receiving waterbody quality.
j. Partner with communities and watershed districts to support low salt practices and obtain grants supporting low salt design.
k. Support research and coordination with Minnesota Pollution Control Agency on centralized water softening to reduce chlorides.

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Plan

l. Consider social, environmental, and economic impacts when planning for and operating under future water quality ~~regulation~~regulations.
m. Acknowledge vulnerable source water protection areas and/or pollution sensitivity of shallow and deep groundwater for targeting implementation programs in local comprehensive plans.
n. Engage in pollutant trading or off-set opportunities of pollution when the cost and long-term benefits are favorable compared to upgrading wastewater treatment.
o. Continue to evolve the Priority Waters List to incorporate new water quality information as it becomes available.
p. Support source reduction efforts to reduce treatment costs at water resource recovery facilities.

Provide

q. Industrial Waste and Pollution Prevention section of the Met Council determines and reviews permit limits for industrial customers.
r. Develop risk-based priorities for accelerated actions for PFAS source reduction, like focused source reduction at water resource recovery facilities using land application programs.
s. Invest in our water resource recovery facilities to meet regulatory standards using appropriate, cost efficient, and currently tested technologies.

8. Water Monitoring, Data, and Assessment Policy

Natural waters and engineered water systems (stormwater, water supply, wastewater, and reuse systems) in the region are proactively monitored, high quality data is collected and shared, and conditions (past, present, and future) are collaboratively assessed to support regional water objectives.

Data is critical to make informed decisions. Among other reasons, data helps us understand surface water and groundwater conditions, see trends and patterns in water quality, identify water vulnerabilities and risks, and support water supply partners in providing water for their population. Many organizations in the region have a role in collecting and understanding this information from the federal and Tribal levels to local government. Coordinating this work can maximize our collective effort to gain information about our waters.

Through monitoring the water quality of the region's lakes, rivers and streams, monitoring wastewater effluent to support public health, maintaining the Priority ~~Water~~Waters List, and other efforts, we value the impact data can have on improving water to support human and environmental health. We will continue to provide and interpret the data to help the region meet its water quality, sustainability, and human health and aquatic life goals.

Desired outcomes:

- The region understands the status of its waters, both quantity and quality.
- Monitoring of the region's surface water, groundwater, and wastewater to assess current conditions, trends, vulnerabilities and risks, and supporting regulatory compliance are coordinated between the Met Council and regional partners.
- Water resource managers, community planners, and regional leaders understand how groundwater and surface water interact and how those interactions impact water sustainability.

- Studies and efforts to measure progress towards achieving sustainable and equitable water goals are supported.
- Data is shared among water organizations and other interested groups.
- The Met Council, in partnership with other organizations, uses its resources to support efforts to provide public and ecosystem health insights to reduce negative health risks, as the need arises.

Actions:

Partner

a. Partner, assist, and support communities, Tribal Nations, and other stakeholders with the monitoring and assessment of regional priority waters and groundwaters for known and emerging contaminants.
b. Work with communities, Tribal Nations, and other stakeholders to provide and improve communication and educational materials on known and emerging contaminants.
c. Collaboratively research, gather, assess, and use data and information on the quality and quantity of water to improve understanding of the connections between surface and groundwaters.
d. Partner with local planners and state agencies to compile and update information about water infrastructure.
e. Partner with public health agencies to remain aware of opportunities to assist in wastewater monitoring and data collection in the interest of public health insights when the need arises, and funding is available.
f. Facilitate collaborative discussions, monitoring, and data sharing throughout the region regarding source water availability, water use, and projected demand.

Plan

~~f.~~g. Explore and identify data sources to support the understanding of water value and use to support the Priority Waters List and its use by our stakeholders.
~~g.~~h. Support community efforts to identify and evaluate the economic and technical feasibility of water supply approaches and best practices that promote water conservation, enhance groundwater recharge, and make the best use of groundwater, surface water, reclaimed wastewater, and stormwater.

Provide

~~h.~~i. Provide monitoring data to our partners through our regional database that contains easily accessible water quality, quantity, and other water-related information collected through the Met Council's monitoring programs.
~~i.~~j. Identify and assess current and long-term groundwater and surface water conditions, uses, use behaviors, community needs, historical trends, drivers (influencers) of change, risks and system limitations, and estimated future conditions.
~~j.~~k. Continue long-range planning and technical studies to understand regional and sub-regional water concerns and to measure progress towards achieving sustainable and equitable water goals.

9. Regional Wastewater Service Area Policy

The Met Council will plan for and provide wastewater service corresponding to designated land uses to protect water for public health, recreation, habitat, and environmental health.

The region needs high-quality, affordable, and sustainable wastewater collection and treatment services to prosper and grow. The Met Council collects and treats wastewater for nearly three million people in the region, as well as for institutions, businesses, and industries. Our water resource recovery facilities and the regional wastewater system serve the urban and suburban core of the region. Rural areas ~~have different service needs,~~ with their own wastewater infrastructure make significant investments to serve their communities. Both the Met Council ~~responsible for providing guidance for the planning~~ and ~~management of wastewater services for~~ those ~~areas.~~ rural communities plan and work to best utilize those investments.

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While supporting efficient development, wastewater service will be extended as necessary to facilitate development in communities if the community's request for regional service is aligned with the regional Wastewater System Plan, the community's comprehensive plan, and comprehensive sewer plan and adheres to other Met Council policies. We know what we do on the land impacts our water resources, so we work closely with our communities to plan for growth that is efficient and utilizes the infrastructure and investments already in place.

It will be important to continue thoughtful partnership and planning for regional wastewater services for both urban and rural areas as the population and industry grows in the region and as we see changes to our environment from climate change.

The **Urban Service Area** has the highest level of investment in regional and local services, including regional wastewater services. These communities include a variety of residential neighborhoods, housing types, and densities, along with a varying mix of commercial and industrial areas. The Urban Service Area is divided into four community designations: Urban, Urban Edge, Suburban, and Suburban Edge.

The **Rural Service Area** represents a range of uses including cultivated farmland, vineyards, hobby farms, gravel mines, woodlands, small towns, scattered and clustered housing, open spaces, and significant expanses of the region's natural resources. Investments in regional services are limited in the Rural Service Area, except for in the regional parks system. The Rural Service Area recognizes the desire for rural and small-town residential choices and protects the vital agricultural lands and natural amenities of the area. The Rural Service Area is divided into four community designations: Agricultural Area, Diversified Rural Area, Rural Residential, and Rural Center.

Desired outcomes:

- Wastewater services are provided to support orderly and economical development and redevelopment of the region.
- Long-range planning of regional wastewater service supports source water protection, equitable water outcomes, water and ecosystem protection, public health, sustainable growth and development, and infrastructure investments that are aligned with community comprehensive plans.

Actions:

Wastewater Service for the Urban Service Area

Partner

a. Utility corridors will be preserved when it is necessary to expand facilities or locate new facilities needed to implement the Wastewater System Plan through early land acquisition and work with communities, Tribal Nations, and other stakeholders.
b. All communities, and any areas within communities, planned to be served and currently served by the regional wastewater system remain a part of the system to fully utilize the regional investments made to provide that service.

Plan

c. Requests for additional wastewater service must be submitted to the Met Council through the comprehensive plan and comprehensive sewer plan process.
d. Connection of private communal treatment systems or properties with subsurface sewage treatment systems to the regional wastewater system must be consistent with the Met Council's minimum sewered residential density requirements for each type of system.
e. The cost of connecting existing private communal treatment systems or subsurface sewage treatment systems to the regional wastewater system will not be borne by the Met Council.
f. Regional wastewater system improvements will be staged, when feasible, to reduce the financial risks associated with inherent uncertainty in growth forecasts.
g. Unsewered areas inside the Long-Term Wastewater Service Area will be preserved through land use guiding for future development that can be sewered economically.
h. Support existing regional sewer investments in developing and redeveloping areas by ensuring the type, size, minimum density requirements, and area of development be consistent with the original design capacity.

Provide

i. Provide wastewater service commensurate with the needs of the growing metro region in a sustainable manner.
j. Provide sufficient capacity in the wastewater system to meet the growth projections and long-term service area needs identified in approved local comprehensive sewer plans.
k. Extend wastewater service to suburban communities if the service area contains at least 1,000 developable acres and guides residential land use densities consistent with Met Council policy.

Wastewater Service for the Rural Service Area

Partner

l. Work with communities, Tribal Nations, and other stakeholders to preserve areas outside the Long-Term Wastewater Service Area for agricultural and rural uses, while protecting significant natural resources, supporting groundwater recharge, protecting source water quality, and allowing limited unsewered development.

Plan

m. Rural wastewater treatment plant acquisition requests and connections to the regional wastewater system outside the regional service area will not be allowed unless the community amends its comprehensive plan and comprehensive sewer plan to be consistent with requirements for regional sewer service. The Met Council may construct capacity to serve the long-term needs of the rural and agricultural planning areas but will not provide service until the comprehensive plan requirements are met.
n. The Met Council will acquire wastewater treatment plants owned by communities, based upon their request through the comprehensive plan and comprehensive sewer plan processes and after soliciting customer input and conducting a public hearing on the request, if the requested acquisition provides cost-effective service, accommodates assigned growth, protects public health and well-being, and currently meets or, with improvements by the community can meet, environmental and regulatory requirements.

Provide

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o. Wastewater service to a Rural Service Area will be considered only when all the following criteria are met:
    - The community accepts the Met Council's growth forecasts, as well as preserves at least 1,000 developed or developable acres for growth through the land use planning authority

of the county or adjacent township(s) or through an orderly annexation agreement or similar mechanism to provide for staged, orderly growth in the surrounding area.
    - The community has a water supply plan approved by the Minnesota Department of Natural Resources.
    - The community has a watershed approved local surface water plan.
    - The community has adequate transportation access.
    - The community lies within the Long-Term Wastewater Service Area.
    - Cost-effective service can be provided and there are feasible and economical options for siting and permitting an expanded wastewater treatment plant or for extending interceptor service.
    - The Met Council has sought customer input, has conducted appropriate financial analysis, and has conducted a public hearing on the community's wastewater service request.

p. Require that, if the most economical and beneficial wastewater service option is to construct a regional interceptor to serve the community, the Met Council will not acquire the community's wastewater treatment plant, and the community will be responsible for decommissioning its treatment plant.

10. Regional Wastewater Operations and Finance Policy

The region's investments and operation of water resource recovery infrastructure and related assets are built, operated, maintained, and rehabilitated in a sustainable, efficient, and economical way, considering current and future challenges. Service fees and charges to operate the system are based on regional cost of services and rules adopted by the Met Council.

The Met Council conducts its regional wastewater system operations as sustainably as possible. Sustainable operations relate not only to wastewater treatment but also to increasing energy efficiency and using renewable energy sources, reducing air pollutant emissions, and reducing, reusing, and recycling solid wastes. Our efforts to harvest energy from wastewater effluent, use biosolids as fertilizer, and use wastewater effluent for secondary uses show our increasing capacity to recover resources that provide additional benefits to our operations and region. Therefore, our wastewater treatment plants have been rebranded as water resource recovery facilities, to reflect that we do more than only treat wastewater.

The regional wastewater system is composed of more than 630 miles of interceptor sewer mains, 229 metering stations, 60 lift stations, and 9 water resource recovery facilities. Environmental Services, on average, invests more than $100 million per year to maintain, replace, and expand wastewater treatment infrastructure. It is critical to maintain and rehabilitate the system in a timely manner to defer the need for costly repairs or premature expansion. User fees cover the entire cost of wastewater operations as well as the cost to maintain, replace, and upgrade the physical infrastructure of the system. The Waste Discharge Rules guide our fee collection structure which is based on what it costs to provide service. Those fees support economical development and help us meet our customer level of service.

Desired outcomes:

- Maintenance and rehabilitation efforts in wastewater infrastructure result in long-term use of existing systems, maximizing our investments, and safeguarding sustainable water.
- Water resource recovery infrastructure investments are cost-effective and support sustainability.
- Additional sewer capacity for communities is timed to be consistent with the Wastewater System Plan and a community's approved comprehensive plan.
- Customer communities pay fees for wastewater services based on the regional cost of service adopted by the Met Council.
- Private wastewater treatment systems remain up to code and adhere to Minnesota Administrative Rules 7080 through 7083, reducing the potential for negative environmental impacts or premature expansion of the regional wastewater system.

Actions:

Partner

a. Work with communities with failing subsurface sewage treatment systems or other private wastewater treatment systems to connect to the regional wastewater system at the community's expense if in conformance with the Met Council's Wastewater System Plan, the community's comprehensive sewer plan, regional land use policy, and other Met Council policies.
b. Provide informational resources to communities and private residents if their subsurface sewage treatment systems and other private wastewater treatment systems fail. Communities that permit the construction and operation of those systems within their communities are responsible for ensuring that these systems are installed, maintained, managed, and regulated consistent with Minnesota Pollution Control Agency rules and Minnesota Administrative Rules 7080 through 7083.
c. Cost-sharing between the Met Council and a local governmental unit may be used when construction of regional wastewater facilities provides additional local benefits for an incremental increase in costs.
d. Advocate on behalf of Rural Area communities to seek technical and financial assistance to maintain continued local wastewater treatment services.
e. Continue efforts to simplify and improve the Sewer Availability Charge (SAC) program and its communication to customers.
f. Partner with Met Council Community Development to update the Publicly Assisted Housing/Conservation SAC fee reduction policy to better reflect publicly subsidized affordable housing developments.
g. Explore with our Community Development division and community stakeholders financial support or other resources to reduce the Publicly Assisted Housing/Conservation SAC fee cost for deeply affordable housing projects.
h. Provide industries with incentives to pretreat wastewater to reduce its ~~strength~~concentration of contaminants or support water reuse opportunities.
i. Advocate for and support partnerships with industries to encourage wastewater reuse for both business growth and environmental benefit.

Plan

j. Preserve Met Council's regional wastewater system assets through effective operation, maintenance, programmatic assessment of condition and capacity, and capital investment.
k. All fees and charges necessary to equitably construct, operate and maintain the regional wastewater system shall be established by the Regional Administrator or Met Council members as described in the Waste Discharge Rules.
l. Seek customer input prior to and give at least 90-days' notice of any material changes in the design of charges.

m. Perform community-based displacement risk assessments when planning Met Council infrastructure improvements.
n. Within Met Council operations, maximize energy efficiency, energy recovery, and pursue renewable energy sources, such as solar power generation, thermal energy recovery, and new technologies as they become proven and economical.
o. Seek opportunities for improved processing, reuse, and energy generation from biosolids processing.
p. Interceptors and related facilities that are no longer needed to serve the regional wastewater system will be reconveyed, abandoned, or sold to the appropriate local governmental unit, pursuant to related statutes. The following conditions are required for the transfer to be considered:
    - 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 ultimately 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.

Provide

q. Implement and enforce the Met Council's Waste Discharge Rules for the regional wastewater system.
r. Septage, biosolids, leachate, and other hauled liquid waste will be accepted at designated sites, provided that the waste can be efficiently and effectively processed and not adversely impact the conveyance and treatment system.
s. Sewer availability charges will be uniform within the urban area based on capacity demand classes of customers and the SAC Procedure Manual. Sewer availability charges for a Rural Center will be based on the reserve capacity and debt service of facilities specific to the Rural Center.
t. Evaluate level of service for all customer types to address needed enhancements or availability of wastewater services like liquid and vactor (sanitary sewer debris collected by vacuum truck) waste disposal sites.

11. Inflow and Infiltration Policy

Inflow and infiltration is systematically addressed in the regional wastewater conveyance system to reclaim and ensure capacity, improve efficiency, and better utilize capital funds.

Inflow and infiltration is stormwater and groundwater that makes its way into sanitary sewer pipes, mixes with sanitary wastewater, and gets unnecessarily treated at water resource recovery facilities. Inflow is clear water that enters the wastewater system through rain leaders, sump pumps, or foundation drains that are illegally connected to sewer lines. The largest amount of inflow occurs during heavy rainstorms. Infiltration is groundwater that seeps into cracked or broken wastewater pipes.

Unaddressed inflow and infiltration can cause public and environmental health concerns, mainly through sewage backups resulting from limited system capacity. It can be costly to communities and utility rate payers through both increases in billed volume of water treated at the water resource recovery facility and additional investments to expand the system to accommodate capacity.

Inflow and infiltration from private property has been an under-investigated and under-supported area of mitigation. Mitigation efforts have not been as robust primarily due to a lack of dedicated and reliable funding sources to incentivize this work. Opportunities abound to address inequities in historically marginalized and overburdened communities due to the high costs of private inflow and infiltration remediation and risks of displacement when those concerns are not addressed.

Environmental Services continually works to maintain the capacity of the conveyance and treatment system to prevent unnecessary, costly expansions. Efforts like private and public inflow and infiltration mitigation, regular assessments and maintenance of wastewater infrastructure, and support of water conservation efforts are all successful ways to maximize the current conveyance and treatment capacity and reduce premature costs.

Climate change has the potential to impact these efforts to keep clear water out of the wastewater conveyance and treatment system. Changing precipitation patterns may stress the regional conveyance system and could lead to increasing issues with inflow and infiltration. Rising or fluctuating groundwater levels could inundate pipes that were originally above the groundwater table and potentially lead to interactions between inflow and infiltration and our groundwater resources. With the uncertainty of climate change impacts, it is critical to continue addressing inflow and infiltration to reclaim capacity in the conveyance and treatment system.

Desired outcomes:

- Ongoing inflow and infiltration mitigation work results in reclaimed capacity in the wastewater conveyance and treatment system.
- Capacity enhancements are not made to accommodate excess inflow and infiltration.
- Municipalities are supported in both public and private efforts to reduce inflow and infiltration.
- Funding is consistent and reliable for inflow and infiltration mitigation efforts.

Actions:

Partner

a. In partnership with communities, continue developing inflow and infiltration goals for all communities served by the regional wastewater system.
b. Partner with the state to make funds available for inflow and infiltration mitigation and promote statutes, rules, and regulations to encourage inflow and infiltration mitigation.
c. Continue to support, advocate, and coordinate with Metro Cities for state bond funding for municipal public system inflow and infiltration grants.
d. Continue to advocate and seek funding for communities working to reduce inflow and infiltration from private property sources.
e. Partner with our Housing and Livable Communities division to develop criteria to prioritize private property inflow and infiltration grant funding to applicants that show a dedicated effort to prioritize low-income and historically overburdened households.

Plan

f. Limit expansion of wastewater service within communities where excessive inflow and infiltration jeopardizes the Met Council's ability to convey wastewater without an overflow or backup occurring or limits the capacity in the system to the point where the Met Council can no

longer provide additional wastewater services. The Met Council will work with those communities on a case-by-case basis, based on the applicable regulatory requirements.

g. Coordinate private sewer lateral rehabilitation with other programs, projects, or construction that may provide an opportunity to address multiple infrastructure needs, for example, lead service removal programs or street improvement programs.

Provide

h. Met Council facilities and interceptors will be maintained and rehabilitated to minimize inflow and infiltration.

i. Institute a demand charge for those communities that have not met their inflow and infiltration goal(s), if the community has not been implementing an effective inflow and infiltration reduction program as determined by the Met Council, or if regulations and/or regulatory permits require Met Council action to ensure regulatory compliance.

j. Use the demand charge to cover the cost of wastewater storage facilities and/or other improvements necessary to avoid overloading Met Council conveyance and treatment facilities and for use of capacity beyond the allowable amount of inflow and infiltration.

12. Water Sector Workforce Development Policy

Ensure a diverse, stable, and well-equipped water sector workforce and talent pipeline to plan and manage water resources and maintain safe, efficient, and reliable water operations through addressing challenges in recruiting, training, and retaining employees.

Past water sector workforce recruitment and retention strategies are no longer effective. New strategies must include early awareness of water sector careers (K-12 outreach), low-barrier entry (internships, apprenticeships, changing hiring processes), inclusive workplaces with professional development opportunities, and proactive knowledge transfer mechanisms supporting succession planning.

Tailoring best practices within each unique workplace is key, as internal cultures, variations in position classification, and labor union contracts make it so that a one-size-fits-most approach is not possible. A comprehensive policy framework that addresses the root causes of inequity and promotes diversity, equity, and inclusion throughout the water workforce should encompass targeted recruitment strategies, inclusive hiring practices, equitable access to training and development opportunities, culturally competent leadership, and supportive workplace policies that foster a culture of belonging for all employees. By proactively addressing these challenges, the water sector can build a more resilient, innovative, and sustainable workforce and future talent pipeline that reflects the diversity of the communities it serves and ensures equitable access to clean and safe water for all while furthering the prosperity of the region.

Desired outcomes:

- A resilient and technologically competent water sector workforce.
- The water sector talent pipeline and workforce reflect the racial and gender identity diversity of the communities served.
- Water sector careers that pay a livable wage with clear paths for advancement.
- A regional portfolio of talent development opportunities and experiences that support performance excellence, emerging challenges, and opportunities in the industry.
- Cross-sector collaboration and partnerships that support workforce sustainability and development.

Actions:

PARTNER

a. Collaborate across the region to build awareness of water sector careers as one of the key elements within a public awareness campaign to maintaining clean water for future generations.
b. Collaborate with educational providers to develop K-12 student and teacher curriculum and support interest and skills needed for water sector careers.
c. Develop recruiting partnerships with educational institutions, labor unions, and community groups to increase visibility of water sector careers for historically marginalized communities.
d. Partner with professional water organizations, labor unions, educational institutions, and workforce development organizations to create water sector career skill development opportunities and strengthen the water sector workforce talent pipeline.

PLAN

e. Recognize the needs of the changing workforce and make the applicable, evidence-based accommodations to the workplace.
f. Map existing workforce skills, identify gaps, and develop strategies to fill gaps.
g. Develop and activate workforce succession plans and tools that account for current and future staffing levels, knowledge transfer and cross training, and talent readiness.

PROVIDE

h. Host a paid internship program in which students (high school and post-secondary) can apply their existing knowledge and skills while building new ones in the water sector.
i. Host registered apprenticeship programs to alleviate barriers of entry to water sector careers.
j. Expand on-the-job training and professional development opportunities within Environmental Services to up-skill the existing water sector workforce to meet changing demands and utilize emerging technologies.
k. Offer technical assistance to water sector employers to develop, implement, and expand recruitment, development, and retention approaches and programs.
l. Seek financial resources and partnerships to provide inter-organizational trainings focused on subregional challenges, to share lessons learned and build strong working relationships.

Water Policy Plan Amendment Process

Natural and built environments can change quickly, with associated effects on water and water utilities, particularly as ~~we consider~~the region considers the rapidly evolving and highly variable conditions associated with climate change. Likewise, as new research and regulatory conditions dictate, new technologies are developed, and new understanding is gained, water planners, managers, and service providers need to adapt and incorporate new knowledge into their work and operations. Regional plans and policies must also be able to adapt to new conditions and learning. Therefore, the Met Council has a process in place to either amend or add policies, as needed. The Met Council will engage, consult, and collaborate with Tribal governments, federal and state agencies, local government units, watershed organizations, water utilities and service providers, and residents of the metro region in the amendment process.

The Met Council will amend the 2050 Water Policy Plan, including the Wastewater System Plan and the Metro Area Water Supply Plan, only for a substantial revision. A substantial revision is defined by the Met Council as (1) a proposed revision that is intended to or could have the effect of changing the direction or intent of adopted Met Council policy, (2) addition or deletion of a policy, or (3) addition or deletion of any Wastewater System Plan component or a Metro Area Water Supply Plan action plan element.

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The policy amendment process is as follows:

1. To begin the amendment process, there must be some interest or issue in current policy that may warrant an amendment. An issue or gap within the current adopted policies must first be identified, with the associated water sustainability issue defined.
2. Once a policy issue or gap is identified, a task force may be assembled.
    a. The Met Council should authorize the establishment of a task force and charge the task force to investigate the question at hand. The task force should consist of a diverse set of stakeholders (community size, geographic coverage, history of interest or experience in the policy area, ~~and similar).~~etc.).
    b. For water supply-related elements, the existing Metro Area Water Supply Advisory Committee (MAWSAC) and their Technical Advisory Committee (TAC) may fill this role.
    c. If the task force makes recommendations or suggests actions, those are to be presented to the Environment Committee for recommendation to be sent to the full Met Council for approval to be released for public hearing.
3. If policy changes are approved or adopted by the Met Council, the Met Council will authorize a public hearing regarding the proposed changes.
4. After a public hearing, the comments are brought to the Environment Committee and MAWSAC in the case of the Metro Area Water Supply Plan for review. The Environment Committee will review comments and any changes and send the revised plan section to the full Met Council for approval.
5. Next, the Met Council reviews the policy recommendations and public comment summary.
6. Assuming no adverse public comments and recommend approval of language by the Environment Committee and by MAWSAC in the case of the Metro Area Water Supply Plan, the Met Council can adopt the changes to the policy in the Water Policy Plan.

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5 Definitions

Built environment: The developed landscapes that include engineered water systems (stormwater conveyance, water supply utilities, subsurface sewage treatment systems, and wastewater systems and utilities).

Contaminants of Emerging Concern (CECs): Substances and microorganisms, including manufactured or naturally occurring physical, chemical, biological, radiological, or nuclear materials, which are known or anticipated in the environment, that may pose newly identified or re-emerging risks to human health, aquatic life, or the environment.

Drinking Water Supply Management Areas (DWSMAs): Areas containing the wellhead protection area but outlined by clear boundaries, like roads or property lines. The DWSMA is managed in a wellhead protection plan, usually by a city.

Ecosystem services: Ecosystem services are the benefits that nature provides to human well-being: clean air and water, protection from natural disasters, fisheries, crop pollination and control of pests and disease, and outdoor places for recreation, solitude, and renewal.

Equity (defined by the Met Council): Historically excluded communities – especially Black communities, Indigenous communities, and communities of color – have measurable improved outcomes through an intentional and consistent practice of adapting policies, systems, services, and spending so that they contribute to the repair of both historic and ongoing injustice.

Inflow and infiltration: Stormwater and groundwater that makes its way into sanitary sewer pipes, mixes with sanitary wastewater, and gets unnecessarily treated at water resource recovery facilities. Inflow is clear water that enters the wastewater system through rain leaders, sump pumps, or foundation drains that are illegally connected to sewer lines. The largest amount of inflow occurs during heavy rainstorms. Infiltration is groundwater that seeps into cracked or broken wastewater pipes.

Local: Local units of government are cities, townships, counties, and special districts such as lake improvement, special service, soil and water conservation, watershed, school, regional development and commissions.

Local control: The authority of local governments to make decisions and regulations to manage their own affairs. For example, water supply is an area of local control driven by local needs and decisions.

Local controls: Policies, ordinances, programs, and incentives to encourage desired behaviors. Examples are stormwater infiltration guidance, water efficiency grants, and others.

Reclaimed water: Wastewater that has been treated to a higher standard for beneficial use.

Recreational water: Waters that are used for swimming, fishing, boating, and other activities for enjoyment, rest, and relaxation.

Regional benefit (wastewater): If an action or decision related to the regional wastewater system supports regional growth, benefits more than one community, is cost effective, and enhances knowledge and experience that can be used to further our mission and goals

Resource recovery: The process of recovering materials or energy from a potential waste stream and recycling them for a second use or into the environment. Some methods include reclaimed water for reuse or wastewater treatment producing clean water.

~~**Source Water:** The bodies of water that provide water to public water supplies and privately-owned wells, including groundwater, lakes, and rivers.~~

Rural Service Area: Communities in the region that have a range of uses including cultivated farmland, vineyards, hobby farms, gravel mines, woodlands, small towns, scattered and clustered housing, open spaces, and significant expanses of the region's natural resources. Investments in regional services are limited in the Rural Service Area, except for in the regional parks system. The Rural Service Area recognizes the desire for rural and small-town residential choices and protects the vital agricultural lands and natural amenities of the area. The Rural Service Area is divided into four community designations: Agricultural Area, Diversified Rural Area, Rural Residential, and Rural Center.

Source Water: The bodies of water that provide water to public water supplies and privately-owned wells, including groundwater, lakes, and rivers.

Urban Service Area: Communities in the region with the highest level of investment in regional and local services, including regional wastewater services. These communities include a variety of residential neighborhoods, housing types, and densities, along with a varying mix of commercial and industrial areas. The Urban Service Area is divided into four community designations: Urban, Urban Edge, Suburban, and Suburban Edge.

Wastewater Reuse: The practice of treating wastewater from a water resource recovery facility or wastewater treatment plant to a higher standard for beneficial use before releasing it back into the water cycle.

Water Sustainability: The responsible management of water resources (ground and surface water) to not harm ecosystems, degrade water quality, and to ensure their availability for current and future generations while ensuring a balance between economic, environmental, and social well-being.

Water Supply Sustainability: Water use is sustainable when the use does not harm ecosystems, degrade water quality and quantity, or compromise the ability of future generations to meet their own needs. The region's water supply may be considered sustainable when:

- Water use does not exceed the estimated limits of available sources, taking into account:
  - Impacts to aquifer levels
  - Impacts to surface waters, including diversions of groundwater that affect them, to maintain flows and water levels
  - Impacts to groundwater flow directions in areas where groundwater contamination has, or may, result in risks to public health
- Planned land use and related water demand is consistent with the original long-term design capacity for water supply infrastructure, when that design capacity is based on sustainable sources
- Water users are efficient in their day-to-day use and are prepared to forego nonessential water use during emergencies
- Risk to infrastructure and public health is managed through ongoing assessment and investment

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Water Benefits: The range of useful and advantageous outcomes experienced by nature, society, communities, and individuals related to water. Benefits may be social, cultural, economic, and health related. Benefits may be experienced over small or broad areas, over short or longer periods of time, and by single or multiple generations.

Water Conservation: Any beneficial reduction in water losses, waste, or use.

Water Resource Recovery Facility: Updated term for wastewater treatment plant.

Water Services: The breadth of benefits provided by clean and abundant water in the natural and built environment; including those derived from water service providers like water supply or wastewater utilities. Benefits may be felt directly or indirectly by society and fall into the following categories: Regulation, Provision, Support, and Cultural.

6 Appendices

Appendix A – Comprehensive plan submittal requirements

~~xii.~~ Local Surface Water Management Plan Elements

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~~1.~~ *Background*

Local water management plans are crucial in helping the region meet the challenge of cost-effective protection and management of water quality and quantity.

In 1995, the Metropolitan Land Planning Act was amended to require that each city and township's comprehensive plan include a local water management plan. Local water management plans need to be consistent with the requirements in Minnesota Statute 103B.235, the Metropolitan Land Planning Act, and with Minnesota Rules Part 8410.0160.

In general, local water plans need to include a summary of the priorities and problems in the community; structural, nonstructural and programmatic actions to take to address the priorities and problems; and clearly identified funding mechanisms to fix the problems.

Local water management plans are reviewed by the Council as part of the local comprehensive planning process at that same time as they are reviewed by the appropriate watershed organization(s). Council staff send comments to the appropriate watersheds for their use in approval of the plan. Once approved the city or township needs to formally adopt the final plan and send a copy of the final plan to the Council.

If a community does not have a current local water management plan as part of its 2028 comprehensive plan update, the comprehensive plan will be found incomplete for review. If a community has a plan that does not meet the requirements for local water management plans, plan the Council would likely find the plan to be inconsistent with Council policy.

~~2.~~ *Elements*

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Required elements of local water management plans are identified in Minnesota Rules Chapter 8410 Part 8410.061 and in Minnesota Statute 103B.235.

The following is a list of those requirements:

1. An executive summary that summarizes the highlights of the local water plan.
2. A summary of the appropriate water resource management-related agreements that have Local been entered into by the local community.
3. A description of the existing and proposed physical environment and land use. Data may be incorporated by reference for other required elements of this section as allowed by the WMO. The community should be aware that not all WMO plans will contain the level of detail needed for the community and, in those instances, the community will need to provide additional information. In addition, the following must be defined in the plan:
    a. Drainage areas ~~within the jurisdiction.~~
    b. Volumes, rates, and paths of stormwater runoff (Runoff rates are recommended for a 24-hour precipitation event with a return frequency of 1 or 2 years. Communities with known flooding issues may want to require rate control for storms with other return frequencies such as 10, 25 or 100-year events~~).~~.)
    c. An assessment of existing or potential water resource-related problems. At a minimum, the plan should include: A prioritized assessment of the problems related to water quality and quantity in the community.

4. A local implementation program/plan that includes prioritized nonstructural, programmatic and structural solutions to priority problems identified as part of the assessment completed for number 4, above. Local official controls must be enacted within six months of the approval of the local water plan. The program/plan must:
    - ~~5.~~a. Include areas and elevations for stormwater storage adequate to meet performance standards or official controls established in the WMO plan(s)
    - ~~a.~~b. Define water quality protection methods adequate to meet performance standards or official controls. At a minimum, the plan should include:
        - ~~6.~~i. Information on the types of best management practices to be used to improve stormwater quality and quantity. (A five-year establishment period is recommended for native plantings and bioengineering practices).
        - ~~i.~~ii. The maintenance schedule for the best management practices. (The maintenance schedule in plans submitted by regulated Municipal Separate Storm Sewer System (MSA) communities must be consistent with BMP inspection and maintenance requirements of the MS4 Permit)
    - ~~b.~~c. Clearly define the responsibilities of the community from that of the WMO(s) for carrying out the implementation components
    - ~~c.~~d. Describe official controls and any changes to official controls. At a minimum, the plan should include:
        i. An erosion and sediment control ordinance consistent with NPDES Construction Stormwater permit requirements and other applicable state requirements
        ii. Identify ways to control runoff rates so that land-altering activities do not increase peak stormwater flow from the site for a 24-hour precipitation event with a return frequency of 1 or 2 years. Communities with known flooding issues may want to require rate control for storms with other return frequencies (10-year, 25-year or 100-year)
    - ~~d.~~e. Include a table that briefly describes each component of the implementation program and clearly details the schedule, estimated cost, and funding sources for each component including annual budget totals~~.~~
    - ~~e.~~f. Include a table for a capital improvement program that sets forth by year, details of each contemplated capital improvement that includes the schedule, estimated cost, and funding source~~.~~
    - ~~f.~~g. A section titled "Amendments to Plan" that establishes the process by which amendments may be made.

The following is a list of suggested plan elements in addition to those requirements:

a. A list of the regional priority waters within their jurisdiction. If the water is monitored, please provide information about who is responsible, the monitoring frequency and analytes of interest.

b. A list of any impaired waters within their jurisdiction as shown on the current Minnesota Pollution Control Agency (MPCA) 303d Impaired Waters list.

- ~~b.~~c. Identify and map source water protection areas and their corresponding vulnerabilities in the community.
- ~~c.~~d. If a Watershed Restoration and Protection Strategy (WRAPS) or TMDL study has been completed for the community, the community should include implementation strategies, including funding mechanisms, that will allow the community to carry out the recommendations and requirements from the WRAPS or TMDL specific to that community. More information on the MPCA's WRAPS and TMDL programs can be found on the MPCA's web site at ***www.pca.state.mn.us***.

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i. Communities with designated trout streams should identify actions in their plan to address the thermal pollution effects from development.
ii. Communities with special waters, such as outstanding resource value waters, need to meet state requirements for development near these waters.

~~g.~~h. Consider use of NOAA Atlas 14, Volume 8 (Precipitation Frequency Atlas of the United States) or the most current version available to calculate precipitation amounts and stormwater runoff rates. (MPCA uses NOAA Atlas 14 in calculations to determine whether the 1" standard has been met.)

~~h.~~i. Consider adoption of the MPCA Minimal Impact Design Standards (MIDS) performance goals and flexible treatment options.

~~i.~~j. For communities that do not adopt MIDS, the plan should use stormwater practices that promote infiltration/filtration and decrease impervious areas, such as with better site design and integrated stormwater management, where practical. (Communities must meet requirements of the MS4 permit if they are regulated. MS4 permit puts preference on green infrastructure, including infiltration. Construction permit will govern this either way, and also requires use of green infrastructure when possible.)

~~j.~~k. A review of the previous plan's implementation table tasks. If they were not achieved, please evaluate the obstacles to success (lack of funding, conditions changed, etc.). This can help identify future directions and resource needs.

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~~xiii.~~ Water Supply elements of comprehensive plans and local water supply plans

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~~1.~~ *Background*

Minnesota Statutes 473.859 describes water supply-related content to be contained in local comprehensive plans. The comprehensive plan, including the local water supply plan if required, must be consistent with the Metropolitan Land Planning Act and Met Council's 2050 policy and system plans, and the local water supply plan must be consistent with requirements of Minnesota Statute 103G.291.

In general, comprehensive plans need to include a description of water use and water supply concerns in the community and an implementation program including local controls addressing water supply. Communities with municipal community public water supply systems must include a local water supply plan as part of the comprehensive plan.

Local water supply plans are reviewed by the Council as part of the local comprehensive plan review process defined in Minnesota Statutes 473.175, subdivision 1, after submitting them to adjacent and affected jurisdictions including counties that have adopted groundwater plans, and prior to their approval by the Minnesota Department of Natural Resources and adoption by the city or township.

If a community with a municipal community water supply system does not have a current local water supply plan as part of its 2028 comprehensive plan update, the comprehensive plan will be found incomplete for review. If a community with a municipal community water supply system a has a plan that does not meet the requirements for local water supply plans, the Council will likely find the plan to be inconsistent with Council policy.

~~2.~~ *Elements*

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Required water supply-related elements of comprehensive plans are identified in Minnesota Statutes 473.859 and Minnesota Statute 103G.291 and generally include:

~~a.~~ Requirements for all communities

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- ~~Designate~~Designating the existing and proposed location, intensity and extent of use of land ~~and water~~ (including ~~lakes, wetlands, rivers, streams, natural drainage courses, and adjoining~~ land areas that affect water natural resources) and water for agricultural, residential, commercial, industrial and other public and private purposes. ~~If the community has a municipal public community water supply system, information about municipal public community uses may be included in the local water supply plan described below.~~
- ~~Include an~~An implementation program with a description of official controls addressing water supply and a schedule for the preparation, adoption, and administration of such controls. ~~If the community has a municipal community public water supply system, this information may be included in the local water supply plan described below.~~

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- A local water supply plan, if the community is served by a municipal community public water supply system.

The local water supply plan fulfills the requirements of the first two bullets regarding municipal community water use.

~~b.~~ Requirements for communities with a municipal community public water supply system

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- A local water supply plan, which addresses the requirements in Minnesota Statute 103G.291, subdivision 3 and Minnesota Statutes 473.859, subdivision 3, including:
  - Projected demands

- Adequacy of the water supply system and planned improvements
- Existing and future water sources
- Natural resource impacts or limitations
- Emergency preparedness, ideally aligned with current Minnesota rules 4720.5280
- Water conservation
- Supply and demand reduction measures
- Allocation priorities that are consistent with Minnesota statutes section 103G.261
- Existing and future public water supply facilities':
  - Character
  - Location
  - Timing
  - Sequence
  - Function
  - Use
  - Capacity
  - Capital improvement plan

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~~c.~~ **The following is a list of strongly suggested plan elements for all communities, in addition to those requirements:**

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- Identify how much water is currently and projected to be used in the community in 2030, 2040, and 2050 for each of the following uses: agricultural, residential, commercial, industrial, and other public and private uses. Water supply managers and planning/zoning/community development staff should collaboratively identify future drinking water needs and availability. New drinking water source locations in areas that are less susceptible to contaminant threats should be prioritized.
- Identify parts of the community supplied by privately-owned wells and nonmunicipal public water supply systems in the community and describe these areas in the context of pollution sensitivity. Particular attention should be given to the 200-foot radius around public water supply wells, which is called the Inner Wellhead Management Zone.
- Identify the community's and any neighbors' Drinking Water Supply Management Areas (DWSMAs) in or adjacent to the community. This includes DWSMAs for nonmunicipal systems such as mobile home parks, as well.
- Describe the extent, vulnerability, and potential contaminants associated with current and planned land uses in DWMSAs. DWSMA maps should be included, including surface water drinking water supply management areas (DWSMA-SWs).
- Include a summary of stakeholder-identified land use issues, problems, and opportunities related to the aquifer(s) serving public water supply wells, the well water, and drinking water supply management areas in the community.
- Describe official controls and any changes to official controls that reduce vulnerability and improve community response capabilities, such as but not limited to:
  - Efficient water use
  - Emergency response
  - Protecting privately-owned wells and/or the conditions under which new privately-owned wells would be allowed.
  - Land use practices to protect drinking water and limit pathways that shortcut the natural geologic protection – Ideally, land uses and zoning which have significant contamination

threats should not be co-located with high vulnerability DWSMAs. Land use decisions in areas along the Mississippi River upstream of the Minneapolis and St. Paul surface water intakes should consider impacts to the quality of the Mississippi River.
- Other water supply practices to address issues, problems, and opportunities identified by local stakeholders

Met Council shall prepare guidelines for the preparation of the water supply plans, per Minnesota Statutes 473.859.

~~xiv.~~ Comprehensive Sewer Plan Update Review Requirements

~~1.~~ *Background*

Local governments are required to submit both a wastewater plan element to their comprehensive plan as well as a comprehensive sewer plan describing service needs from the Met Council.

Before any local government unit in the metro area can proceed with a sewer extension, the comprehensive sewer plan must be consistent with the Met Council's Wastewater System Plan and be approved by the Met Council.

The following comprehensive sewer plan content checklist covers information that will be used by the Met Council to:

1. Evaluate long term regional system capacity needs and program future capital improvements to accommodate community growth,
2. Determine intercommunity sanitary sewer flow allocation adjustments by the Met Council where appropriate,
3. Identify potential or planned sanitary sewer capacity projects at locations that connect to the regional system,
4. Assist the Met Council in the development of hydraulic models for long term capacity needs evaluation,
5. Evaluate the continued progress and effectiveness of local I/I mitigation efforts and provide information for the Met Council to advocate for continued financial assistance programs (grants/loans) for work on both the public and private property portions of the wastewater collection system,
6. Determine that the community's treatment system, or a private treatment system, either has adequate capacity to serve the forecasted growth, or has programmed improvements to add capacity to accommodate the forecasted growth,
7. Ensure that the community's treatment system, or private treatment system, is compliant with applicable permits, and to verify that those facilities are being maintained and operated appropriately and ensure there is sufficient capacity to accommodate the service level needs through the 20-year planning horizon,
8. Conduct trace analyses. Trace analysis is used in the event of local hazardous spill for emergency response purposes. Data is kept confidential and secure.

~~2.~~ *Elements*

~~a.~~ GIS Requirements – All Areas

1. Provide the following GIS sewer system data with the comprehensive sewer plan submittal (GIS shape files or geodatabase feature classes):
    a. Local sanitary lines.
        i. Include pipe size, pipe material, year built, conveyance method (gravity and forcemain).
    b. Local sanitary structures (e.g. manholes, lift stations, etc~~.).~~).
    c. Existing connections points to the MCES collection system.
    d. Future connection points to the MCES collection system (for new growth).
    e. Local sewershed service areas or districts by connection point.
    f. Intercommunity connection points.
    g. Proposed changes in government boundaries based on orderly annexation agreements.
    h. Location of all private and public wastewater treatment plants in the community.

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i. Individual subsurface sewage treatment systems (as mentioned in the Requirements for Areas Served by Subsurface Sewage Treatment Systems section)

~~b.~~ **Requirements for Areas Served by the Regional System (Urban Area)**

1. Table that details adopted community sewered forecasts:
   a. 10-year increments to 2050
      i. Households
      ii. Employment
   b. Forecasts shall be broken down by areas served by the Metropolitan Disposal System, locally owned and operated wastewater treatment systems, and communal and subsurface sewage treatment systems.
2. Copy of intercommunity service agreements entered into with an adjoining community, or a description of the intercommunity service agreements that confirms the Met Council's understanding that one community reimburse the other community for the municipal wastewater charges that it will incur by receiving flow from the adjacent community. If the Met Council is responsible for adjusting flow for each community for the purpose of calculating the Municipal Wastewater Charge, note that in the description of the intercommunity agreement. Include a map of service areas covered by the agreements.
3. Table or tables that provide the following local system information:
   a. Capacity and design flows for existing trunk sewers and lift stations.
      i. For local sanitary sewer lines 12" and larger that connect to the Met Council system, provide the 2050 design flow and pipe capacity for each connecting trunk sewer and lift station. Include the percentage of total capacity of each pipe that will be used by 2050.
   b. Assignment of 2050 growth forecasts by Met Council interceptor facility.
      i. Household and employment forecasts.
4. For new trunk sewer systems that require connection to the Metropolitan Disposal System:
   a. A table that details the proposed time schedule for the construction of the new trunk sewer system.
5. Define the community's goals, policies, and strategies for preventing and reducing excessive inflow and infiltration (I/I) in the local municipal (city) and private (private property) sanitary sewer systems.
   a. Include a summary of activities or programs intended to mitigate I/I from both public and private property sources.
6. Describe the requirements and standards in the community for minimizing I/I.
   a. Include a copy of the local ordinance or resolution that prohibits discharge from sump pumps, foundation drains, and/or rain leaders to the sanitary sewer system.
   b. Include a copy of the local ordinance or resolution requiring the disconnection of existing foundation drains, sump pumps, and roof leaders from the sanitary sewer system.
7. Describe the sources, extent, and significance of existing I/I in both the municipal and private sewer systems.
   a. Include a description of the existing sources of I/I in the municipal and private sewer infrastructure.
   b. Include a summary of the extent of the systems that contribute to I/I such as locations, quantities of piping or maintenance holes, quantity of service laterals, or other measures. If an analysis has not been completed, include a schedule and scope of future system analysis.

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c. Include a breakdown of residential housing stock age within the community into pre- and post-1970 era, and what percentage of pre-1970 era private services have been evaluated for I/I susceptibility and repair.
d. Include the measured or estimated amount of clearwater flow generated from the public municipal and private sewer systems.
e. Include a cost summary for remediating the I/I sources identified in the community. If previous I/I mitigation work has occurred in the community, include a summary of flow reductions and investments completed. If costs for mitigating I/I have not been analyzed, include the anticipated wastewater service rates or other costs attributed to I/I.

8. Describe the implementation plan for preventing and eliminating excessive I/I from entering both the municipal and private sewer systems.
    a. Include the strategy for implementing projects, activities, or programs planned to mitigate excessive I/I from entering the municipal and private sewer systems.
    b. Include a list of priorities for I/I mitigation projects based on flow reduction, budget, schedule, or other criteria.
    c. Include a schedule and the related financial mechanisms planned or needed to implement the I/I mitigation strategy.
9. Provide current community SSTS ordinances or description of community's SSTS management program compliant with current Minnesota Pollution Control Agency Rules Chapters 7080-7083.

~~c.~~ **Requirements for Areas Served by Local Wastewater Treatment Systems (Rural Centralized System)**

1. Community sewered forecasts:
    a. 10-year increments to 2050
        i. Households
        ii. Employment
2. Capacity of and existing flows to public treatment systems.
3. Map or maps showing the following information:
    a. Local wastewater service areas through 2050.
    b. Staging plan, if available.
    c. Proposed changes in governmental boundaries affecting the community, including any areas designated for orderly annexation.
4. Proposed timing and financing of any expanded or new wastewater treatment facilities.
5. Define the community's goals, policies, and strategies for preventing and reducing excessive inflow and infiltration (I/I) in the local sanitary sewer system, including a discussion of sump pumps and drain tile connected to the local sewer system.
6. A copy of facility planning reports for the upgrading of the local wastewater treatment plant.
7. Copies of the associated National Pollutant Discharge Elimination System (NPDES) or State Disposal System (SDS) permits.
8. Provide current community SSTS ordinance or description of community's SSTS management program compliant with current Minnesota Pollution Control Agency Rules Chapters 7080-7083.

~~d.~~ **Requirements for Areas Served by Private Communal Treatment Systems**

1. Table that details adopted community forecasts served by each private communal system:
    a. 10-year increments to 2050
        i. Households

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ii. Employment
2. Describe the management program for private communal treatment systems.
3. Copies of the associated National Pollutant Discharge Elimination System (NPDES) or State Disposal System (SDS) permits.
4. Map or maps showing the following information:
    a. Locations of private communal treatment systems including:
        i. Treatment facilities
        ii. Subsurface systems
    b. Current and projected service areas for private communal treatment systems.
5. Conditions under which additional private communal treatment systems would be allowed:
    a. Allowable land uses and residential densities.
    b. Installation requirements.
    c. Management requirements.
    d. Local government responsibilities.

~~e.~~ **Requirements for Areas Served by Subsurface Sewage Treatment Systems (SSTS)**

1. Indicate in the comprehensive sewer plan the number of individual SSTSs in operation serving residences and businesses in the community.
2. Map identifying location of individual SSTSs. Location of known nonconforming systems or known problems should be identified. A list of addresses for SSTSs is acceptable where mapping is unavailable.
3. Describe the conditions under which new individual SSTSs would be allowed.
4. Provide description of community's SSTS management program compliant with current Minnesota Pollution Control Agency Rules Chapters 7080-7083.
5. Provide current community SSTS ordinance.

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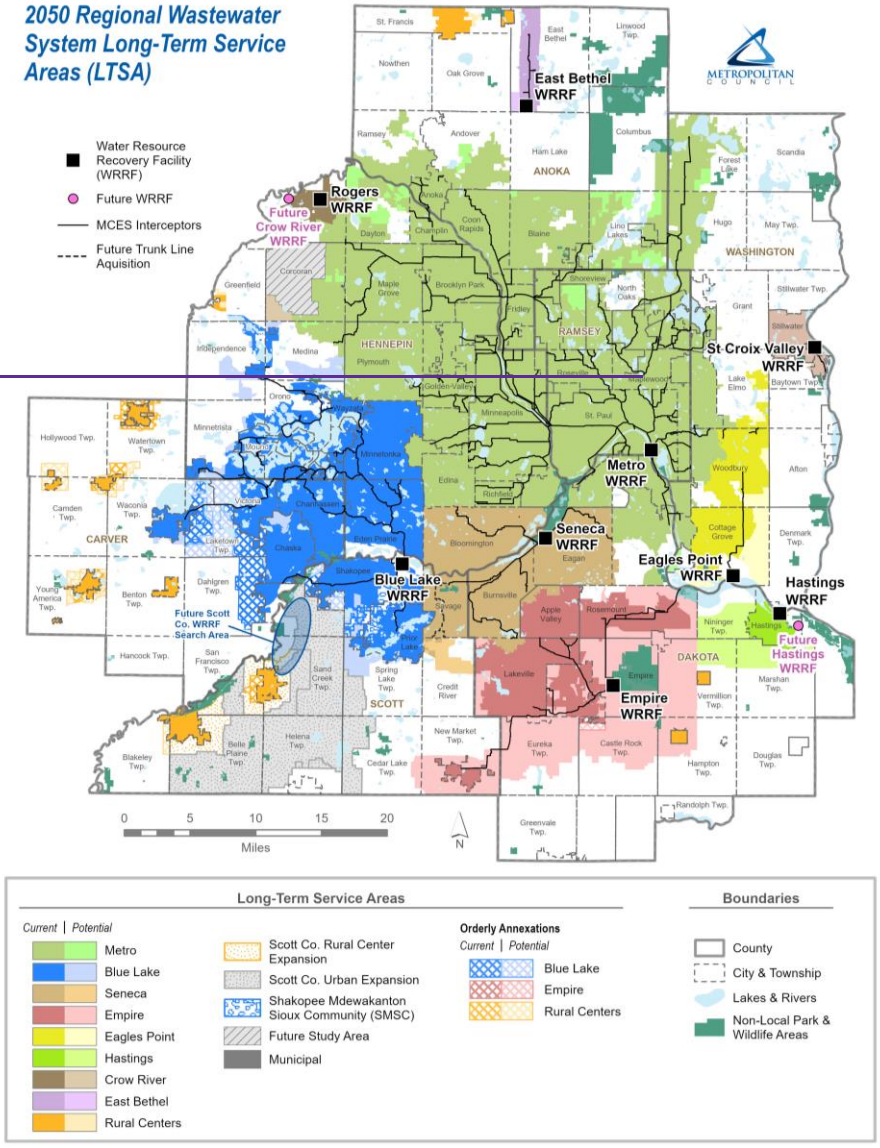
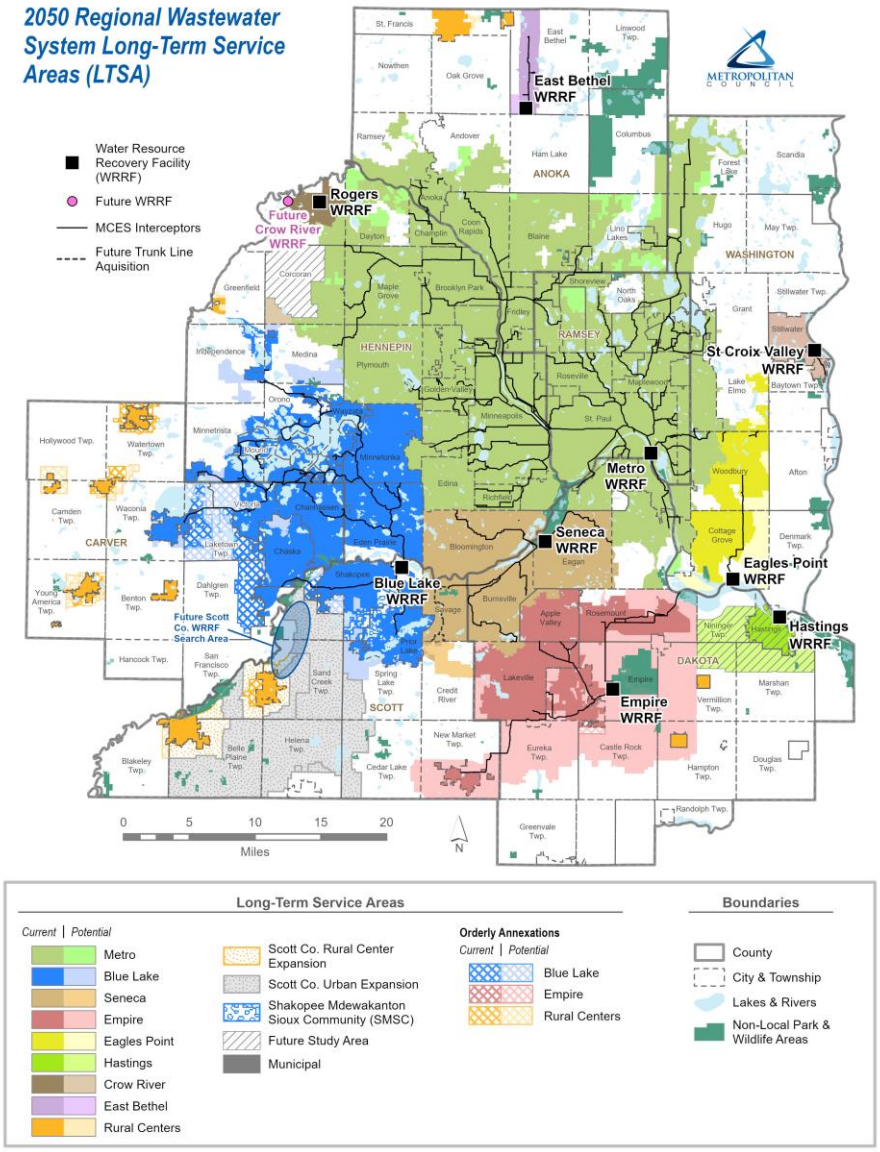
Appendix B – Long-Term Service Area Map



~~Figure 6.1: Long-term service area map for the Regional Wastewater System.~~


2050 Regional Wastewater System Long-Term Service Areas (LTSA)
Water Resource Recovery Facility (WRRF)
Future WRRF
MCES Interceptors
Future Trunk Line Aquisition
East Bethel WRRF
Rogers WRRF
Future Crow River WRRF
St Croix Valley WRRF
Metro WRRF
Seneca WRRF
Eagles Point WRRF
Blue Lake WRRF
Hastings WRRF
Empire WRRF
Future Scott Co. WRRF Search Area
ANOKA
WASHINGTON
RAMSEY
HENNEPIN
CARVER
SCOTT
DAKOTA
0 5 10 15 20
Miles
N
Long-Term Service Areas
Current | Potential
Metro
Blue Lake
Seneca
Empire
Eagles Point
Hastings
Crow River
East Bethel
Rural Centers
Scott Co. Rural Center Expansion
Scott Co. Urban Expansion
Shakopee Mdewakanton Sioux Community (SMSC)
Future Study Area
Municipal
Orderly Annexations
Current | Potential
Blue Lake
Empire
Rural Centers
Boundaries
County
City & Township
Lakes & Rivers
Non-Local Park & Wildlife Areas

Appendix C - Environmental Services Customer Level of Service

FINANCIAL

CHARGES & FEES
Charges and fees should be predictable, justifiable, and provide good value for the region.

RETAIN AAA BOND RATING
Retain AAA Bond rating in order to provide the lowest cost debt financing possible.

OPTIMIZE BUDGET PLAN
MCES' 5-year budget plan should optimize capital, O&M programs to meet customer service goals.

PRESERVE ASSETS
The region's wastewater assets should be well maintained to preserve their value and performance.

BE FAIR AND TRANSPARENT
Allocation of all charges should be fair, equitable, and transparent to the customer.

HEALTH, SAFETY & ENVIRONMENT

COMPLY WITH PERMITS
Comply consistently with water, air, and other environmental permits.

MINIMIZE IMPACTS
Convey and treat wastewater safely with minimal backups, spills, and traffic impacts.

LEAD BY EXAMPLE
Be a leader on environmental sustainability, including water/ energy conservation and water reuse.

CUSTOMER SERVICE

BE A GOOD NEIGHBOR
Mitigate community impacts related to odors, traffic, noise, and visual aesthetics.

MEET CAPACITY NEEDS
Provide conveyance and treatment capacity consistent with regional and local plans.

COMMUNICATE INFORMATION
Communicate with customers about financial info and capital projects & programs that impact them.

ENGAGE CUSTOMERS
Engage customers in a meaningful public process. Provide notice for changes in rules, fees, projects, environmental performance & resolving competing Council policies/interests.

COORDINATE WITH OTHERS
Optimize intergovernmental coordination in all MCES work that intersects with community work.

FINANCIAL

CHARGES & FEES
Charges and fees should be predictable, justifiable, and provide good value for the region.

RETAIN AAA BOND RATING
Retain AAA Bond rating in order to provide the lowest cost debt financing possible.

OPTIMIZE BUDGET PLAN
MCES' 5-year budget plan should optimize capital, O&M programs to meet customer service goals.

PRESERVE ASSETS
The region's wastewater assets should be well maintained to preserve their value and performance.

BE FAIR AND TRANSPARENT
Allocation of all charges should be fair, equitable, and transparent to the customer.

HEALTH, SAFETY & ENVIRONMENT

COMPLY WITH PERMITS
Comply consistently with water, air, and other environmental permits.

MINIMIZE IMPACTS
Convey and treat wastewater safely with minimal backups, spills, and traffic impacts.

LEAD BY EXAMPLE
Be a leader on environmental sustainability, including water/ energy conservation and water reuse.

CUSTOMER SERVICE

BE A GOOD NEIGHBOR
Mitigate community impacts related to odors, traffic, noise, and visual aesthetics.

MEET CAPACITY NEEDS
Provide conveyance and treatment capacity consistent with regional and local plans.

COMMUNICATE INFORMATION
Communicate with customers about financial info and capital projects & programs that impact them.

ENGAGE CUSTOMERS
Engage customers in a meaningful public process. Provide notice for changes in rules, fees, projects, environmental performance & resolving competing Council policies/interests.

COORDINATE WITH OTHERS
Optimize intergovernmental coordination in all MCES work that intersects with community work.

Appendix D - Wastewater Reuse Task Force

The 2017 Task Force recommended the following actions regarding the Met Council's financial contribution to future wastewater reuse opportunities. These recommendations contain a regional cost share structure based on the regional water resource recovery system benefit only. The Task Force recommendations are as follows:

The institutional arrangements and cost of service approach for wastewater reuse are important to the development of wastewater reuse in the region. In implementing wastewater reuse opportunities, the Met Council will use the following approaches:

- Met Council shall use a cost-of-service, case-by-case approach to wastewater reuse in cooperation and partnership with local communities. The Met Council will evaluate the potential regional benefit of a potential wastewater reuse project and, if the Met Council's criteria are met, will determine an appropriate cost share, provided that the cumulative regional cost share shall not exceed 0.75% of the total annual municipal wastewater charges based on the impact of a 20-year debt service repayment period that the project(s) would create.
- Criteria to be used to evaluate whether there is a regional benefit to a potential wastewater reuse opportunity shall include: (1) the regional wastewater system was built to service long-term growth in a sub-regional service area in which (a) water managers now recognize concerns about sustainable water supply and the importance of meeting the needs of future generations while not harming ecosystems, degrading water, or reducing water levels beyond the reach of public water supplies and privately-owned wells and (b) a growing demand for groundwater could mean it will be difficult to obtain a groundwater use permit from the Department of Natural Resources; and/or (2) the proposed reuse project reduces MCES' surface water discharge, delaying capital improvements to meet more stringent regulatory requirements.
- Met Council shall hold a public hearing to obtain customer and public input prior to making a final determination on regional benefit and regional cost share.
- Implementation of each wastewater reuse project shall be consistent with the comprehensive plan of the community in which the reclaimed water user is located.
- Met Council shall enter into a joint powers agreement with the community in which the reclaimed water user is located to define the reclaimed water service institutional arrangements and to avoid competition with municipal public water suppliers.
- Met Council shall enter into a long-term reclaimed water service agreement with each user, using a cost-of-service approach, including a potential regional cost share where appropriate.
- Met Council shall pursue sources of non-Met Council funding to complement Met Council funding of wastewater reuse projects, including Clean Water Legacy Funds, state bond funds, and reuse grants.

Appendix E – Community Forecasts and Flow Projections

Community	2020 Pop.	2030 Pop.	2040 Pop.	2050 Pop.	2020 HH	2030 HH	2040 HH	2050 HH	2020 Employ.	2030 Employ.	2040 Employ.	2050 Employ.
Carver	4,900	9,600	11,200	14,900	1,600	3,200	3,900	5,300	180	360	610	1,300
Chanhassen	24,800	27,700	29,500	32,100	9,200	10,700	11,700	12,800	13,600	16,600	18,300	21,000
Chaska	27,200	31,200	33,200	36,700	10,200	11,800	12,900	14,400	11,700	15,000	15,900	17,800
Deephaven	3,900	3,800	3,900	3,900	1,400	1,400	1,400	1,400	1,000	1,200	1,300	1,300
Eden Prairie	63,800	71,700	76,500	84,700	24,700	28,400	30,400	33,700	54,800	61,700	64,900	70,200
Excelsior	2,400	2,400	2,600	2,800	1,100	1,200	1,300	1,400	1,400	2,000	2,000	2,200
Greenfield	170	170	170	170	60	60	60	60	0	0	0	0
Greenwood	730	730	760	760	290	290	300	300	120	190	230	240
Hopkins (pt.)	240	250	260	260	110	120	130	120	10	10	10	10
Independence	700	1,200	1,600	1,700	240	400	540	590	180	190	200	210
Laketown Twp.	490	1,600	1,500	0	150	510	500	0	180	510	440	0
Long Lake	1,700	2,000	2,100	2,100	740	850	880	880	1,000	1,200	1,400	1,400
Loretto	650	690	720	740	270	280	300	300	270	510	530	540
Maple Plain	1,700	2,100	2,500	2,700	730	900	1,100	1,200	1,900	1,900	2,000	2,200
Medina (pt.)	1,100	1,100	1,300	1,600	360	400	470	570	170	180	210	260
Minnetonka	53,700	59,300	64,000	69,900	23,700	26,600	28,900	31,600	43,600	49,600	52,100	55,100
Minnetonka Beach	550	540	560	590	200	200	210	220	120	260	260	260
Minnetrista	6,300	8,100	9,300	10,500	2,100	2,700	3,100	3,500	460	670	860	1,100
Mound	9,400	9,500	9,500	9,700	4,200	4,300	4,300	4,400	1,100	1,400	1,500	1,600
Orono	5,800	6,700	7,900	8,900	2,200	2,500	3,000	3,400	1,300	1,700	1,800	2,000
Plymouth (pt.)	340	330	340	360	130	130	140	150	1,600	1,600	1,700	1,800
Prior Lake	26,400	27,900	30,200	33,700	10,000	10,700	12,100	13,800	4,000	4,100	4,600	5,700
Shakopee	41,600	49,900	54,200	61,300	14,000	17,800	20,500	23,600	23,900	32,100	35,800	42,900
Shorewood	7,800	8,100	8,300	8,400	2,900	3,000	3,100	3,200	1,700	1,900	1,900	2,000
Spring Park	1,700	1,800	1,900	2,100	1,000	1,100	1,100	1,300	680	1,000	1,000	1,100
St. Bonifacius	2,300	2,300	2,300	2,400	900	920	930	980	350	500	530	580
Tonka Bay	1,400	1,600	1,800	1,800	590	690	750	760	230	410	420	430
Victoria	10,100	14,400	17,000	20,700	3,400	5,000	6,100	7,500	960	1,800	2,000	2,400
Waconia	12,900	17,400	18,800	22,600	4,600	6,500	7,200	8,600	6,700	8,100	8,800	10,200
Wayzata	4,400	4,700	5,300	5,500	2,200	2,400	2,600	2,800	4,200	5,300	5,500	5,800

Woodland	130	130	130	130	50	50	50	50	0	0	0	0
Blue Lake Facility Totals	**319,300**	**368,940**	**399,340**	**443,710**	**123,320**	**145,100**	**159,960**	**178,880**	**177,410**	**211,990**	**226,800**	**251,630**

Note: Pop. = Population; HH=Households; Employ.=Employment

Table 6.1~~a~~a: DRAFT Community Forecasts of Sewer Population, Households, and Employment for Blue Lake Resource Recovery Facility

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Community	2020 Pop.	2030 Pop.	2040 Pop.	2050 Pop.	2020 HH	2030 HH	2040 HH	2050 HH	2020 Employ.	2030 Employ.	2040 Employ.	2050 Employ.
Rogers (pt.)	10,700	14,800	17,300	23,600	3,600	5,200	6,100	8,300	9,300	12,600	14,300	17,800
Dayton (pt.)	0	0	0	6,900	0	0	0	2,500	0	0	0	3,100
Corcoran (pt.)	0	0	0	7,900	0	0	0	2,900	0	0	0	1,600
Maple Grove (pt.)	0	0	530	1,200	0	0	210	470	0	0	70	150
Crow River/ Rogers Facility Totals	**10,700**	**14,800**	**17,830**	**39,600**	**3,600**	**5,200**	**6,310**	**14,170**	**9,300**	**12,600**	**14,370**	**22,650**

Note: Pop. = Population; HH=Households; Employ.=Employment

Table 6.2b: DRAFT Community Forecasts of Sewer Population, Households, and Employment for Crow River/Rogers Resource Recovery Facility

Community	2020 Pop.	2030 Pop.	2040 Pop.	2050 Pop.	2020 HH	2030 HH	2040 HH	2050 HH	2020 Employ.	2030 Employ.	2040 Employ.	2050 Employ.
Cottage Grove	36,500	43,600	45,800	50,500	12,300	15,200	16,600	18,500	6,700	8,700	9,500	10,900
Lake Elmo (pt.)	3,300	5,000	5,700	6,800	1,200	1,900	2,200	2,600	990	1,500	1,700	2,100
Woodbury (pt.)	45,200	51,700	55,500	61,200	16,400	19,600	21,800	24,300	8,600	12,900	14,200	15,900
Eagles Point Facility Totals	**85,000**	**100,300**	**107,000**	**118,500**	**29,900**	**36,700**	**40,600**	**45,400**	**16,290**	**23,100**	**25,400**	**28,900**

Note: Pop. = Population; HH=Households; Employ.=Employment

Table 6.3c: DRAFT Community Forecasts of Sewer Population, Households, and Employment for Eagles Point Resource Recovery Facility

Community	2020 Pop.	2030 Pop.	2040 Pop.	2050 Pop.	2020 HH	2030 HH	2040 HH	2050 HH	2020 Employ.	2030 Employ.	2040 Employ.	2050 Employ.
East Bethel Facility Totals	580	1,600	2,300	3,200	210	600	870	1,200	140	740	1,700	2,000

Note: Pop. = Population; HH=Households; Employ.=Employment

Table 6.4d: DRAFT Community Forecasts of Sewer Population, Households, and Employment for East Bethel Resource Recovery Facility

Community	2020 Pop.	2030 Pop.	2040 Pop.	2050 Pop.	2020 HH	2030 HH	2040 HH	2050 HH	2020 Employ.	2030 Employ.	2040 Employ.	2050 Employ.
Apple Valley (pt.)	52,700	54,500	56,000	58,000	20,100	21,500	22,700	23,600	12,300	15,000	15,900	17,200
Elko New Market	4,600	6,200	8,200	10,500	1,500	2,000	2,800	3,700	390	910	1,700	2,100
Empire	2,500	3,100	3,400	3,800	810	1,000	1,200	1,300	260	440	570	710
Farmington	23,400	24,400	25,300	27,200	7,800	8,500	9,300	10,100	4,400	5,400	5,800	6,500
Lakeville (pt.)	62,200	72,400	76,800	81,300	20,800	25,500	28,100	30,100	14,700	21,400	23,500	28,000
Rosemount	24,000	29,900	31,600	37,400	8,400	10,800	11,700	13,900	6,800	9,100	11,100	14,900
Empire Facility Totals	**169,400**	**190,500**	**201,300**	**218,200**	**59,410**	**69,300**	**75,800**	**82,700**	**38,850**	**52,250**	**58,570**	**69,410**

Note: Pop. = Population; HH=Households; Employ.=Employment

Table 6.5d: DRAFT Community Forecasts of Sewer Population, Households, and Employment for Empire Resource Recovery Facility

Community	2020 Pop.	2030 Pop.	2040 Pop.	2050 Pop.	2020 HH	2030 HH	2040 HH	2050 HH	2020 Employ.	2030 Employ.	2040 Employ.	2050 Employ.
Hastings Facility Totals	22,100	23,400	24,600	26,400	9,100	9,800	10,500	11,300	6,900	8,100	8,500	8,900

Note: Pop. = Population; HH=Households; Employ.=Employment

Table 6.6e: DRAFT Community Forecasts of Sewer Population, Households, and Employment for Hastings Resource Recovery Facility

Community	2020 Pop.	2030 Pop.	2040 Pop.	2050 Pop.	2020 HH	2030 HH	2040 HH	2050 HH	2020 Employ.	2030 Employ.	2040 Employ.	2050 Employ.
Andover	23,200	24,300	25,800	28,300	7,700	8,300	9,000	9,900	4,900	6,100	6,600	6,800
Anoka	17,800	18,400	19,400	21,200	7,500	7,900	8,500	9,300	13,400	14,500	15,500	15,700
Arden Hills	9,900	11,500	12,000	13,700	3,100	3,700	4,000	4,700	10,100	11,500	12,700	14,700
Birchwood Village	860	880	860	850	350	360	360	360	20	20	20	20
Blaine	68,800	78,300	83,200	89,700	24,700	28,400	30,800	33,400	21,600	27,500	29,900	34,700
Brooklyn Center	33,800	35,600	36,000	36,900	11,300	12,100	12,300	12,600	12,600	14,000	14,300	15,000

Brooklyn Park	86,500	89,300	94,000	103,500	28,700	30,300	32,000	35,300	29,800	35,500	39,500	44,700
Centerville	3,900	4,000	4,700	4,700	1,400	1,500	1,800	1,800	430	1,000	1,200	1,300
Champlin	23,900	25,300	25,400	25,700	8,900	9,400	9,500	9,600	3,900	4,600	4,800	5,300
Circle Pines	5,000	5,000	5,100	5,300	2,000	2,100	2,100	2,200	400	570	610	680
Columbia Heights	22,000	23,300	23,600	24,500	8,800	9,600	9,900	10,300	3,800	4,400	4,500	4,800
Columbus	110	230	520	930	40	90	200	370	600	1,300	1,500	1,700
Coon Rapids	63,500	64,200	65,400	67,100	24,500	25,400	26,200	27,000	23,200	27,800	30,100	32,700
Corcoran (pt.)	1,300	4,500	7,800	2,500	450	1,600	2,800	890	180	1,300	1,600	280
Crystal	23,300	24,100	24,800	25,500	9,600	9,800	10,100	10,400	3,500	4,300	4,400	4,700
Dayton (pt.)	4,500	9,500	11,800	7,700	1,500	3,300	4,300	2,800	1,000	2,000	2,800	940
Edina (pt.)	52,800	57,800	61,200	66,100	21,800	24,800	26,300	28,300	34,900	42,400	43,300	46,700
Falcon Heights	5,400	5,700	5,700	5,900	2,200	2,400	2,500	2,600	4,600	5,300	5,400	5,700
Forest Lake	18,300	21,100	24,200	26,700	7,200	8,500	10,100	11,200	6,000	8,700	9,500	10,700
Fort Snelling	440	490	600	690	280	320	430	510	21,300	26,700	26,800	27,500
Fridley	29,600	31,200	31,100	32,300	11,700	12,700	13,000	13,600	22,300	25,900	26,200	28,300
Gem Lake	250	590	660	660	90	220	250	250	360	470	500	570
Golden Valley	22,500	23,400	24,700	26,500	10,000	10,400	11,000	11,800	28,800	29,900	30,700	32,700
Hilltop	960	1,100	1,100	1,000	390	420	420	420	700	620	660	690
Hopkins (pt.)	18,800	21,100	22,300	23,600	9,000	10,300	10,900	11,500	16,800	18,700	19,200	20,700
Hugo	12,900	16,800	18,800	21,800	4,900	6,500	7,500	8,800	2,400	3,200	3,800	3,900
Inver Grove Heights (pt.)	29,500	32,200	32,700	36,100	11,800	13,300	13,800	15,300	8,900	11,400	12,500	14,100
Lake Elmo (pt.)	1,200	3,600	4,300	5,300	410	1,300	1,700	2,000	1,300	2,000	2,200	2,600
Landfall	840	800	780	780	300	310	310	310	10	20	30	30
Lauderdale	2,300	2,300	2,300	2,400	1,200	1,200	1,200	1,300	640	830	830	890
Lexington	2,200	2,900	2,900	3,000	920	1,300	1,300	1,300	460	540	580	650
Lilydale	810	820	1,000	1,100	540	570	720	730	360	450	490	530
Lino Lakes	16,100	22,100	24,200	26,800	5,200	7,500	8,400	9,400	3,700	5,100	5,500	6,000
Little Canada	10,800	10,600	11,100	11,600	4,600	4,700	5,000	5,300	5,400	6,700	7,000	7,400
Mahtomedi	7,700	8,100	8,000	7,900	3,000	3,200	3,200	3,200	2,800	2,700	2,700	2,700
Maple Grove (pt.)	69,900	74,600	81,300	89,000	26,600	29,300	32,200	35,300	31,800	39,000	41,300	46,500
Maplewood	41,800	43,200	43,700	45,800	15,900	16,700	17,200	18,100	24,400	28,300	29,800	31,900

Medicine Lake	340	360	360	360	150	160	160	160	40	60	70	70
Medina (pt.)	3,700	5,600	6,400	6,900	1,200	1,900	2,200	2,500	4,500	5,500	6,200	6,900
Mendota	180	220	290	350	80	90	130	160	60	220	250	300
Mendota Heights	11,600	11,800	12,300	12,900	4,700	4,900	5,200	5,500	10,500	12,100	12,600	13,300
Minneapolis	430,000	451,400	484,800	514,200	187,700	203,100	218,000	231,200	294,500	323,600	332,100	352,900
Mounds View	13,200	13,200	13,700	14,800	5,200	5,300	5,600	6,100	6,700	7,200	7,500	8,200
New Brighton	23,500	24,100	24,100	25,100	9,500	9,900	10,100	10,600	9,400	10,400	10,500	11,000
New Hope	22,000	22,200	22,500	23,100	9,000	9,200	9,300	9,500	10,500	11,400	11,600	12,200
Newport	3,600	4,300	5,400	6,000	1,400	1,800	2,300	2,600	1,600	1,800	2,000	2,400
North Oaks	1,800	1,900	1,900	1,900	690	700	700	700	1,200	1,400	1,500	1,500
North St. Paul	12,400	13,100	13,100	13,000	4,800	5,200	5,300	5,300	3,100	3,500	3,500	3,500
Oakdale	28,200	31,900	32,600	34,600	11,300	13,200	13,900	14,900	9,900	11,400	12,100	12,100
Osseo	2,700	2,700	3,100	3,200	1,300	1,300	1,500	1,500	1,700	3,000	3,200	3,700
Plymouth	80,400	81,400	85,700	91,300	31,800	33,100	35,100	37,500	50,400	55,800	58,900	64,200
Ramsey	15,500	19,600	22,800	26,400	5,400	7,000	8,300	9,700	6,000	7,900	8,900	10,200
Richfield	37,000	38,900	40,500	41,700	15,900	16,900	17,600	18,100	15,700	17,500	18,000	18,500
Robbinsdale	14,600	15,600	16,200	16,900	6,300	6,900	7,200	7,500	6,400	7,300	7,400	7,600
Rogers (pt.)	390	1,800	2,400	0	130	630	840	0	360	590	800	0
Roseville	36,300	35,900	36,100	37,500	15,600	16,000	16,400	17,100	32,300	36,700	37,700	39,700
Shoreview	26,900	28,400	29,100	29,600	11,200	12,200	12,700	13,000	9,500	12,200	12,500	13,100
South St. Paul	20,700	20,900	20,900	21,500	8,400	8,700	8,900	9,200	5,900	7,100	7,200	7,600
Spring Lake Park	7,200	7,500	7,500	7,500	3,000	3,100	3,200	3,200	2,500	3,600	3,900	4,400
St. Anthony	9,300	10,100	10,300	10,900	4,100	4,500	4,700	5,000	3,300	4,000	4,100	4,300
St. Louis Park	50,000	52,400	55,500	59,500	23,800	25,700	27,200	29,100	33,400	39,900	40,100	41,800
St. Paul	311,300	313,900	324,600	338,200	120,500	125,400	131,700	137,700	161,200	185,200	188,900	199,500
St. Paul Park	5,400	5,600	6,500	7,500	2,000	2,200	2,600	3,000	1,200	1,500	1,900	2,400
Vadnais Heights	12,900	13,000	14,200	14,100	5,400	5,700	6,300	6,300	8,100	9,200	9,700	10,500
West St. Paul	20,600	21,300	22,100	23,300	9,000	9,800	10,400	11,000	7,300	8,500	8,700	8,900
White Bear Lake	24,800	24,500	26,100	26,700	10,400	10,500	11,400	11,700	10,800	12,400	12,400	12,400
White Bear Twp.	11,000	10,900	11,200	11,200	4,400	4,400	4,600	4,600	2,600	3,100	3,300	3,300

Willernie	520	520	510	510	220	230	230	230	150	230	230	240
Woodbury (pt.)	28,200	29,700	29,800	31,900	10,300	11,300	11,700	12,700	12,500	15,100	16,000	17,600
Metropolitan Facility Totals	**1,999,700**	**2,113,610**	**2,225,580**	**2,345,730**	**803,440**	**870,800**	**926,750**	**979,490**	**1,070,670**	**1,234,720**	**1,282,770**	**1,369,090**

Note: Pop. = Population; HH=Households; Employ.=Employment

Table 6.7e: DRAFT Community Forecasts of Sewer Population, Households, and Employment for Metropolitan Resource Recovery Facility

Community	2020 Pop.	2030 Pop.	2040 Pop.	2050 Pop.	2020 HH	2030 HH	2040 HH	2050 HH	2020 Employ.	2030 Employ.	2040 Employ.	2050 Employ.
Apple Valley (pt.)	3,500	3,300	3,300	3,500	1,300	1,300	1,300	1,400	750	780	790	800
Bloomington	89,900	95,300	98,100	103,400	38,000	41,200	42,500	44,800	73,400	91,100	92,600	98,300
Burnsville	63,800	66,400	70,200	76,600	25,300	27,100	29,400	32,300	29,700	36,100	38,200	42,400
Credit River	0	1,300	1,600	2,700	0	440	600	1,000	0	220	280	280
Eagan	68,900	72,000	75,200	79,200	27,600	30,000	32,000	33,900	51,300	57,600	62,200	70,000
Edina (pt.)	680	2,800	3,600	4,100	280	1,200	1,500	1,800	2,500	3,200	3,200	3,300
Inver Grove Heights (pt.)	2,400	2,700	3,000	3,400	980	1,100	1,300	1,500	430	620	750	980
Lakeville (pt.)	6,200	7,000	7,500	7,700	2,100	2,400	2,700	2,900	1,200	1,700	1,800	1,900
Savage	32,200	33,900	34,800	37,700	11,100	12,300	13,500	14,900	7,400	9,500	10,100	11,000
Seneca Facility Totals	**267,580**	**284,700**	**297,300**	**318,300**	**106,660**	**117,040**	**124,800**	**134,500**	**166,680**	**200,820**	**209,920**	**228,960**

Note: Pop. = Population; HH = Households; Employ.= Employment

Table 6.8f: DRAFT Community Forecasts of Sewer Population, Households, and Employment for Seneca Resource Recovery Facility

Community	2020 Pop.	2030 Pop.	2040 Pop.	2050 Pop.	2020 HH	2030 HH	2040 HH	2050 HH	2020 Employ.	2030 Employ.	2040 Employ.	2050 Employ.
Bayport	3,800	4,100	4,000	4,000	990	1,100	1,100	1,100	4,200	5,000	5,200	5,200
Oak Park Heights	4,800	5,000	5,400	5,500	2,200	2,300	2,600	2,700	4,400	5,100	5,400	5,800
Stillwater	18,500	19,500	20,500	22,200	7,400	8,100	8,800	9,600	8,000	10,400	11,200	11,900

St. Croix Valley Facility Totals	**27,100**	**28,600**	**29,900**	**31,700**	**10,590**	**11,500**	**12,500**	**13,400**	**16,600**	**20,500**	**21,800**	**22,900**

Note: Pop. = Population; HH=Households; Employ.=Employment

Table 6.9g: DRAFT Community Forecasts of Sewer Population, Households, and Employment for St. Croix Valley Resource Recovery Facility

Community	2020 Pop.	2030 Pop.	2040 Pop.	2050 Pop.	2020 HH	2030 HH	2040 HH	2050 HH	2020 Employ.	2030 Employ.	2040 Employ.	2050 Employ.
Regional Totals	**2,901,460**	**3,126,450**	**3,305,150**	**3,545,340**	**1,146,230**	**1,266,040**	**1,358,090**	**1,461,040**	**1,502,840**	**1,764,820**	**1,849,830**	**2,004,440**

Note: Pop. = Population; HH=Households; Employ.=Employment

Table 6.10h: DRAFT Regional Totals of Community Forecasts of Sewer Population, Households, and Employment

Community	2020 Actual Flow (MGD)	2030 Flow (MGD)	2040 Flow (MGD)	2050 Flow (MGD)
Andover	1.35	1.44	1.54	1.69
Anoka	1.58	1.58	1.61	1.67
Apple Valley	3.28	3.42	3.52	3.67
Arden Hills	0.82	0.91	0.93	1.04
Bayport	0.53	0.55	0.53	0.51
Birchwood Village	0.06	0.06	0.06	0.05
Blaine	4.30	4.96	5.29	5.75
Bloomington	7.41	7.78	7.75	7.93
Brooklyn Center	2.54	2.60	2.55	2.54
Brooklyn Park	6.24	6.49	6.83	7.48
Burnsville	5.09	5.34	5.60	6.05
Carver	0.30	0.59	0.69	0.92
Centerville	0.24	0.26	0.30	0.30
Champlin	1.51	1.61	1.61	1.64
Chanhassen	2.54	2.75	2.89	3.08
Chaska	3.05	3.34	3.48	3.71
Circle Pines	0.28	0.27	0.27	0.28
Columbia Heights	1.26	1.31	1.29	1.31
Columbus	0.03	0.05	0.07	0.10
Coon Rapids	3.81	3.93	4.03	4.17
Corcoran	0.14	0.34	0.55	0.71
Cottage Grove	2.34	2.80	2.94	3.24
Credit River	0.00	0.08	0.10	0.17
Crystal	1.66	1.67	1.66	1.66
Dayton	0.28	0.60	0.75	0.93
Deephaven	0.46	0.44	0.44	0.42
Eagan	5.88	6.16	6.43	6.78
East Bethel	0.05	0.12	0.17	0.23
Eden Prairie	4.11	4.69	5.02	5.60
Edina	5.90	6.27	6.36	6.56
Elko New Market	0.26	0.37	0.50	0.64
Empire	0.16	0.20	0.22	0.25
Excelsior	0.18	0.19	0.19	0.20
Falcon Heights	0.56	0.57	0.56	0.56
Farmington	1.76	1.84	1.90	2.02
Forest Lake	1.52	1.73	1.93	2.10
Fridley	4.72	4.73	4.59	4.55
Gem Lake	0.04	0.07	0.07	0.07
Golden Valley	2.59	2.58	2.60	2.66
Greenfield	0.01	0.01	0.01	0.01
Greenwood	0.05	0.05	0.06	0.06

Community	2020 Actual Flow (MGD)	2030 Flow (MGD)	2040 Flow (MGD)	2050 Flow (MGD)
Hastings	1.51	1.61	1.68	1.80
Hilltop	0.09	0.10	0.10	0.10
Hopkins	1.59	1.71	1.75	1.80
Hugo	0.70	0.95	1.07	1.26
Independence	0.05	0.08	0.10	0.11
Inver Grove Heights	2.23	2.45	2.52	2.78
Lake Elmo	0.41	0.67	0.76	0.90
Laketown Township	0.05	0.12	0.11	0.00
Lakeville	4.66	5.43	5.75	6.10
Landfall	0.06	0.06	0.06	0.06
Lauderdale	0.14	0.14	0.14	0.14
Lexington	0.12	0.16	0.16	0.16
Lilydale	0.07	0.08	0.09	0.09
Lino Lakes	1.05	1.43	1.56	1.73
Little Canada	0.97	0.98	1.01	1.05
Long Lake	0.27	0.28	0.28	0.27
Loretto	0.04	0.05	0.05	0.05
Mahtomedi	0.48	0.50	0.50	0.49
Maple Grove	5.03	5.42	5.89	6.47
Maple Plain	0.23	0.25	0.27	0.28
Maplewood	3.95	3.97	3.91	3.94
Medicine Lake	0.04	0.04	0.04	0.03
Medina	0.40	0.53	0.60	0.66
Mendota	0.02	0.02	0.03	0.03
Mendota Heights	1.40	1.44	1.48	1.52
Minneapolis	48.91	49.26	49.94	50.57
Minnetonka	4.72	5.00	5.18	5.44
Minnetonka Beach	0.05	0.05	0.05	0.05
Minnetrista	0.35	0.46	0.54	0.61
Mound	0.84	0.83	0.80	0.79
Mounds View	1.06	1.03	1.03	1.08
New Brighton	1.81	1.81	1.76	1.77
New Hope	1.93	1.90	1.86	1.85
Newport	0.34	0.38	0.43	0.47
North Oaks	0.07	0.08	0.08	0.08
North St. Paul	1.02	1.04	1.01	0.97
Oak Park Heights	0.49	0.52	0.55	0.56
Oakdale	2.31	2.56	2.61	2.73
Orono	0.71	0.75	0.80	0.84
Osseo	0.18	0.20	0.22	0.23
Plymouth	6.75	6.89	7.20	7.62

Community	2020 Actual Flow (MGD)	2030 Flow (MGD)	2040 Flow (MGD)	2050 Flow (MGD)
Prior Lake	1.75	1.84	1.99	2.21
Ramsey	0.96	1.24	1.45	1.68
Richfield	2.32	2.39	2.42	2.43
Robbinsdale	0.92	0.96	0.97	0.99
Rogers	0.93	1.32	1.53	1.81
Rosemount	1.51	1.90	2.03	2.43
Roseville	2.91	2.86	2.80	2.83
Savage	2.07	2.20	2.26	2.45
Shakopee	2.57	3.19	3.51	4.04
Shoreview	2.08	2.21	2.25	2.29
Shorewood	1.05	1.07	1.08	1.09
South St. Paul	3.04	2.98	2.89	2.84
Spring Lake Park	0.55	0.57	0.56	0.55
Spring Park	0.23	0.24	0.25	0.26
St. Anthony	0.71	0.75	0.74	0.76
St. Bonifacius	0.26	0.26	0.26	0.27
St. Louis Park	4.22	4.34	4.40	4.54
St. Paul	24.80	24.57	24.52	24.75
St. Paul Park	0.32	0.33	0.38	0.44
Stillwater	2.04	2.13	2.21	2.32
Tonka Bay	0.20	0.21	0.22	0.21
Vadnais Heights	1.16	1.18	1.26	1.27
Victoria	0.73	1.00	1.16	1.39
Waconia	1.00	1.29	1.38	1.63
Wayzata	0.51	0.54	0.58	0.60
West St. Paul	2.05	2.05	2.04	2.05
White Bear Lake	2.04	1.98	2.02	1.99
White Bear Township	0.97	0.97	0.99	0.99
Willernie	0.05	0.05	0.05	0.04
Woodbury	4.79	5.38	5.64	6.16
Woodland	0.01	0.01	0.01	0.01

Table 6.11: Community Wastewater Flow Projections

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Appendix F – Wastewater Flow Variation Factors

Average Flow (MGD)	Peak Hourly Flow Factor
0.00 – 0.11	4.0
0.12 – 0.18	3.9
0.19 – 0.23	3.8
0.24 – 0.29	3.7
0.30 – 0.39	3.6
0.40 – 0.49	3.5
0.50 – 0.64	3.4
0.65 – 0.79	3.3
0.80 – 0.99	3.2
1.00 – 1.19	3.1
1.20 – 1.49	3.0
1.50 – 1.89	2.9
1.90 – 2.29	2.8
2.30 – 2.89	2.7
2.90 – 3.49	2.6
3.50 – 4.19	2.5
4.20 – 5.09	2.4
5.10 – 6.39	2.3
6.40 – 7.99	2.2
8.00 – 10.39	2.1
10.40 – 13.49	2.0
13.50 – 17.99	1.9
18.00 – 29.99	1.8
over 30.00	1.7

Table 6.12~~:~~ Environmental Services Flow Variation Factors for Sewer Design

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Average Flow (MGD)	Peak Hourly Flow Factor
< 0.10	4.5
0.11 - 0.20	4.4
0.21 - 0.30	4.3
0.31 - 0.40	4.2
0.41 - 0.50	4.1
0.51 - 0.60	4.0
0.61 - 0.70	3.9
0.71 - 0.80	3.8
0.81 - 1.00	3.7
1.01 - 1.20	3.6
1.21 - 1.50	3.5
1.51 - 2.00	3.4
2.01 - 2.50	3.3
2.51 - 3.00	3.2
3.01 - 3.50	3.1
3.51 - 4.00	3.0
4.01 - 4.50	2.9
4.51 - 5.00	2.8
5.01 - 6.00	2.7
6.01 - 8.00	2.6
8.01 - 10.00	2.5
10.01 - 12.00	2.4
12.01 - 16.00	2.3
16.01 - 20.00	2.2
20.01 - 30.00	2.1
> 30.00	2.0

Table 6.13: Wastewater Peaking Factors for Determining Inflow and Infiltration Goals

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Appendix G – Community and regional water demand projections

A key part of planning for regional water supply is knowing how much water has been used in the past, how much is being used now, and how much will be needed in the future. The Met Council has developed a method to project water demand for communities in the Twin Cities metropolitan area for the years 2030, 2040, and 2050. This method includes projections for both municipal community public water supply systems and for privately-owned high-capacity wells.

The approach is explained below along with Version 1 of the results for the municipal community public water supply systems (~~Table A-2a-e).~~**Tables 6.6, 6.7, 6.8**). Currently, the results show water demand projections for every municipal community public water supply system in the metro region. Work is underway to project water demand for privately-owned high-capacity wells, which are permitted by the Minnesota Department of Natural Resources (DNR) and pump more than 10,000 gallons per day on average or more than one million gallons of groundwater per year.

~~xv.~~ How water use projections support regional and local water supply planning

The Met Council has projected water use for the updated Metro Area Water Supply Plan. This information helps water supply planners get a sense of how much and where water will be used in the future. These projections also help provide data for technical studies, like regional groundwater models and other water supply analyses, to predict potential resource limits and evaluate different approaches for future water management.

Future water use was estimated for the years 2030, 2040, and 2050. By projecting water demand for these years, water supply planning aligns with the broader regional development guide, Imagine 2050, which includes populate forecasts for 2030, 2040, and 2050.

The water demand projections are intended to:

1. Assist Met Council planners and policy makers, state agencies, and community planners to plan for future growth and address regional issues. These projections can help us understand where future water demand might bump up against or exceed capacity, or where there is sufficient capacity to support growth.

2. Provide subregional and regional water demand data for Met Council's groundwater modeling projects, surface water analyses, and other studies.

3. Provide guidance for communities as they develop content for the water supply section of their comprehensive plan to project water utility revenue, plan for water infrastructure improvements, and request DNR appropriation permit amendments as needed to serve growth.

~~xvi.~~ Overview of the projection method

The total water use in the metro region is the sum of water pumped by each municipal community water supply system from groundwater and surface water sources, plus the water pumped by privately-owned, high-capacity wells. This is calculated using the following equation:

Total Metro Region Water Use = Projected Municipal Community Public Water System Use + Projected Privately-Owned High-Capacity Well Use

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The projection method uses historical water use data from the Minnesota Department of Natural Resources (DNR) and the Minnesota Department of Health (MDH), along with population forecasts developed by the Met Council.

These water demand projections for 2030, 2040, and 2050 help link regional water supply planning to the broader regional development framework, Imagine 2050, by using the same population forecasts for those years.

~~xvii.~~ Method for projecting a range of water use

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~~1.~~ *Simplifying assumptions*

The approach does not include estimates for low-capacity, privately-owned wells that use less than 10,000 gallons per day and less than one million gallons per year. This is because they make up less than five percent of the total water use in the region and the majority of this water is returned to the local groundwater system through individual subsurface sewage treatment systems.

The approach assumes that water use patterns from 2013 and 2022 in the metro region are representative of how water will continue to be used in the future. For example, this approach assumes that the average amount of water used per person per day from 2013-2022 will stay the same in 2030, 2040, and 2050.

This approach further assumes the growth rate for water use by privately-owned high-capacity wells, which have water appropriation permits from and report annual water use to the DNR, will follow the average annual growth rate that occurred from 2013-2022.

Lastly, this approach assumes that future population served by each community's municipal community public water system can be calculated by adding Met Council's projected population increases for 2030, 2040, and 2050 to the MDH's 2020 water service population data.

~~2.~~ *Analysis of historical data as input to projections*

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~~a.~~ Historical municipal community public water supply system total use per person per day

The Met Council calculated the total water use per person per day for each year from 2013-2022 for municipal community public water supply systems. This was done by dividing the total annual water use for each year by the population served in that year, and then dividing that result by 365 days.

Input data:

- Total annual water use data for municipal community water supply systems was obtained from the Minnesota Department of Natural Resources (DNR) Permitting and Reporting System (MPARS). Annual water use data between 2013 and 2022 was downloaded from the DNR Minnesota Water Use data website. Total annual municipal community public water supply system water use is the sum of the year's residential, commercial, governmental, institutional, and unaccounted for water, as reported by the municipal community public water supply system to the DNR.

- The population served by the municipal community public water supply for each community was obtained from Local Water Supply Plans submitted by communities to the Minnesota Department of Natural Resources (DNR) for years that data was available (generally through 2018) and from the Minnesota Department of Health's (MDH's) Minnesota Public Health Data Access Drinking Water Quality dataset where data was not available in Local Water Supply Plans and for years 2019-2022.

Results for each municipal community water supply system are reported in **Tables 6.6-, 6.7, 6.8** and were used to calculate the regional average total water use per person per day (**Table 6.5** and **Figure 6.21**). The 2013-2022 regional average was 100.81 gallons per person per day.

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While the average total water use per person per day was 100.81 during this period, it is important to recognize that water use varied significantly from year to year between 2013 and 2022 due to factors such as development, wet versus dry years, changes in water efficiency, and other variable factors affecting water use.

Met Council recommends that regional water use results should be reported with a minimum variable range of plus or minus 10% to reflect uncertainty due to region-wide shifts in population and industrial changes, changes in water efficiency, extreme weather patterns (wet and dry), and other variable conditions that could affect water demand (**Figure 6.21**).

Year	Total Use (Gallons/Person/Day)
2013	111.03
2014	103.55
2015	100.34
2016	99.27
2017	98.53
2018	99.22
2019	91.90
2020	97.34
2021	104.36
2022	102.58
Range	91.90-111.03
Average (2013-2022)	100.81
% Above Average	10.13
% Below Average	-8.84

Table 6.14: Total annual municipal community public water supply system water use per person per day from 2013-2022.

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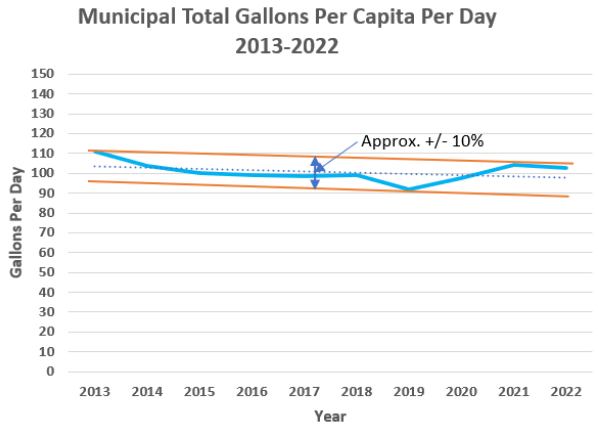

Figure 6.1: Average annual total gallons per person per day across the entire metro region for municipal community public water supply systems for the years 2013-2022 (blue line). The annual average total gallons per person per day ranged by approximately plus and minus 10% below the trend line (dotted blue line).

Data sources: Minnesota DNR's MPARS, MDH, and community local water supply plans

Historical privately-owned, high-capacity well use

Privately-owned, high-capacity well use is being calculated by Met Council for each community in the metro region for each year from 2013-2022.

Input data:

- Annual water use data for privately-owned, high-capacity wells is being obtained from the Minnesota Department of Natural Resources (DNR) Permitting and Reporting System (MPARS). Annual water use data between 2013 and 2022 was downloaded from the DNR Minnesota Water Use data website.

Met Council will calculate the average annual increase in pumping observed for each water use category for the privately-owned, high-capacity well use for each community from 2013-2022. Results for privately-owned, high-capacity well use will be reported for each community in the metro region and used to project future water use for 2030, 2040, and 2050.

~~3.~~ *Projecting privately-owned, high-capacity well use*

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Water pumped volumes from private high-capacity wells, which produce more than 10,000 gallons per day or more than one million gallons per year, are also being projected for the metro region for 2030, 2040, and 2050. The estimated amount of future water use for privately-owned, high-capacity wells will be calculated for each water use category for each community for 2030, 2040, and 2050 using the following equation:

Projected Privately-Owned, High-Capacity Wells Water Pumped = [Current Total Annual High-Capacity Wells Pumped Volume] X [2013-2022 Average Annual Increase Percentage in Water Pumped Volume] with a Variable Range

Input data:

- Current total annual high-capacity wells pumped volume is available through the Minnesota Department of Natural Resources (DNR) Permitting and Reporting System (MPARS) because these wells require a permit from the MN Department of Natural Resources, and their annual pumping is reported in MPARS. Annual water use data between 2013 and 2022 was downloaded from the DNR Minnesota Water Use data website.

- 2013-2022 average annual increase percentage in water pumped volume, to be determined

The Met Council recommends using a variable range of +/-10 to 20% for estimating water pumped from privately-owned, high-capacity wells. This approach helps in planning that can adapt to changes such as in industrial development, changes in water efficiency, extreme weather, and other factors that could impact future water use.

~~4.~~ *Projecting population served*

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Population served by each municipal community public water supply system was calculated by adding Met Council's forecasted increase in total population from 2020-2030, 2020-2040, and 2020-2050 to the 2020 population served reported by MDH.

Input data:

- The forecasted increase in population was obtained from Met Council preliminary forecasts for 2030, 2040, and 2050 (published in the spring of 2024).

- The population served by the municipal community public water supply for each community in 2020 was obtained from the Minnesota Department of Health's (MDH's) Minnesota Public Health Data Access Drinking Water Quality dataset.

Projected 2030, 2040, and 2050 population served by each municipal community public water supply system are reported in **Tables 6.6~~-~~, 6.7, 6.8**.

~~5.~~ *Projecting municipal community public water supply system use*

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The estimated amount of future water use for each municipal community public water supply system in the metro region was calculated for 2030, 2040, and 2050 using the following equation:

Projected Municipal Community Public Water Supply System Water Use for YEAR = [Projected Population Served for YEAR] X [2013-2022 Average Municipal Community Public Water Supply System Total Water Use per Person per Day] X 365 Days

Input data:

- Projected population served, reported in **Tables 6.6~~-~~, 6.7, 6.8**
- 2013-2022 average total water use per person per day, reported in **Tables 6.6~~-~~, 6.7, 6.8**

Projected 2030, 2040, and 2050 municipal community public water supply system total use is reported in **Tables 6.6~~-~~, 6.7, 6.8**.

The Met Council recommends that individual communities should consider using a **variable range of +/-20% for projecting water use when planning for improvements to water system infrastructure and adjusting water utility billing rates.** This accounts for potential increases in population and industrial growth beyond projections, changes in water efficiency, varying weather patterns (both wet and dry), and other factors that could affect future water demands. This recommendation is supported

by the fact that several communities in the metro region experienced fluctuations in water demand that were closer to +/-20% rather than just the +/-10% that was experienced for the metro region as a whole from 2013-2022. These fluctuations were mainly due to significant changes in industrial water use and unexpected rapid growth in residential areas.

~~6.~~ *Projecting future total water use in the metro region*

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The projected total amount of water use in the seven-county Twin Cities metropolitan area will be calculated for 2030, 2040, and 2050 by adding together the projected future water use for each community's municipal community public water supply systems and privately-owned, high-capacity wells.

Total estimated water use for the metro region will be calculated using the following basic equation:

Total Metro Region Water Use = Projected Municipal Community Public Water System Use + Projected Privately-Owned High-Capacity Well Use

~~xviii.~~ Conclusions

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The Twin Cities metropolitan area is estimated to need 283 to 346 million gallons per day (MGD) in 2030, 301 to 367 MDG by 2040, and 323 to 395 MGD by 2050 for municipal community public water supply systems and privately-owned, high-capacity wells (**Figure 6.~~32~~**). The reported range reflects uncertainty due to region-wide shifts in population and industrial changes, changes in water efficiency, extreme weather patterns (wet and dry), and other variable conditions that could affect water demand.

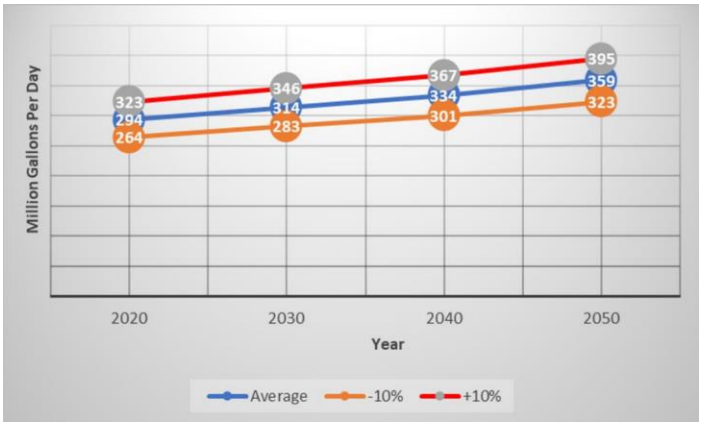

Figure 6.2: Projected water demand by municipal community public water supply systems from a baseline in 2020 to 2030, 2040, and 2050. A range of +/-10% is recommended to reflect uncertainty due to region-wide shifts in population and industrial changes, changes in water efficiency, extreme weather patterns (wet and dry), and other variable conditions that could affect water demand.

Data source: Met Council

The estimated amount of future water use for each municipal community public water supply system in the metro region was calculated for 2030, 2040, and 2050 as reported in ~~Table A-2a-c~~**Tables 6.6, 6.7, 6.8** to support local water supply planning efforts. The Met Council recommends that individual communities should consider using a variable range of +/-20% for projecting water use, and these values are also included in **Tables 6.6~~-~~, 6.7, 6.8**.

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These water demand projections are intended to:

1. Help community planners and Met Council planners, policymakers, and state agencies prepare for future growth and tackle regional issues.
2. Guide communities in developing the water supply section of their comprehensive plans, estimating water utility revenue, planning for water infrastructure improvements, and requesting DNR appropriation permit amendments to support growth.
3. Provide water demand data for Met Council's groundwater modeling projects, surface water analyses, and other studies.

Community	2013-2022 Average Total Water Use (Gallons/ Peron/ Day)	2030 Projected Population Served	2030 Projected Average Daily Water Use (Million Gallons/Day)	-10%	+10%	-20%	+20%
Andover	127.19	23,711	3.016	2.714	3.317	2.413	3.619
Anoka	123.50	21,732	2.684	2.416	2.952	2.147	3.221
Apple Valley	112.12	56,040	6.283	5.655	6.912	5.027	7.540
Bayport	114.64	2,559	0.293	0.264	0.323	0.235	0.352
Belle Plaine	91.59	8,630	0.790	0.711	0.869	0.632	0.948
Bloomington	103.69	72,247	7.491	6.742	8.240	5.993	8.990
Brooklyn Center	94.46	30,241	2.857	2.571	3.142	2.285	3.428
Brooklyn Park	103.91	84,112	8.740	7.866	9.614	6.992	10.488
Burnsville	141.30	66,605	9.411	8.470	10.353	7.529	11.294
Carver	86.82	5,951	0.517	0.465	0.568	0.413	0.620
Centerville	70.78	4,434	0.314	0.282	0.345	0.251	0.377
Champlin	98.34	24,451	2.405	2.164	2.645	1.924	2.885
Chanhassen	107.44	28,231	3.033	2.730	3.336	2.426	3.640
Chaska	112.47	28,544	3.210	2.889	3.531	2.568	3.852
Circle Pines	80.63	5,140	0.414	0.373	0.456	0.332	0.497
Cologne	77.51	2,231	0.173	0.156	0.190	0.138	0.208
Columbus	100.00	632	0.055	0.050	0.061	0.044	0.066
Coon Rapids	106.60	66,049	7.041	6.336	7.745	5.632	8.449
Cottage Grove	93.91	40,070	3.763	3.387	4.139	3.010	4.515
Dayton	61.15	7,485	0.458	0.412	0.503	0.366	0.549
Eagan	118.21	74,798	8.842	7.958	9.726	7.073	10.610
Eden Prairie	113.13	69,010	7.807	7.027	8.588	6.246	9.369
Edina	119.60	61,853	7.398	6.658	8.138	5.918	8.877
Elko New Market	63.09	5,843	0.369	0.332	0.406	0.295	0.442
Empire Township	99.28	2,691	0.267	0.240	0.294	0.214	0.321
Excelsior	122.88	2,075	0.255	0.229	0.280	0.204	0.306
Farmington	85.19	23,726	2.021	1.819	2.223	1.617	2.425
Forest Lake	111.09	14,497	1.611	1.449	1.772	1.288	1.933
Fridley	94.21	29,661	2.794	2.515	3.074	2.236	3.353
Greenfield	121.04	668	0.081	0.073	0.089	0.065	0.097
Hamburg	58.44	587	0.034	0.031	0.038	0.027	0.041
Hampton	66.06	706	0.047	0.042	0.051	0.037	0.056
Hastings	102.93	25,905	2.666	2.400	2.933	2.133	3.200
Hopkins	108.23	21,442	2.321	2.089	2.553	1.857	2.785
Hugo	84.72	14,764	1.251	1.126	1.376	1.001	1.501
Inver Grove Heights	79.74	39,620	3.159	2.843	3.475	2.527	3.791
Jordan	86.84	6,824	0.593	0.533	0.652	0.474	0.711
Lake Elmo	98.70	10,296	1.016	0.915	1.118	0.813	1.219
Lakeland	65.29	3,257	0.213	0.191	0.234	0.170	0.255
Lakeville	102.59	69,909	7.172	6.455	7.889	5.738	8.607

Lexington	88.99	2,551	0.227	0.204	0.250	0.182	0.272
Lino Lakes	87.00	21,043	1.831	1.648	2.014	1.465	2.197
Long Lake	103.62	1,900	0.197	0.177	0.217	0.157	0.236
Loretto	81.24	728	0.059	0.053	0.065	0.047	0.071
Mahtomedi	83.44	7,282	0.608	0.547	0.668	0.486	0.729
Maple Grove	114.38	85,679	9.800	8.820	10.780	7.840	11.760
Maple Plain	88.93	2,368	0.211	0.190	0.232	0.168	0.253
Marine on St. Croix	69.93	149	0.010	0.009	0.011	0.008	0.013
Mayer	83.84	2,203	0.185	0.166	0.203	0.148	0.222
Medina	121.21	5,230	0.634	0.571	0.697	0.507	0.761
Minneapolis	101.93	594,630	60.611	54.550	66.672	48.489	72.733
Minnetonka Beach	148.99	435	0.065	0.058	0.071	0.052	0.078
Minnetonka	113.58	61,175	6.948	6.253	7.643	5.559	8.338
Minnetrista	120.29	5,363	0.645	0.581	0.710	0.516	0.774
Mound	64.46	9,181	0.592	0.533	0.651	0.473	0.710
Mounds View	93.39	12,971	1.211	1.090	1.332	0.969	1.454
New Brighton	104.80	22,987	2.409	2.168	2.650	1.927	2.891
New Germany	59.47	548	0.033	0.029	0.036	0.026	0.039
New Prague	88.26	8,912	0.787	0.708	0.865	0.629	0.944
New Trier	72.77	149	0.011	0.010	0.012	0.009	0.013
Newport	82.97	4,767	0.396	0.356	0.435	0.316	0.475
North St. Paul	74.17	12,134	0.900	0.810	0.990	0.720	1.080
Norwood Young America	67.86	4,405	0.299	0.269	0.329	0.239	0.359
Oak Grove	83.36	118	0.010	0.009	0.011	0.008	0.012
Oak Park Heights	127.23	4,678	0.595	0.536	0.655	0.476	0.714
Oakdale	84.75	29,618	2.510	2.259	2.761	2.008	3.012
Orono	89.98	4,424	0.398	0.358	0.438	0.318	0.478
Prior Lake	68.30	29,667	2.026	1.824	2.229	1.621	2.432
Plymouth	105.43	79,030	8.332	7.499	9.165	6.665	9.998
Prior Lake	68.30	29,667	2.026	1.824	2.229	1.621	2.432
Ramsey	131.70	18,501	2.437	2.193	2.680	1.949	2.924
Randolph	167.42	443	0.074	0.067	0.082	0.059	0.089
Richfield	76.13	38,110	2.901	2.611	3.192	2.321	3.482
Robbinsdale	78.92	15,251	1.204	1.083	1.324	0.963	1.444
Rockford	80.55	4,484	0.361	0.325	0.397	0.289	0.433
Rogers	134.88	14,307	1.930	1.737	2.123	1.544	2.316
Rosemount	101.37	36,472	3.697	3.328	4.067	2.958	4.437
Savage	54.24	33,515	1.818	1.636	1.999	1.454	2.181
Shakopee Public Utilities	121.48	45,376	5.512	4.961	6.064	4.410	6.615
Shoreview	88.49	28,240	2.499	2.249	2.749	1.999	2.999
Shorewood	99.51	4,095	0.408	0.367	0.448	0.326	0.489
South St. Paul	111.45	20,373	2.271	2.043	2.498	1.816	2.725
Spring Lake Park	106.94	6,804	0.728	0.655	0.800	0.582	0.873
Spring Park	104.97	2,305	0.242	0.218	0.266	0.194	0.290
St. Anthony Village	86.61	10,105	0.875	0.788	0.963	0.700	1.050
St. Bonifacius	82.60	2,353	0.194	0.175	0.214	0.155	0.233
St. Francis	107.49	7,181	0.772	0.695	0.849	0.618	0.926
St. Louis Park	110.70	51,666	5.719	5.147	6.291	4.575	6.863
St. Paul Park	90.80	6,390	0.580	0.522	0.638	0.464	0.696
St. Paul Regional Water Services	91.49	476,120	43.559	39.203	47.915	34.847	52.271
Stillwater	100.35	22,297	2.238	2.014	2.461	1.790	2.685
Tonka Bay	96.42	1,747	0.168	0.152	0.185	0.135	0.202
Vadnais Heights	95.76	14,122	1.352	1.217	1.488	1.082	1.623
Vermillion	92.85	502	0.047	0.042	0.051	0.037	0.056

Victoria	109.26	9,984	1.091	0.982	1.200	0.873	1.309
Waconia	82.89	17,579	1.457	1.311	1.603	1.166	1.748
Watertown	66.92	5,493	0.368	0.331	0.404	0.294	0.441
Wayzata	158.44	5,791	0.918	0.826	1.009	0.734	1.101
White Bear Lake	86.90	26,068	2.265	2.039	2.492	1.812	2.718
White Bear Township	98.72	11,271	1.113	1.001	1.224	0.890	1.335
Woodbury	101.56	77,462	7.867	7.081	8.654	6.294	9.441
TOTAL		**3,115,626**	**314.092**	**282.683**	**345.501**		

Table 6.15: Version 1 2030 municipal community public water supply system projections, including estimated 10% and 20% higher and lower projections to reflect uncertainty due to potential shifts in population and industrial changes, changes in water efficiency, extreme weather patterns (wet and dry), and other variable conditions that could affect water demand. This information is expected to be updated periodically with community input. These values were published on 2/15/2025, the date of the 2050 Water Policy Plan adoption. Values may be updated and available through the Met Council Environmental Services Planning Water Resources Policy and Planning group.

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Community	2013-2022 Average Total Water Use (Gallons/ Peron/ Day)	2040 Projected Population Served	2040 Projected Average Daily Water Use (Million Gallons/Day)	-10%	+10%	-20%	+20%
Andover	127.19	25,091	3.191	2.872	3.510	2.553	3.830
Anoka	123.50	22,146	2.735	2.462	3.009	2.188	3.282
Apple Valley	112.12	58,180	6.523	5.871	7.175	5.219	7.828
Bayport	114.64	2,795	0.320	0.288	0.352	0.256	0.385
Belle Plaine	91.59	10,139	0.929	0.836	1.021	0.743	1.114
Bloomington	103.69	76,420	7.924	7.132	8.716	6.339	9.509
Brooklyn Center	94.46	31,752	2.999	2.699	3.299	2.400	3.599
Brooklyn Park	103.91	87,458	9.088	8.179	9.997	7.270	10.905
Burnsville	141.30	70,310	9.935	8.941	10.928	7.948	11.922
Carver	86.82	7,236	0.628	0.565	0.691	0.503	0.754
Centerville	70.78	4,701	0.333	0.299	0.366	0.266	0.399
Champlin	98.34	25,021	2.461	2.215	2.707	1.968	2.953
Chanhassen	107.44	29,992	3.222	2.900	3.545	2.578	3.867
Chaska	112.47	31,034	3.490	3.141	3.839	2.792	4.188
Circle Pines	80.63	5,429	0.438	0.394	0.482	0.350	0.525
Cologne	77.51	2,702	0.209	0.189	0.230	0.168	0.251
Columbus	100.00	1,109	0.055	0.050	0.061	0.044	0.066
Coon Rapids	106.60	70,738	7.540	6.786	8.294	6.032	9.048
Cottage Grove	93.91	43,105	4.048	3.643	4.453	3.238	4.857
Dayton	61.15	9,094	0.556	0.500	0.612	0.445	0.667
Eagan	118.21	77,329	9.141	8.227	10.055	7.313	10.969
Eden Prairie	113.13	73,171	8.278	7.450	9.106	6.622	9.934
Edina	119.60	63,474	7.592	6.832	8.351	6.073	9.110
Elko New Market	63.09	8,658	0.546	0.492	0.601	0.437	0.656
Empire Township	99.28	3,271	0.325	0.292	0.357	0.260	0.390
Excelsior	122.88	2,315	0.284	0.256	0.313	0.228	0.341
Farmington	85.19	25,212	2.148	1.933	2.363	1.718	2.577
Forest Lake	111.09	16,792	1.865	1.679	2.052	1.492	2.239
Fridley	94.21	30,731	2.895	2.606	3.185	2.316	3.474
Greenfield	121.04	954	0.115	0.104	0.127	0.092	0.139
Hamburg	58.44	605	0.035	0.032	0.039	0.028	0.042
Hampton	66.06	745	0.049	0.044	0.054	0.039	0.059
Hastings	102.93	26,985	2.778	2.500	3.055	2.222	3.333
Hopkins	108.23	23,567	2.551	2.296	2.806	2.041	3.061
Hugo	84.72	16,893	1.431	1.288	1.574	1.145	1.717

Inver Grove Heights	79.74	42,352	3.377	3.039	3.715	2.702	4.052
Jordan	86.84	7,461	0.648	0.583	0.713	0.518	0.777
Lake Elmo	98.70	12,007	1.185	1.067	1.304	0.948	1.422
Lakeland	65.29	3,511	0.229	0.206	0.252	0.183	0.275
Lakeville	102.59	74,062	7.598	6.838	8.358	6.079	9.118
Lexington	88.99	2,642	0.235	0.212	0.259	0.188	0.282
Lino Lakes	87.00	23,146	2.014	1.812	2.215	1.611	2.416
Long Lake	103.62	2,033	0.211	0.190	0.232	0.169	0.253
Loretto	81.24	746	0.061	0.055	0.067	0.048	0.073
Mahtomedi	83.44	7,840	0.654	0.589	0.720	0.523	0.785
Maple Grove	114.38	93,066	10.645	9.580	11.709	8.516	12.774
Maple Plain	88.93	2,706	0.241	0.217	0.265	0.193	0.289
Marine on St. Croix	69.93	223	0.016	0.014	0.017	0.012	0.019
Mayer	83.84	2,774	0.233	0.209	0.256	0.186	0.279
Medina	121.21	5,989	0.726	0.653	0.799	0.581	0.871
Minneapolis	101.93	626,466	63.856	57.470	70.241	51.085	76.627
Minnetonka Beach	148.99	452	0.067	0.061	0.074	0.054	0.081
Minnetonka	113.58	66,773	7.584	6.826	8.342	6.067	9.101
Minnetrista	120.29	5,955	0.716	0.645	0.788	0.573	0.860
Mound	64.46	9,608	0.619	0.557	0.681	0.495	0.743
Mounds View	93.39	13,465	1.257	1.132	1.383	1.006	1.509
New Brighton	104.80	23,732	2.487	2.238	2.736	1.990	2.984
New Germany	59.47	661	0.039	0.035	0.043	0.031	0.047
New Prague	88.26	9,232	0.815	0.733	0.896	0.652	0.978
New Trier	72.77	152	0.011	0.010	0.012	0.009	0.013
Newport	82.97	5,742	0.476	0.429	0.524	0.381	0.572
North St. Paul	74.17	12,557	0.931	0.838	1.024	0.745	1.118
Norwood Young America	67.86	4,672	0.317	0.285	0.349	0.254	0.380
Oak Grove	83.36	118	0.010	0.009	0.011	0.008	0.012
Oak Park Heights	127.23	5,006	0.637	0.573	0.701	0.510	0.764
Oakdale	84.75	30,636	2.596	2.337	2.856	2.077	3.116
Orono	89.98	5,223	0.470	0.423	0.517	0.376	0.564
Prior Lake	68.30	33,174	2.266	2.039	2.492	1.813	2.719
Plymouth	105.43	83,573	8.811	7.930	9.692	7.049	10.573
Prior Lake	68.30	33,174	2.266	2.039	2.492	1.813	2.719
Ramsey	131.70	21,306	2.806	2.525	3.087	2.245	3.367
Randolph	167.42	489	0.082	0.074	0.090	0.065	0.098
Richfield	76.13	38,732	2.949	2.654	3.244	2.359	3.539
Robbinsdale	78.92	16,197	1.278	1.150	1.406	1.023	1.534
Rockford	80.55	4,521	0.364	0.328	0.401	0.291	0.437
Rogers	134.88	16,743	2.258	2.032	2.484	1.807	2.710
Rosemount	101.37	38,073	3.860	3.474	4.245	3.088	4.631
Savage	54.24	36,624	1.986	1.788	2.185	1.589	2.384
Shakopee Public Utilities	121.48	51,411	6.246	5.621	6.870	4.997	7.495
Shoreview	88.49	29,184	2.582	2.324	2.841	2.066	3.099
Shorewood	99.51	4,581	0.456	0.410	0.501	0.365	0.547
South St. Paul	111.45	20,879	2.327	2.094	2.560	1.862	2.792
Spring Lake Park	106.94	7,015	0.750	0.675	0.825	0.600	0.900
Spring Park	104.97	2,495	0.262	0.236	0.288	0.210	0.314
St. Anthony Village	86.61	10,249	0.888	0.799	0.976	0.710	1.065
St. Bonifacius	82.60	2,405	0.199	0.179	0.219	0.159	0.238
St. Francis	107.49	9,700	1.043	0.938	1.147	0.834	1.251
St. Louis Park	110.70	54,692	6.054	5.449	6.660	4.843	7.265
St. Paul Park	90.80	6,926	0.629	0.566	0.692	0.503	0.755

St. Paul Regional Water Services	91.49	498,888	45.642	41.078	50.206	36.514	54.771
Stillwater	100.35	24,240	2.432	2.189	2.676	1.946	2.919
Tonka Bay	96.42	1,860	0.179	0.161	0.197	0.143	0.215
Vadnais Heights	95.76	14,805	1.418	1.276	1.559	1.134	1.701
Vermillion	92.85	500	0.046	0.042	0.051	0.037	0.056
Victoria	109.26	12,117	1.324	1.191	1.456	1.059	1.589
Waconia	82.89	19,302	1.600	1.440	1.760	1.280	1.920
Watertown	66.92	6,575	0.440	0.396	0.484	0.352	0.528
Wayzata	158.44	6,344	1.005	0.905	1.106	0.804	1.206
White Bear Lake	86.90	27,256	2.369	2.132	2.605	1.895	2.842
White Bear Township	98.72	12,123	1.197	1.077	1.316	0.957	1.436
Woodbury	101.56	82,050	8.333	7.500	9.167	6.667	10.000
TOTAL		**3,314,365**	**333.967**	**300.570**	**367.364**		

Table 6.16: Version 1 2040 municipal community public water supply system projections, including estimated 10% and 20% higher and lower projections to reflect uncertainty due to potential shifts in population and industrial changes, changes in water efficiency, extreme weather patterns (wet and dry), and other variable conditions that could affect water demand. This information is expected to be updated periodically with community input.

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Community	2013-2022 Average Total Water Use (Gallons/ Peron/ Day)	2050 Projected Population Served	2050 Projected Average Daily Water Use (Million Gallons/Day)	-10%	+10%	-20%	+20%
Andover	127.19	27,287	3.471	3.124	3.818	2.777	4.165
Anoka	123.50	23,422	2.893	2.603	3.182	2.314	3.471
Apple Valley	112.12	60,351	6.767	6.090	7.443	5.413	8.120
Bayport	114.64	3,000	0.344	0.310	0.378	0.275	0.413
Belle Plaine	91.59	14,127	1.294	1.164	1.423	1.035	1.553
Bloomington	103.69	86,358	8.955	8.059	9.850	7.164	10.745
Brooklyn Center	94.46	32,891	3.107	2.796	3.418	2.486	3.728
Brooklyn Park	103.91	91,295	9.486	8.538	10.435	7.589	11.384
Burnsville	141.30	75,200	10.626	9.563	11.688	8.501	12.751
Carver	86.82	11,065	0.961	0.865	1.057	0.769	1.153
Centerville	70.78	5,058	0.358	0.322	0.394	0.286	0.430
Champlin	98.34	24,894	2.448	2.203	2.693	1.958	2.938
Chanhassen	107.44	31,990	3.437	3.093	3.781	2.750	4.124
Chaska	112.47	35,938	4.042	3.638	4.446	3.233	4.850
Circle Pines	80.63	5,700	0.460	0.414	0.506	0.368	0.552
Cologne	77.51	3,432	0.266	0.239	0.293	0.213	0.319
Columbus	100.00	1,666	0.055	0.050	0.061	0.044	0.066
Coon Rapids	106.60	76,659	8.172	7.354	8.989	6.537	9.806
Cottage Grove	93.91	49,259	4.626	4.163	5.088	3.701	5.551
Dayton	61.15	12,253	0.749	0.674	0.824	0.599	0.899
Eagan	118.21	81,266	9.606	8.646	10.567	7.685	11.528
Eden Prairie	113.13	78,285	8.857	7.971	9.742	7.085	10.628
Edina	119.60	66,302	7.930	7.137	8.723	6.344	9.516
Elko New Market	63.09	11,481	0.724	0.652	0.797	0.580	0.869
Empire Township	99.28	3,860	0.383	0.345	0.422	0.307	0.460
Excelsior	122.88	2,656	0.326	0.294	0.359	0.261	0.392
Farmington	85.19	28,580	2.435	2.191	2.678	1.948	2.922
Forest Lake	111.09	20,266	2.251	2.026	2.477	1.801	2.702
Fridley	94.21	32,376	3.050	2.745	3.355	2.440	3.660
Greenfield	121.04	1,286	0.156	0.140	0.171	0.125	0.187
Hamburg	58.44	613	0.036	0.032	0.039	0.029	0.043

Hampton	66.06	783	0.052	0.047	0.057	0.041	0.062
Hastings	102.93	28,280	2.911	2.620	3.202	2.329	3.493
Hopkins	108.23	25,477	2.757	2.482	3.033	2.206	3.309
Hugo	84.72	20,547	1.741	1.567	1.915	1.393	2.089
Inver Grove Heights	79.74	45,765	3.649	3.284	4.014	2.919	4.379
Jordan	86.84	8,227	0.714	0.643	0.786	0.572	0.857
Lake Elmo	98.70	14,527	1.434	1.290	1.577	1.147	1.721
Lakeland	65.29	3,489	0.228	0.205	0.251	0.182	0.273
Lakeville	102.59	84,015	8.619	7.757	9.481	6.895	10.343
Lexington	88.99	2,702	0.240	0.216	0.264	0.192	0.289
Lino Lakes	87.00	26,474	2.303	2.073	2.533	1.843	2.764
Long Lake	103.62	2,103	0.218	0.196	0.240	0.174	0.261
Loretto	81.24	770	0.063	0.056	0.069	0.050	0.075
Mahtomedi	83.44	7,770	0.648	0.583	0.713	0.519	0.778
Maple Grove	114.38	103,428	11.830	10.647	13.013	9.464	14.196
Maple Plain	88.93	3,111	0.277	0.249	0.304	0.221	0.332
Marine on St. Croix	69.93	281	0.020	0.018	0.022	0.016	0.024
Mayer	83.84	3,098	0.260	0.234	0.286	0.208	0.312
Medina	121.21	6,837	0.829	0.746	0.912	0.663	0.994
Minneapolis	101.93	656,264	66.893	60.204	73.582	53.514	80.272
Minnetonka Beach	148.99	449	0.067	0.060	0.074	0.054	0.080
Minnetonka	113.58	73,365	8.333	7.500	9.166	6.666	9.999
Minnetrista	120.29	6,726	0.809	0.728	0.890	0.647	0.971
Mound	64.46	9,656	0.622	0.560	0.685	0.498	0.747
Mounds View	93.39	13,998	1.307	1.177	1.438	1.046	1.569
New Brighton	104.80	24,885	2.608	2.347	2.869	2.086	3.129
New Germany	59.47	817	0.049	0.044	0.053	0.039	0.058
New Prague	88.26	9,638	0.851	0.766	0.936	0.680	1.021
New Trier	72.77	154	0.011	0.010	0.012	0.009	0.013
Newport	82.97	6,605	0.548	0.493	0.603	0.438	0.658
North St. Paul	74.17	12,552	0.931	0.838	1.024	0.745	1.117
Norwood Young America	67.86	5,083	0.345	0.310	0.379	0.276	0.414
Oak Grove	83.36	118	0.010	0.009	0.011	0.008	0.012
Oak Park Heights	127.23	5,408	0.688	0.619	0.757	0.550	0.826
Oakdale	84.75	32,974	2.795	2.515	3.074	2.236	3.353
Orono	89.98	5,895	0.530	0.477	0.583	0.424	0.636
Prior Lake	68.30	36,976	2.525	2.273	2.778	2.020	3.031
Plymouth	105.43	89,566	9.443	8.498	10.387	7.554	11.331
Prior Lake	68.30	36,976	2.525	2.273	2.778	2.020	3.031
Ramsey	131.70	25,018	3.295	2.965	3.624	2.636	3.954
Randolph	167.42	565	0.095	0.085	0.104	0.076	0.114
Richfield	76.13	40,031	3.048	2.743	3.352	2.438	3.657
Robbinsdale	78.92	16,490	1.301	1.171	1.431	1.041	1.562
Rockford	80.55	4,579	0.369	0.332	0.406	0.295	0.443
Rogers	134.88	20,199	2.724	2.452	2.997	2.180	3.269
Rosemount	101.37	40,517	4.107	3.697	4.518	3.286	4.929
Savage	54.24	39,211	2.127	1.914	2.339	1.701	2.552
Shakopee Public Utilities	121.48	61,731	7.499	6.749	8.249	5.999	8.999
Shoreview	88.49	30,623	2.710	2.439	2.981	2.168	3.252
Shorewood	99.51	4,623	0.460	0.414	0.506	0.368	0.552
South St. Paul	111.45	21,603	2.408	2.167	2.648	1.926	2.889
Spring Lake Park	106.94	7,345	0.785	0.707	0.864	0.628	0.943
Spring Park	104.97	2,721	0.286	0.257	0.314	0.228	0.343
St. Anthony Village	86.61	10,314	0.893	0.804	0.983	0.715	1.072
St. Bonifacius	82.60	2,390	0.197	0.178	0.217	0.158	0.237

St. Francis	107.49	11,133	1.197	1.077	1.316	0.957	1.436
St. Louis Park	110.70	58,459	6.471	5.824	7.118	5.177	7.765
St. Paul Park	90.80	7,701	0.699	0.629	0.769	0.559	0.839
St. Paul Regional Water Services	91.49	519,437	47.522	42.770	52.274	38.018	57.027
Stillwater	100.35	24,282	2.437	2.193	2.680	1.949	2.924
Tonka Bay	96.42	1,970	0.190	0.171	0.209	0.152	0.228
Vadnais Heights	95.76	14,743	1.412	1.271	1.553	1.129	1.694
Vermillion	92.85	501	0.047	0.042	0.051	0.037	0.056
Victoria	109.26	15,780	1.724	1.552	1.896	1.379	2.069
Waconia	82.89	23,882	1.979	1.782	2.177	1.584	2.375
Watertown	66.92	7,591	0.508	0.457	0.559	0.406	0.610
Wayzata	158.44	6,931	1.098	0.988	1.208	0.879	1.318
White Bear Lake	86.90	27,521	2.392	2.152	2.631	1.913	2.870
White Bear Township	98.72	12,175	1.202	1.082	1.322	0.962	1.442
Woodbury	101.56	88,885	9.028	8.125	9.930	7.222	10.833
TOTAL		**3,563,556**	**359.160**	**323.244**	**395.076**		

Table 6.17: Version 1 2050 municipal community public water supply system projections, including estimated 10% and 20% higher and lower projections to reflect uncertainty due to potential shifts in population and industrial changes, changes in water efficiency, extreme weather patterns (wet and dry), and other variable conditions that could affect water demand. This information is expected to be updated periodically with community input.

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Appendix H – Priority Water List

Priority Lakes

Lake Name	DNR Lake ID	Primary Metro County	Metro Watershed Organization	Area (acres)	Qualified as a Drinking Water Source	Qualified for Recreation and Tourism	Qualified for Healthy Habitat	Qualified for Well-rounded
Amelia	02001400	Anoka	Vadnais Lake Area WMO	156.4	No	No	Yes	No
Ann	10001200	Carver	Riley-Purgatory-Bluff Creek WD	115.7	No	Yes	No	Yes
Auburn	10004400	Carver	Minnehaha Creek WD	290.6	No	Yes	No	No
Bald Eagle	62000200	Ramsey	Rice Creek WD	1049.1	Yes	Yes	No	No
Baldwin	02001300	Anoka	Rice Creek WD	181.6	No	No	Yes	Yes
Battle Creek	82009100	Washington	Ramsey-Washington Metro WD	105.7	No	Yes	No	Yes
Bde Maka Ska	27003100	Hennepin	Minnehaha Creek WD	423.9	No	Yes	No	Yes
Big Carnelian	82004900	Washington	Carnelian-Marine-St. Croix WD	457.0	No	No	Yes	No
Big Marine	82005200	Washington	Carnelian-Marine-St. Croix WD	1799.2	No	Yes	Yes	Yes
Black	62001900	Ramsey	Vadnais Lake Area WMO	10.9	No	No	Yes	No
Black Dog	19008300	Dakota	Lower Minnesota River WD	510.1	No	No	No	Yes
Blue	70008800	Scott	Lower Minnesota River WD	154.4	No	No	Yes	No
Bryant	27006700	Hennepin	Nine Mile Creek WD	179.9	No	Yes	No	Yes
Bush	27004700	Hennepin	Nine Mile Creek WD	171.0	No	Yes	No	No
Byllesby	19000600	Dakota	North Cannon River WMO	1368.3	No	Yes	Yes	Yes
Cedar	27003900	Hennepin	Minnehaha Creek WD	163.8	No	Yes	No	No
Cedar	70009100	Scott	Scott WMO	793.4	No	Yes	No	No
Centerville	02000600	Anoka	Rice Creek WD	473.9	Yes	Yes	No	Yes
Charley	62006200	Ramsey	Vadnais Lake Area WMO	37.1	Yes	No	No	No
Christmas	27013700	Hennepin	Minnehaha Creek WD	267.2	No	No	Yes	No
Chub	19002000	Dakota	North Cannon River WMO	228.0	No	No	Yes	No

Clear	82004500	Washington	Carnelian-Marine-St. Croix WD	41.7	No	No	Yes	No
Clear	82016300	Washington	Rice Creek WD	429.0	No	Yes	No	No
Cleary	70002200	Scott	Scott WMO	144.7	No	Yes	No	Yes
Como	62005500	Ramsey	Capitol Region WD	71.3	No	Yes	No	Yes
Coon	02004200	Anoka	Sunrise River WMO	1481.2	No	Yes	Yes	Yes
Crooked	02008400	Anoka	Coon Creek WD	114.9	No	Yes	No	Yes
Crystal	19002700	Dakota	Black Dog WMO	293.2	No	Yes	No	No
Crystal	27003400	Hennepin	Shingle Creek WMC	79.1	No	Yes	No	Yes
Deep	62001800	Ramsey	Vadnais Lake Area WMO	71.7	Yes	No	No	No
DeMontreville	82010100	Washington	Valley Branch WD	157.1	No	No	Yes	No
Eagle	10012100	Carver	Carver County WMO	183.2	No	Yes	No	No
Eagle	27011101	Hennepin	Shingle Creek WMC	296.2	No	Yes	No	Yes
East Twin	02002000	Anoka	Coon Creek WD	15.4	No	No	Yes	No
East Twin	02013300	Anoka	Upper Rum River WMO	92.0	No	Yes	Yes	Yes
East Vadnais	62003801	Ramsey	Vadnais Lake Area WMO	392.9	Yes	No	No	Yes
Elmo	82010600	Washington	Valley Branch WD	256.8	No	Yes	Yes	Yes
Empire	19034200	Dakota	Vermillion River Watershed JPO	21.0	No	No	Yes	No
Fish	02006500	Anoka	Upper Rum River WMO	334.3	No	No	Yes	Yes
Fish	27011800	Hennepin	Elm Creek WMC	237.7	No	Yes	No	No
Fish	70006900	Scott	Prior Lake-Spring Lake WD	175.9	No	Yes	No	No
Fisher	70008700	Scott	Lower Minnesota River WD	259.3	No	No	Yes	No
Forest	82015900	Washington	Comfort Lake Forest Lake WD	2270.9	No	Yes	Yes	No
French	27012700	Hennepin	Elm Creek WMC	216.2	No	No	Yes	Yes
George	02009100	Anoka	Upper Rum River WMO	488.6	No	Yes	Yes	Yes
George Watch	02000500	Anoka	Rice Creek WD	486.0	No	No	No	Yes
Gervais	62000700	Ramsey	Ramsey-Washington Metro WD	235.0	No	Yes	No	Yes
Golden	02004500	Anoka	Rice Creek WD	58.1	No	Yes	No	No
Gun Club	19007800	Dakota	Lower Minnesota River WD	341.7	No	No	Yes	Yes
Ham	02005300	Anoka	Coon Creek WD	154.6	No	Yes	Yes	Yes
Harriet	27001600	Hennepin	Minnehaha Creek WD	341.2	No	Yes	No	No
Hiawatha	27001800	Hennepin	Minnehaha Creek WD	52.9	No	Yes	No	No

Hickey	02009600	Anoka	Upper Rum River WMO	40.4	No	No	Yes	No
Howard	02001600	Anoka	Rice Creek WD	455.6	No	No	Yes	Yes
Hyland	27004800	Hennepin	Riley-Purgatory-Bluff Creek WD	83.9	No	Yes	No	Yes
Independence	27017600	Hennepin	Pioneer-Sarah Creek WMC	832.0	No	Yes	No	Yes
Island	02002200	Anoka	Sunrise River WMO	72.7	No	Yes	No	No
Island	62007500	Ramsey	Rice Creek WD	58.8	No	Yes	No	Yes
Jane	82010400	Washington	Valley Branch WD	158.1	No	No	Yes	No
Jensen	19007100	Dakota	Eagan-Inver Grove Heights WMO	52.3	No	Yes	No	No
Johanna	62007800	Ramsey	Rice Creek WD	211.9	No	Yes	No	Yes
Josephine	62005700	Ramsey	Rice Creek WD	116.2	No	Yes	No	Yes
Keller	62001002	Ramsey	Ramsey-Washington Metro WD	73.3	No	Yes	No	Yes
Kohlman	62000600	Ramsey	Ramsey-Washington Metro WD	84.1	No	No	No	Yes
Lac Lavon	19044600	Dakota	Black Dog WMO	65.9	No	Yes	No	No
Lake of the Isles	27004000	Hennepin	Minnehaha Creek WD	114.2	No	Yes	No	No
Legion	27002400	Hennepin	Minnehaha Creek WD	55.7	No	No	No	Yes
Lily	82002300	Washington	Middle St. Croix WMO	43.8	No	No	No	Yes
Linwood	02002600	Anoka	Sunrise River WMO	572.1	No	Yes	No	Yes
Little Carnelian	82001400	Washington	Carnelian-Marine-St. Croix WD	136.6	No	No	Yes	No
Little Coon	02003200	Anoka	Sunrise River WMO	86.0	No	No	Yes	No
Little Long	27017900	Hennepin	Pioneer-Sarah Creek WMC	69.5	No	No	Yes	Yes
Long	27016000	Hennepin	Minnehaha Creek WD	285.0	No	Yes	No	No
Long	62006700	Ramsey	Rice Creek WD	172.6	No	Yes	No	Yes
Long	82011800	Washington	Valley Branch WD	63.2	No	No	No	Yes
Lotus	10000600	Carver	Riley-Purgatory-Bluff Creek WD	245.1	No	Yes	No	No
Lower Prior	70002600	Scott	Prior Lake-Spring Lake WD	956.2	No	Yes	No	No
Marion	19002600	Dakota	Vermillion River Watershed JPO	530.3	No	Yes	No	Yes
Marshan	02000700	Anoka	Rice Creek WD	203.5	No	No	Yes	Yes
Martin	02003400	Anoka	Sunrise River WMO	232.3	No	Yes	No	No

Mays	82003300	Washington	Carnelian-Marine-St. Croix WD	40.2	No	No	Yes	No
McCarron	62005400	Ramsey	Capitol Region WD	73.3	No	Yes	No	Yes
McMahon	70005000	Scott	Scott WMO	186.6	No	Yes	No	No
Medicine	27010400	Hennepin	Bassett Creek WMC	924.4	No	Yes	No	Yes
Minnetonka	27013300	Hennepin	Minnehaha Creek WD	14205.6	No	Yes	Yes	Yes
Minnewashta	10000900	Carver	Minnehaha Creek WD	679.7	No	Yes	Yes	Yes
Mitchell	27007000	Hennepin	Riley-Purgatory-Bluff Creek WD	113.9	No	Yes	No	No
Mud	82016800	Washington	Rice Creek WD	178.9	No	No	Yes	Yes
Nokomis	27001900	Hennepin	Minnehaha Creek WD	201.2	No	Yes	No	No
Normandale	27104501	Hennepin	Nine Mile Creek WD	104.1	No	Yes	No	No
O'Dowd	70009500	Scott	Scott WMO	300.5	No	Yes	No	No
Olson	82010300	Washington	Valley Branch WD	87.1	No	No	Yes	No
Oneka	82014000	Washington	Rice Creek WD	358.0	No	No	Yes	Yes
Orchard	19003100	Dakota	Black Dog WMO	237.9	No	Yes	No	No
Otter	02000300	Anoka	Rice Creek WD	302.2	Yes	No	No	No
Owasso	62005600	Ramsey	Ramsey-Washington Metro WD	375.0	No	Yes	No	Yes
Parkers	27010700	Hennepin	Bassett Creek WMC	100.2	No	Yes	No	Yes
Peltier	02000400	Anoka	Rice Creek WD	551.9	Yes	Yes	No	Yes
Phalen	62001300	Ramsey	Ramsey-Washington Metro WD	197.7	No	Yes	No	Yes
Pickerel	02013000	Anoka	Upper Rum River WMO	238.4	No	No	Yes	Yes
Piersons	10005300	Carver	Minnehaha Creek WD	266.9	No	No	Yes	No
Pleasant	62004600	Ramsey	Vadnais Lake Area WMO	607.2	Yes	No	No	No
Quarry	70034300	Scott	Lower Minnesota River WD	70.1	No	Yes	No	No
Rebecca	19000300	Dakota	Vermillion River Watershed JPO	81.6	No	Yes	No	No
Rebecca	27019200	Hennepin	Pioneer-Sarah Creek WMC	263.3	No	Yes	No	Yes
Rice	02000800	Anoka	Rice Creek WD	371.2	No	No	Yes	Yes
Rice	70002500	Scott	Lower Minnesota River WD	115.8	No	No	Yes	No
Rice	82014600	Washington	Rice Creek WD	125.5	No	No	Yes	Yes
Riley	10000200	Carver	Riley-Purgatory-Bluff Creek WD	296.2	No	Yes	No	No

Rondeau	02001500	Anoka	Rice Creek WD	248.3	No	No	Yes	No
Round	02008900	Anoka	Lower Rum River WMO	256.2	No	No	No	Yes
Sarah	27019100	Hennepin	Pioneer-Sarah Creek WMC	557.2	No	Yes	No	No
Shady Oak	27008900	Hennepin	Nine Mile Creek WD	90.6	No	Yes	No	No
Silver	62000100	Ramsey	Valley Branch WD	76.0	No	Yes	No	No
Silver	62008300	Ramsey	Rice Creek WD	70.8	No	Yes	No	Yes
Snail	62007300	Ramsey	Ramsey-Washington Metro WD	158.4	No	Yes	No	Yes
Snelling	27000100	Hennepin	Lower Minnesota River WD	102.6	No	Yes	No	Yes
Spring	70005400	Scott	Prior Lake-Spring Lake WD	591.8	No	Yes	No	No
Spurzem	27014900	Hennepin	Pioneer-Sarah Creek WMC	81.9	No	No	No	Yes
Square	82004600	Washington	Carnelian-Marine-St. Croix WD	203.0	No	Yes	Yes	No
Staring	27007800	Hennepin	Riley-Purgatory-Bluff Creek WD	167.1	No	Yes	No	Yes
Steiger	10004500	Carver	Minnehaha Creek WD	165.9	No	Yes	No	No
Sucker	62002800	Ramsey	Vadnais Lake Area WMO	63.4	Yes	No	No	No
Susan	10001300	Carver	Riley-Purgatory-Bluff Creek WD	88.3	No	Yes	No	No
Swan	02009800	Anoka	Upper Rum River WMO	40.5	No	No	Yes	No
Tanners	82011500	Washington	Ramsey-Washington Metro WD	74.4	No	Yes	No	Yes
Terrapin	82003100	Washington	Carnelian-Marine-St. Croix WD	121.7	No	No	Yes	No
Tiger	10010800	Carver	Carver County WMO	405.9	No	No	Yes	Yes
Turtle	62006100	Ramsey	Rice Creek WD	450.0	No	Yes	Yes	Yes
Twin	27004200	Hennepin	Shingle Creek WMC	217.4	No	Yes	No	Yes
Upper Prior	70007200	Scott	Prior Lake-Spring Lake WD	386.3	No	Yes	No	No
Waconia	10005900	Carver	Carver County WMO	3080.4	No	Yes	No	Yes
Weaver	27011700	Hennepin	Elm Creek WMC	152.1	No	Yes	No	No
West Moore	02007502	Anoka	Rice Creek WD	67.8	No	No	No	Yes
West Vadnais	62003802	Ramsey	Vadnais Lake Area WMO	211.6	Yes	No	No	No
Westwood	27071100	Hennepin	Bassett Creek WMC	42.9	No	No	No	Yes

Whaletail	27018400	Hennepin	Pioneer-Sarah Creek WMC	510.0	No	Yes	No	No
White Bear	82016700	Washington	Rice Creek WD	2427.7	No	Yes	Yes	Yes
Wirth	27003700	Hennepin	Bassett Creek WMC	40.0	No	Yes	No	Yes
Wood	27002600	Hennepin	Richfield-Bloomington WMO	41.8	No	No	No	Yes
Zumbra-Sunny	10004100	Carver	Minnehaha Creek WD	271.1	No	Yes	No	No

Priority rivers and streams

River or Stream Name	River or Stream ID (DNR Kittle #)	Metro Counties	Metro Watershed Organizations	Length (miles)	Qualified as a Drinking Water Source	Qualified for Recreation and Tourism	Qualified for Healthy Habitat	Qualified for Well-rounded
Assumption Creek	M-055-017	Carver	Lower Minnesota River WD	2.8	No	No	Yes	No
Bass Creek	M-058-005	Hennepin	Shingle Creek WMC	3.4	No	No	No	Yes
Bassett Creek	M-057S2	Hennepin	Bassett Creek WMC, Mississippi WMO	12.7	No	Yes	No	No
Battle Creek	M-053	Washington, Ramsey	Ramsey-Washington Metro WD	7.5	No	Yes	No	Yes
Bluff Creek	M-055-014	Carver, Hennepin	Riley-Purgatory-Bluff Creek WD, Lower Minnesota River WD	10.1	No	No	Yes	No
Brown's Creek	M-050-012	Washington	Browns Creek WD	7.9	No	No	Yes	No
Cannon River	M-048	Dakota	North Cannon River WMO	118.3	No	Yes	No	No
Carver Creek	M-055-022	Carver	Carver County WMO, Lower Minnesota River WD	31.5	No	No	Yes	No
Cedar Creek	M-063-003	Anoka	Upper Rum River WMO, Lower Rum River WMO	25.6	No	No	Yes	No
Chub Creek	M-048-017	Dakota	North Cannon River WMO	24.7	No	No	Yes	No
Coon Creek	M-061	Anoka	Coon Creek WD	25.7	No	No	No	Yes
Credit River	M-055-007	Scott	Vermillion River Watershed JPO, Scott WMO, Lower Minnesota River WD	21.9	No	Yes	No	No

Crooked Brook	M-063-003-006	Anoka	Upper Rum River WMO	5.2	No	No	Yes	No
Crow River	M-064	Hennepin	Pioneer-Sarah Creek WMC, Elm Creek WMC	194.5	No	Yes	Yes	Yes
Crow River, South Fork	M-064-005	Carver, Hennepin	Carver County WMO, Pioneer-Sarah Creek WMC	124.9	No	Yes	No	Yes
Diamond Creek	M-062-003	Hennepin	Elm Creek WMC	6.3	No	No	No	Yes
Eagle Creek	M-055-009	Scott	Lower Minnesota River WD	2.2	No	No	Yes	No
Elm Creek	M-062	Hennepin	Elm Creek WMC	20.3	No	Yes	Yes	Yes
Fall's Creek	M-050-024	Washington	Carnelian-Marine-St. Croix WD	1.2	No	No	Yes	No
Kennaley's Creek	M-055-004-000.5	Dakota	Lower Minnesota River WD	1.0	No	No	Yes	No
Kohlman Creek	M-053.5-003	Ramsey	Ramsey-Washington Metro WD	3.7	No	No	No	Yes
Lambert Creek	M-053.5S1	Ramsey	Vadnais Lake Area WMO	4.3	No	Yes	No	No
Mill Stream	M-050-019	Washington	Carnelian-Marine-St. Croix WD	1.4	No	No	Yes	No
Minnehaha Creek	M-056S3	Hennepin	Minnehaha Creek WD	21.1	No	Yes	No	Yes
Minnesota River	M-055	Carver, Scott, Hennepin, Dakota, Ramsey	Carver County WMO, Scott WMO, Lower Minnesota River WD	344.0	No	Yes	Yes	Yes
Mississippi River	M	Anoka, Hennepin, Ramsey, Dakota, Washington	Lower Rum River WMO, Elm Creek WMC, Coon Creek WD, West Mississippi WMC, Rice Creek WD, Mississippi WMO, Shingle Creek WMC, Capitol Region WD, Lower Mississippi River WMO, Ramsey-Washington Metro WD, South Washington WD, Vermillion River Watershed JPO	664.1	Yes	Yes	Yes	Yes
Mud Creek	M-048-017-004	Dakota	North Cannon River WMO	7.1	No	No	Yes	No

Nine Mile Creek	M-055-005S2	Hennepin	Nine Mile Creek WD	8.6	No	No	No	Yes
Nine Mile Creek, North Fork	M-055-005S1	Hennepin	Nine Mile Creek WD	7.8	No	Yes	No	No
Nine Mile Creek, South Fork	M-055-005-001	Hennepin	Nine Mile Creek WD	9.5	No	Yes	No	No
Purgatory Creek	M-055-011	Hennepin	Riley-Purgatory-Bluff Creek WD, Lower Minnesota River WD	14.8	No	No	No	Yes
Rice Creek	M-059	Washington, Anoka, Ramsey	Rice Creek WD	29.4	No	Yes	No	Yes
Rum River	M-063	Anoka	Upper Rum River WMO, Lower Rum River WMO	153.5	No	Yes	Yes	Yes
Rush Creek	M-062-004	Hennepin	Elm Creek WMC	17.1	No	No	Yes	Yes
Seelye Brook	M-063-005	Anoka	Upper Rum River WMO	17.2	No	No	Yes	Yes
Shingle Creek	M-058S2	Hennepin	Shingle Creek WMC	11.2	No	Yes	No	Yes
Silver Creek	M-050-013	Washington	Carnelian-Marine-St. Croix WD	2.5	No	No	Yes	No
Springbrook Creek	M-060.5	Anoka	Coon Creek WD	4.0	No	Yes	No	Yes
St. Croix River	M-050	Washington	Carnelian-Marine-St. Croix WD, Middle St. Croix WMO, Valley Branch WD, South Washington WD	172.9	No	Yes	Yes	No
Sunrise River, West Branch	M-050-034-014	Anoka	Sunrise River WMO	17.3	No	No	Yes	No
Trott Brook	M-063-001.5	Anoka	Lower Rum River WMO	16.8	No	No	Yes	No
Trout Brook	M-048-007	Dakota	North Cannon River WMO	7.4	No	No	Yes	No
Trout Brook	M-050-005	Washington	South Washington WD	5.9	No	Yes	Yes	No
Valley Branch	M-050-007-002	Washington	Valley Branch WD	1.0	No	No	Yes	No
Valley Creek	M-050-007	Washington	Valley Branch WD	6.2	No	No	Yes	No
Vermillion River	M-049	Scott, Dakota	Vermillion River Watershed JPO	62.5	No	Yes	Yes	Yes
Vermillion River, South Branch	M-049-005	Dakota	Vermillion River Watershed JPO	11.8	No	No	Yes	No