METROPOLITAN COUNCIL
DRAFT CLIMATE ACTION WORK PLAN

METROPOLITAN
COUNCIL

September 2022

The Council's mission is to foster efficient and economic growth for a prosperous metropolitan region

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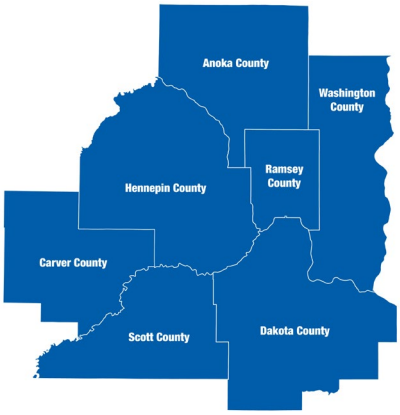

The Metropolitan Council is the regional planning organization for the seven-county Twin Cities area. The Met Council operates the regional bus and rail system, collects and treats wastewater, coordinates regional water resources, plans and helps fund regional parks, and administers federal funds that provide housing opportunities for low- and moderate-income individuals and families. The 17-member Met Council board is appointed by and serves at the pleasure of the governor.

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Metropolitan Council's role in addressing climate change

Like places everywhere around the globe, Minnesota's climate is changing. Everyone here will be affected, but especially elderly people, low-income households, and communities that have faced historical oppression and marginalization. We have a responsibility to do what we can to soften those impacts, reduce our contribution to climate change, and help the region become more resilient to the changes that are yet to come.

The Metropolitan Council is the regional policy-making body, planning agency, and provider of essential services in the seven-county Twin Cities metro region. We were established to foster efficient and economic growth for a prosperous region. Climate change presents us with challenges in carrying out that mission.

As conditions continue to change, our organization must innovate and adjust. We commit to the continued delivery and improvement of vital services and operations to our region despite such change. Given our planning responsibilities, and as one of the state's largest energy users and owners of the largest public vehicle fleet, we have significant opportunities to reduce emissions and improve resiliency across the region.

Call-out quote: "Climate change threatens the very things that make Minnesota a great place to live – from our wonderful lakes to farmable land and clean air," said Governor Tim Walz, when announcing the formation of his Climate Change Subcabinet in 2019. "We can only combat climate change if we do it together," said Lieutenant Governor Peggy Flanagan during the announcement.

This Climate Action Work Plan will unify our efforts across the Council over the next five years to reduce our climate impacts and prepare for a changing climate. It defines strategies and actions that will strengthen our ability to plan and deliver services to the region. Increasing our ambition and unifying our efforts must not wait, which is why this operational and functional services plan is being adopted now, before our next regional policy guide is created.

This plan does not include regional climate goals or policies; it is focused on our operations and how we do our work in the face of climate change. It focuses on reducing our emissions (mitigation) and adapting our facilities and services to be resilient in the face of climate change (adaptation). This plan directs changes to our operations, infrastructure maintenance and planning, research priorities and methods, service delivery, and stakeholder engagement.

In this plan we make five overarching commitments:

- Incorporate environmental justice principles as we plan, implement, and evaluate our climate action work
- Accelerate emissions reductions from our operations to achieve carbon neutrality
- Accelerate regional emissions reductions through existing and new partnerships
- Reduce risks and impacts of climate change hazards to our facilities and services
- Support and collaborate with partners to advance regional climate adaptation efforts

Our efforts will make a difference. It will take all of us to build a better future.

[Call-out with icon: Our Climate Action Work Plan builds on work we have already done to reduce our emissions and help communities become more resilient to climate change. Visit Climate Action - Metropolitan Council (metrocouncil.org).]

The need for climate action at all levels

Climate change is a global emergency that needs action at all levels of government and in every sector of our economy. In August 2021, the Intergovernmental Panel on Climate Change (IPCC) report issued a stark warning, stating that urgent reduction in greenhouse gas emissions is needed to ward off the most dramatic consequences of a warming climate.

Scientists are in consensus that global efforts to reduce greenhouse gas emissions must occur within this current decade to limit global temperatures to 1.5° Celsius warming above pre-industrial times, which would limit the likelihood of the exceeding tipping points that cause irreversible and compounding impacts across natural systems (IPCC, 2021). UN Secretary-General, António Guterres, called this a "code red for humanity," the most crisis-oriented language used by the IPCC to date (UNRIC, 2021).

In 2015, the world community – including the United States – adopted the Paris Climate Accords. These agreements set up a framework to reduce global greenhouse gas emissions to achieve the 1.5° Celsius warming limit. This target was selected to avoid the most dramatic climate consequence for people and ecosystems. It will require society to accelerate its efforts to reduce emissions and achieve carbon neutrality by 2050.

This ambitious 1.5° Celsius target is reflected in the work of the National Climate Taskforce, which adopted the following goals:

- Reducing U.S. emissions by at least 50% by 2030 compared to 2005 levels
- Attaining 100% carbon-free electricity in the U.S. by 2035
- Achieving net-zero emission by 2050 (The White House, 2021)

Recent federal action, including passage of the Bipartisan Infrastructure Act and the Inflation Reduction Act, puts the U.S. on a path to achieve greenhouse gas reductions of around 40% by 2030 (Jenkins, et al., 2022).

Climate action in Minnesota

Minnesota has a longstanding commitment to address the climate crisis. In 2007, the state enacted the bipartisan Next Generation Energy Act, which set statutory goals to reduce greenhouse gas emissions by 15% from 2005 levels by 2015, 30% by 2025, and 80% by 2050 (MPCA, 2021). Despite this early action, Minnesota missed its goal in 2015, and currently is not on track to meet future goals. Since 2005, statewide greenhouse gas emissions have declined just 8% (MN Climate Change Subcabinet, 2022).

A new push to address climate change at the state level

While the state may have fallen behind in it goals, work is underway to get Minnesota back on track. In 2019, Governor Walz directed cabinet agencies, including the Met Council, to identify policies to reduce emissions and build resiliency. Agencies worked cooperatively to produce the Minnesota Climate Action Framework. The framework advances the conversation with Minnesotans on the work we all must do to reduce greenhouse gas emissions and build resilient communities across our state.

[Insert sidebar framework vision for our state]

The Met Council recognizes the important role we play to help realize this vision. This Climate Action Work Plan aims to align with the state's framework and commitments. We are positioned to help reach

state goals both by reducing our own operations-related greenhouse gas emissions (as addressed in this plan) and by providing services that drive community-wide reductions, such as transit.

Local and corporate commitments

In Minnesota and elsewhere, private sector companies, local governments, and nongovernmental organizations are setting science-based targets that are aligned with the goals of the Paris Agreement. Science-based targets leverage greenhouse gas inventories to set actionable, measurable, and time-bound reduction goals. Together, all of these efforts are critical to accelerate reductions in greenhouse gas emissions and prevent the worst outcomes of climate change.

Our commitments to climate action

Focus on equity in our climate work

All residents in our region are affected by climate change, but we are not all impacted in the same way. Those who are already vulnerable due to a range of historical, social, and economic factors have less ability to prepare for, deal with, or recover from climate change impacts (Our Minnesota Climate, 2020). Some in our region have greater access to decision-making processes around climate change solutions. These, and other forms of inequity, can make our region less prosperous and less resilient for all.

To that end, the Met Council is committed to incorporating environmental justice principles as we implement and evaluate our climate action work. We will achieve this by developing and adopting an Environmental Justice Framework consisting of qualitative and quantitative assessment tools.

Through an environmental justice lens, climate action can help reverse the impacts of historic and current practices and work toward racial and economic equity, thereby building resilience.

Commitment 1: We will incorporate environmental justice principles as we plan, implement, and evaluate our climate action work.	
Strategy	**Why it is important**
Develop and adopt an Environmental Justice Framework consisting of qualitative and quantitative assessment tools.	Organizations should perform sustainability and climate work with a focus on equity because climate change will have the greatest effect on our most vulnerable residents. Therefore, we should focus our efforts on building resilience for and with our most vulnerable residents.

Reduce operational emissions

Nationwide, achieving a 50% reduction in CO2 emissions by 2030 from 2005 levels and cutting them to net-zero by 2050 (The White House, 2021) will require a transformation of how and where society uses energy, including:

- Significantly reducing the use of fossil fuels to produce electricity
- Moving from fossil fuels to noncarbonized energy sources for transportation and building heating systems
- Dramatically improving energy efficiency
- Expanding use of alternative fuels such as hydrogen and biomass
- Increasing energy conservation

To that end, the Met Council will accelerate efforts to reduce greenhouse gas emissions from our own operations with the goal of achieving carbon neutrality.

We will achieve this by strengthening and expanding our efforts to identify and pursue energy efficiency and electrification opportunities; finding ways to increase our purchase and generation of renewable energy; maximizing energy and resource recovery from our operations; transitioning our fleet to electric and alternative fuel vehicles; and better understanding and publicly reporting on our greenhouse gas emissions.

Commitment 2: We will accelerate emissions reductions from our operations to achieve carbon neutrality.	
Strategy	**Why it is important**
Adopt a holistic approach to energy management	Implementing opportunities to reduce energy consumption and decarbonize energy use requires a structured, disciplined, approach to measure, manage, and improve energy performance.
Make buildings and processes more energy efficient, and move towards electric energy sources rather than fossil fuel-based sources	Maximizing efficiency is crucial to counteracting increased costs and energy usage due to expanding services with regional growth. Electrified energy sources will have emission reduction impacts far into the future as the electric grid continues to decarbonize.
Purchase and generate renewable energy when cost-effective	Some aspects of our services cannot be fully decarbonized, requiring the purchase of renewable energy to offset emissions to reach carbon neutrality. This approach also decreases energy costs.
Transition Council fleets to electric and alternative fuel vehicles	Switching to electric and alternative fuels will reduce our reliance on fossil fuel consumption, improve regional air quality, and reduce greenhouse gas emissions.
Maximize energy and resource recovery opportunities	Continuing our efforts to recover clean water, nutrients, and energy from wastewater for beneficial use can help reduce both our own and the region's reliance on fossil fuel energy sources and build a circular economy.
Account and report greenhouse gas emissions	Quantifying and reporting greenhouse gas emissions demonstrates environmental leadership, helps identify reduction opportunities and track progress, and helps keep us accountable to our commitment to achieve carbon neutrality.
Investigate opportunities to mitigate greenhouse gas emissions with the highest global warming potential	Targeting the reduction of greenhouse gas emissions with the highest global warming potential will have the largest relative impact of reduction of overall emissions and limiting temperature rise.

Cultivate partnerships to accelerate emissions reductions across the region

The Council can undertake some of the emissions reduction work alone, but we can achieve far greater emissions reductions through partnering with other interested parties that work in or have responsibilities in particular sectors. For instance, shifting transportation modes to mass transit and nonmotorized travel will require collaboration across agencies and advocacy groups.

To that end, the Council is committed to cultivating new and existing partnerships to accelerate regional emissions reductions.

We will achieve this by promoting low-carbon forms of transportation; maximizing energy and resource recovery opportunities in our operations; accounting and reporting regional and operational greenhouse

gas emissions; and convening and partnering with regional stakeholders to expand climate engagement and collaboration.

Commitment 3: We will accelerate regional emissions reductions through existing and new partnerships.	
Strategy	**Why it is important**
Promote reduction of transportation-related emissions	Encouraging VMT reduction, electrification, and public transit use reduces the region's reliance on fossil fuel consumption, improves air quality, and reduces greenhouse gas emissions.
Convene and partner with regional stakeholders to expand climate engagement and collaboration related to greenhouse gas emissions.	Knowledge of best practices and opportunities to collaborate expand through conversation and convening with strategic partners.
Track and report greenhouse gas emissions	Quantifying and reporting greenhouse gas emissions demonstrates environmental leadership, helps identify reduction opportunities, and helps hold stakeholders accountable to their emission reduction commitments.
Maximize energy and resource recovery opportunities	Continuing our efforts to recover clean water, nutrients, and energy from wastewater for beneficial use can help reduce both our own and the region's reliance on fossil fuel energy sources and build a circular economy.

Reduce climate risks and build operational resiliency

The impacts of climate change are already affecting communities around the globe. In Minnesota, we are particularly at risk for extreme rainfall, warmer winters, and extreme heat (Minnesota State Climatology Office). Although the threats of each of these climate patterns are significant, we have solutions to lessen the impact.

Communities in the U.S. are learning how to adapt. Municipalities are improving community infrastructure, buildings, and landscapes to be resilient to increased rainfall and flooding. Cities where residents previously did not need air conditioning are creating cooling centers for vulnerable residents who have limited options. And communities are preparing for some of the ecological impacts of winters that do not reach typical cold temperatures.

This plan lays out a roadmap for the Met Council to adapt its operations and infrastructure to the impacts of climate change. We can strengthen our ability to anticipate risks like flooding, rainfall, extreme heat, and increased freeze-thaw cycles, ensuring that essential services continue to serve the region.

To that end, the Met Council is committed to identifying the risks and impact of climate change to our facilities and services.

We will achieve this by incorporating adaptation measures into facility and services planning, design, construction, operations, and maintenance; expanding staffing and training related to climate work; and identifying opportunities to install and maintain sustainable landscapes on Met Council property.

Commitment 4: We will reduce risks and impacts of climate change hazards to our facilities and services.	
Strategy	**Why it is important**
Incorporate adaptation measures into facility and services planning, design, construction, operations, and maintenance	Our infrastructure is not immune to impacts from climate hazards. We need to anticipate climate change impacts in our designs and operations to maintain our ability to provide critical services.
Identify opportunities to install and maintain sustainable landscapes on Met Council property	Sustainable, low-maintenance, climate-resilient landscapes are better able to respond to climate change impacts. They also conserve Met Council resources and enhance biodiversity.

Advance regional climate adaptation

For almost a decade now, the Met Council has provided technical assistance to communities to help them adapt to a changing climate. We will continue to collaborate with local communities to provide needs-based climate action tools to enhance community planning efforts and therefore enhance resilience.

To that end, the Met Council is committed to supporting and collaborating with partners to advance regional climate adaptation efforts.

We will achieve this by developing and expanding regional funding mechanisms for local climate adaptation efforts; convening and partnering with regional stakeholders to expand climate engagement and collaboration; promoting climate connections in regional planning, local plan reviews, and grant programs; monitoring and assessing water resources to identify climate threats; and providing and expanding technical assistance, tools, and data for regional and Met Council-specific decision-making.

Commitment 5: We will support and collaborate with partners to advance regional climate adaptation efforts.	
Strategy	**Why it is important**
Convene and partner with regional stakeholders to expand climate engagement and collaboration	Through meaningful engagement, the Met Council can learn from the experiences of other practitioners to both enhance our own adaptation efforts and to advance climate-related collaboration across the region.
Provide and expand technical assistance, tools, and data for regional and Met Council-specific decision-making	The Met Council provides technical assistance to communities throughout the region, and can expand the climate-related resources, tools, and data that will allow municipalities and the Met Council to improve our abilities to respond to climate change.
Develop new and expand existing regional funding mechanisms for local climate adaptation efforts	Partnerships are key; allow for better access to competitive funding, pooling of resources, and expertise to build resilience for the Met Council and local jurisdictions.

Promote climate connections in regional planning, local plan reviews, and grant programs	Documenting and tracking connections across programs and functions can help reduce duplication and ensure alignment in our efforts.
Monitor and assess water resources to identify climate threats	Ensuring that water quality assessments consider climate change allows us to anticipate issues and establish adaptation measures to reduce potential impacts.

Cross-cutting strategies that support all commitments – capacity building as lynchpin

Several of our strategies apply to more than one of the commitments. A key example is the strategy to expand staffing and training related to climate work. We recognize that the commitments in this work plan will require more resources, expertise, and dedicated staff time than we currently have. The plan's matrix of commitments, strategies, and actions identifies where additional capacity will be needed. A key part of implementation will be allocating existing resources and capturing new funding to realize the commitments in the plan.

Met Council greenhouse gas emissions

The Met Council started tracking operational emissions in 2008. Since that time, we have made notable progress in reducing emissions despite substantial growth in the scale of our operations. Overall, we have reduced our emissions by 13% between our 2005 baseline and 2019, which is equivalent to the annual energy use from about 5,756 homes (EPA, 2022).

The leading source of emissions is the Met Council's purchase of electricity to power our operational and administrative facilities, such as wastewater treatment plants, bus garages, light rail operations, and administrative offices. The Met Council has reduced emissions by 38% between our 2005 baseline and 2019. These reductions are a result of improvements in the energy efficiency of our operations, the addition of a steam turbine generator to produce electricity at the Metropolitan Wastewater Treatment Plant, and the expansion of renewable energy production by our utility partners.

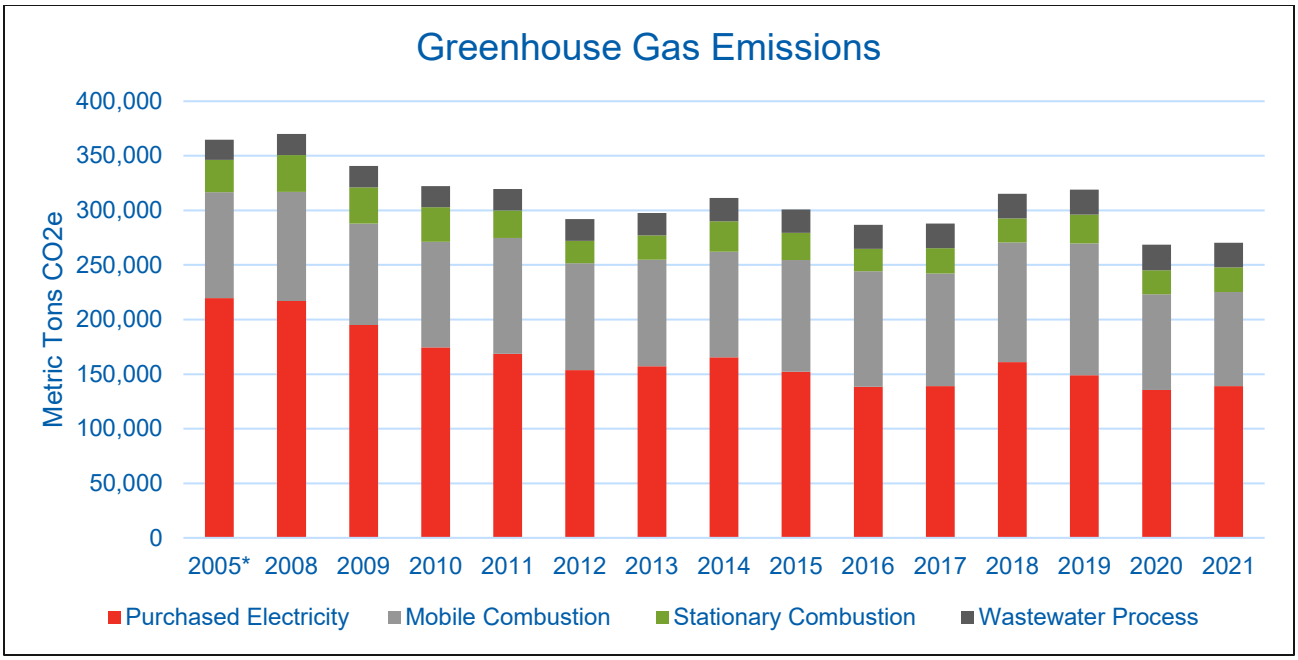
Met Council services at a glance *(graphic sidebar)*:

- Wastewater collection and treatment
  - 2.7 million residents served
  - 250 million gallons of wastewater treated daily
  - 637 miles of regional sanitary sewers
  - 229 metering stations
  - 60 lift stations
  - 9 wastewater treatment facilities
  - Approximately 900 industrial permittees monitored to prevent pollutants in the wastewater system
  - 167 lakes, 19 metro-area tributary streams, and 15 sites on the Minnesota, Mississippi, Crow, and St. Croix rivers monitored for water quality
- Transportation*
  - 78 million fixed-route annual trips
  - 30 million fixed-route annual miles
  - 122 bus, 2 light rail, 1 commuter rail routes
  - 2.3 million on-demand annual trips (Metro Mobility and Transit Link)
  - 24 million on-demand annual miles
- Housing
  - More than 7,200 households assisted through the federal and state rent assistance programs
  - 153 housing units owned

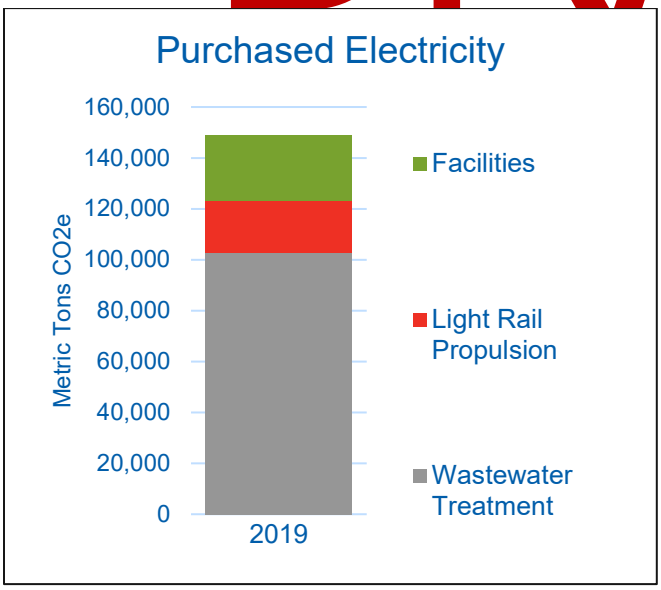
*Numbers represent pre-pandemic service

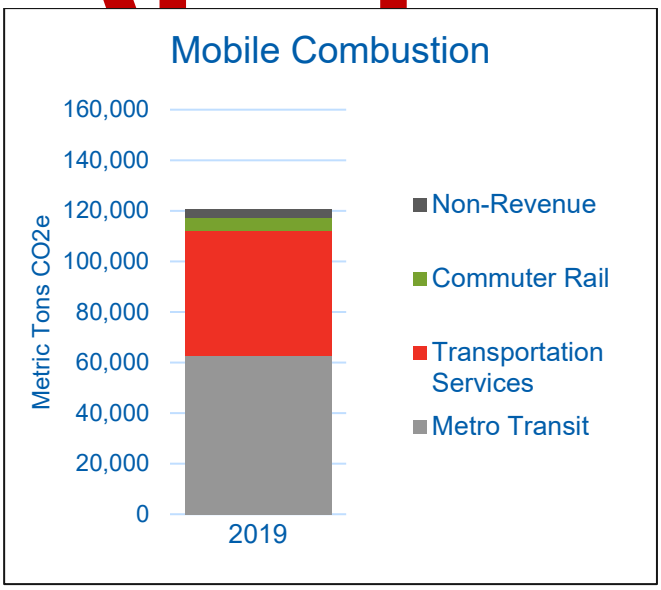
The next largest source of emissions is the combustion of fossil fuels to power the Council's various vehicle fleets, including Metro Transit and Metro Mobility buses. Other sources of mobile combustion emissions come from the operation of nonrevenue vehicles such as maintenance vehicles and other fleet equipment. Mobile combustion emissions rose by 21% between our 2005 baseline and 2019, largely due to an expansion of service.

The third largest source of Council emissions is from the stationary combustion of fuels to heat our buildings and facilities as well as from the incineration of biosolids. Stationary combustion emissions fell by 11% between our 2005 baseline and 2019. The gains in this category largely stem from improvements to building heating and ventilation systems.



While the Council's total emissions represent only a fraction of the total emissions in the state, we represent the largest emitter of greenhouse gases across state agencies (MN Department of Administration, 2020). Met Council's emissions account for roughly half of Minnesota state agency emissions, indicating that we still have a duty to lead by example and accelerate our emissions reduction efforts. The Met Council will play an outsized role in helping meet state agency greenhouse gas emission reduction goals, which demonstrates our commitment to environmental leadership and helps drive innovation throughout the state.





Climate change impacts our region and operations

There is clear evidence of climate change within our region today, and we expect climate impacts to increase and intensify. Vulnerable populations, natural systems, and some types of infrastructure are most likely to be affected. This will continue to be the case even as we reduce emissions and commit to adapting to these impacts.

Temperatures are rising, and precipitation patterns are changing. Each of the top 10 combined warmest and wettest years on record in Minnesota occurred between 1998 and 2020. The Met Council's "Regional Climate Vulnerability Assessment" (2018) identifies the region's top climate hazards as warming winters, extreme rainfall, heat waves, drought, and intense storms. These risks are expected to amplify both direct and indirect consequences to people, infrastructure, and ecosystems.

[Possible table for this section:]

Hazard	**Trend**	**Direct Impact**	**Indirect Impacts**
Heavy rain events	• More frequent and severe extreme precipitation events	• Health concerns: water-borne and mosquito-borne illnesses, drownings • Erosion and stormwater and pollution runoff • Public infrastructure and private property damage • Localized flooding • Declining water quality • Receding flood waters create higher risk for mold growth and low air quality	• Transportation disruption • Economic loss • Public and mental health impacts • Change in long-term water supply availability
Extreme heat	• More frequent and severe extreme heat events • Winters warming faster than summers	• Health concerns: heat stress, dehydration, cardiovascular health • Increased water pumping • Increased well interference and mitigation costs • Infrastructure damage • Increased wildfire danger	• Increased water pumping • More energy usage • Transportation disruption • Economic loss • Mental health impacts • Lowered groundwater recharge and change in long-term water supply availability
Disrupted growing seasons	• Shifted and changing growing seasons due to extreme heat and precipitation changes	• Harmful blue-green algae blooms • Increased spread of pathogens and parasites • Decrease in the abundance of cold- water fish and aquatic life • Increased spread of aquatic invasive species	• Difficulties in landscape maintenance • Species/ecosystem collapse • Economic loss • Decreased food security and access
Freeze-thaw cycles	• Increased number of freeze-thaw cycles • More frequent and severe ice events	• Hazardous driving conditions • Infrastructure damage • Detrimental impact on plant and animal life due to chloride toxicity	• Increased chloride use impacts water quality • Transportation disruption • Mental health impacts

Rise in temperatures

Our winters are warming faster than our summers. In the last 50 years, average daily winter low temperatures have risen more than 15 times faster than average daily summer high temperatures. The winter average daily low temperatures have risen from -2° F to 2° F (MN Deperartment of Natural Resources, 2018).

As winter temperatures rise, so will the number of freeze-thaw cycles. More frequent and severe ice events will follow, causing hazardous driving conditions, more falls, and degraded infrastructure (especially roadways and sidewalks). Increased salting to mitigate ice will increase operational costs, material degeneration, soil degradation, and the amount of chloride entering downstream waterbodies (Hennepin County, 2021).

Story/photo: Warming temperatures here in Minnesota have the potential for create more freeze/thaw cycles through the winter and early spring. These cycles can be hard on streets and highways, creating more potholes.

Another implication of more melting and freezing is a potential increase in the use of salt on roads and sidewalks to keep them easily passable. But this salt eventually runs off into area lakes, rivers, and streams, creating a pollutant that is in the environment permanently. A recent Met Council study shows that chloride levels increased between 1999 and 2019 in nearly all 18 streams that were studied in the seven-county metro area, some at alarming levels.

Statewide, 41% of all chloride in lakes, streams, and rivers comes from de-icing salt. Stabilizing chloride levels will be critical to maintain water quality and ecosystem health for our highly valued waters.

More high frequency and intense rains events

Rain events that drop heavy precipitation in a short period are becoming more common in our region. Long-term observations have seen a dramatic increase in major 1-inch to 3-inch rainstorms in Minnesota and are projected to keep increasing (MN Deperartment of Natural Resources, 2018).

Significant disruptions in transportation and wastewater services are expected to occur during times of flooding from intense rainfall. More rainstorms lead to more erosion and rainwater runoff. Excess rainwater can pick up a wide range of pollutants that enter stormwater systems and water bodies, increasing cost burdens and eroding trust in service providers. Transportation operations may become more dangerous as viability, traction, and maneuverability decline during intense rainfall. Flooding in low-lying areas may mean that transit operators must detour, disrupting scheduled service and reliability.

Aging and under-designed systems can stress infrastructure further during rainstorms. Our sewer system infrastructure is particularly at risk, as 40% to 65% of Hennepin and Ramsey counties' total sewer system miles are over 50 years old (MN Department of Public Safety, 2019). These vulnerabilities will become more worrisome as extreme precipitation events increase in frequency and severity, leading to issues with inflow and infiltration into the regional wastewater system.

Story w/ photo: In response to persistent flooding, the Met Council's Environmental Services division is planning to relocate a large sewer interceptor that runs north from I-694 to the east of Grass Lake to Gramsie Road in Shoreview.

Where the pipe was once 30 feet from the shore of Grass Lake and accessible via several maintenance structures, some of those are now under 1 to 5 feet of water during significant periods of the year. Without being able to access the pipe, debris can accumulate and cause wastewater backups. Construction of the new pipe is expected to begin in 2023.

More extreme heat and drought events

Minnesota will see more extreme heat days and drought events. The number of days with a heat index of over 100 degrees F in Minneapolis could increase to 20 by the middle of the century, and over 40 by the end of the century. Periods of extreme heat are particularly concerning for the Twin Cities region, which typically sees more heat events per year than the rest of the state. Temperatures can differ by over 10°F across neighborhoods within Minneapolis, for example. These temperature disparities align with formerly redlined and disinvested areas (Borunda, 2020).

Extreme heat can make it uncomfortable or unsafe for transit riders and operators to be outside and, over time, can lead to more rapid degradation of roadways, vehicles, rail, and additional transit infrastructure, increasing maintenance time and costs.

Like our transportation system, impacts to services and utility operations will occur within our wastewater and water systems. Water demand rises during periods of extreme heat and drought, stressing water resources. Groundwater levels decline, stream and river levels can drop, and shorelines increasingly become vulnerable to erosion.

Warm periods lead to increased evaporation, declines in oxygen levels, and concentrating of in-stream/in-lake pollutants. Algal blooms and fish kills become more prevalent as the waters become less inhabitable. Warming water will greatly influence fish populations – with stresses and reductions in popular, cold sensitive gamefish like walleye, cisco, and trout. The disruption will provide additional avenues for invasive species to have a larger impact on the aquatic ecosystems.

Increased pumping occurs to supply water to the drinking water supply system, requiring more energy use and more treatment, increasing costs, and lowering efficiency. Water supply treatment and distribution systems are built to cope with these stresses; however, climate-driven heat events can impose extreme shocks that test those systems.

Story/photo: Extreme heat can disrupt transit reliability. High temperatures cause rail tracks to bend and may require trains to operate at lower speeds to avoid derailment.

In June of 2022, as temperatures hit a record 101°F in the Twin Cities, the heat caused portions of the track for the METRO Blue Line to expand. In one area near the Terminal 2 station, the track expanded to such a degree that it began to lift off the ground. Metro Transit crews arrived on the scene and were able to reset the track over several hours. In the meantime, trains ran on a single line.

This instance shows the significant effects of extreme heat on transit – not only did heat disrupt physical infrastructure, causing a potential for service disruption, but it also meant that staff needed to be working outdoors in high temperatures.

Disrupted growing seasons

Climate change is expected to negatively impact species' growing conditions, threatening biodiversity and the integrity of ecosystems. Warmer and wetter conditions can increase the spread of pathogens and parasites, such as the West Nile Virus from mosquitos and Lyme disease from ticks, a threat to people visiting regional parks.

Invasive species populations are expected to rise, leading to massive tree loss, decreased water quality, loss of wildlife and habitat, and increase in emissions from loss of ecosystem carbon sequestration. Public green space maintenance will become more difficult and expensive as we replace dying trees and fight invasive species. Harmful blue-green algae blooms flourish under warmer summer temperatures and heat events, impacting our wastewater treatment plant operations (Minnesota Department of Health, 2015).

Story/photo: Regional park lovers who visited the Met Council's Future Forest Art Shanty in January and February 2020 wrote a short love letter to their favorite regional park. For every five visitors who wrote a letter, the Mississippi Park Connection donated another tree to be planted at Crosby Farm Regional Park in Saint Paul.

At Crosby, Mississippi Park Connection joined with partners to test tree species that are adapted to future climates. In 2020, more than 200 volunteers helped install 24 test plots and plant more than 1,000 test trees. The plots were strategically placed in gaps in the tree canopy created by removal of trees killed by emerald ash borer. This two-decade project is part of a national network of research designed to provide land managers with information they can use to care for forests.

Climate risk and equity

Historic policies and practices and systemic behaviors have contributed to wide disparities in income, health, wealth, education, and other measures among various demographic groups. These disparities are especially stark between middle- and upper-income households and low-income households; between white households and Black, Indigenous, and households of color; and among certain immigrant groups. Among the most well-known of these practices are redlining and racial covenants, which had distinct but overlapping impacts on the previously mentioned communities. The legacy of these practices continues to harm these communities.

Redlining made it difficult for people of color to get loans to purchase homes and build intergenerational wealth. It lowered property values, making land more affordable to speculative development. Formerly redlined areas tend to have lower air quality and resulting poor health effects, and also often have less tree cover than wealthier neighborhoods. Lack of tree cover can lead to measurably hotter temperatures and reduced air quality in the summer. These and other factors create barriers to preparing for, dealing with, and recovering from climate change impacts. They also lead to a region that is less prosperous and less resilient for everyone.

Met Council staff decided to use this Climate Action Work Plan as a platform to develop a draft Environmental Justice Framework and assessment tools to evaluate the impact of our climate-related work on historically marginalized communities. By incorporating climate equity and environmental justice into the plan, our climate actions can help mitigate the impacts of these past practices and work toward racial and economic equity, thereby building resilience.

A focus on equity and environmental justice also seeks to ensure the conscious distribution of the costs and benefits associated with the actions within this plan. We acknowledge that as we begin to implement the plan, we need to create opportunities for meaningful participation that recognizes past and current environmental harms for many residents.

The Met Council is committed to further developing the draft Environmental Justice Framework, in partnership with low-income communities and communities of color, particularly Black and Indigenous residents, across our region over the next few years. Our goal is to integrate environmental justice more deeply and meaningfully into all the work the Met Council does.

Environmental Justice Assessment

An internal environmental justice task force developed a draft Environmental Justice Assessment with input from environmental justice practitioners. The assessment used quantitative and qualitative methods to identify strengths and gaps in the Climate Action Work Plan's approach to environmental justice. The assessment evaluated how the plan addresses the following key environmental justice themes:

- Health
    - Does the plan improve health (physical and mental) outcomes for historically and presently overburdened communities, which include low-income communities and Black, Indigenous, and communities of color?
    - Does the plan uphold the fundamental human right to clean, healthy and adequate air, water, land, transportation, and housing?
- Affordability and economic stability
    - Does the plan lower and stabilize costs related to basic living needs (transportation, housing, utilities, etc.) for low-income communities and Black, Indigenous, and communities of color?

    - Does the plan ensure economic justice so that low-income, Black, Indigenous, and communities of color are prioritized in the benefits of the plan and are protected from any potential negative consequences?
- Community values, engagement, and cultural preservation
    - Does the plan elevate the voices of low-income communities and Black, Indigenous, and communities of color by strengthening resources and respecting the skills and abilities that a community needs to survive, adapt, and thrive?
    - Does the plan deliberately and respectfully honor cultural relevance and history to maintain cultural heritage from the past and present for the benefit of all generations? (Paying particular attention to self-told narratives from Black, Indigenous and Communities of Color).
- Accountability
    - Does the plan ensure that governments are accountable for their actions and listen and learn from low-income, Black, Indigenous, and communities of color?
- Climate adaptation
    - Does the plan include strategies that enhance the ability of low-income communities and Black, Indigenous, and communities of color to adapt to the impacts of climate change?
    - This theme also considers the cumulative impacts on communities that are affected by multiple ongoing climate and health-related issues.
- Land stewardship and Indigenous relations
    - Does the plan include strategies that ensure holistic land stewardship, acknowledging the inherent value of the natural world as well as the land's role in nourishing the human community?
    - Does the plan recognize the critical relationship between indigenous peoples and the natural world, as well as the sovereign status of tribal nations?
- Access to community resources
    - Does the plan consider access to jobs, housing, transportation, funding, education, healthy foods, and a clean environment for low-income communities and Black, Indigenous communities of color, and people of various abilities/disabilities?
    - Does the plan remove barriers through infrastructure, policy, and investments?

After conducting the assessment, the internal task force recommended changes to improve the Climate Action Work Plan, and the plan team incorporated the recommendations. This plan reflects the changes recommended by the task force. In addition, the Environmental Justice Task Force recommended subsequent environmental justice work to be done after the Met Council approves the Climate Action Work Plan.

Environmental justice work in the next few years

The Met Council commits to reflecting on what we learned in the development and implementation of the draft assessment and its implications for subsequent environmental justice work. We will develop resources and guidance to deepen environmental justice work at the Met Council.

[Sidebar callout]
The Council participated in the development of the State's Climate Action Framework concurrent with the development of the Council's Climate Action Plan. The Council follows the state's lead described in the Minnesota Climate Action Framework, which notes, "Climate change directly impacts tribal nations and communities, their members, and their lifeways. As the State of Minnesota works toward solutions to limit the impacts of climate change, these solutions must include the knowledge and voices of tribal nations." The Council will continue to pursue this work across our five divisions, both within and beyond the scope of the Climate Action Work Plan.

Evaluation of the Climate Action Work Plan

Climate team members will use the following milestones to evaluate the Climate Action Work Plan and track implementation progress. Because the work plan is a new effort for the Met Council, an evaluation will allow staff to reflect on lessons learned from the process and make recommendations for areas of strength and areas of improvement.

The work plan has a three- to five-year time frame and will need to be renewed on a regular basis. An evaluation process will help the team understand how to best proceed when renewing the work plan. In addition, an evaluation and reporting timeline provides accountability, both internally among leadership and staff, and externally to Met Council stakeholders and partners.

Quarterly reporting timeline:

- Quarter 2, 2023: Status report on action implementation. Identify gaps in ability to implement short-term (year 1) actions.
- Quarter 3, 2023: Review medium-term (years 1-3) actions. Prepare to implement and identify any barriers to implementation.
- Quarter 4, 2023: Develop work plans for medium-term actions as needed.
- Quarter 4, 2023: Annual Climate Action Work Plan status report to Met Council. Were short-term (year 1) actions implemented? What were the gaps and sticking points? Have any priorities changed? Was anything missed?

Plan structure: Commitments, strategies, and actions

The Climate Action Work Plan includes high-level commitments that Met Council members and staff established in 2022. This plan is an objective-based framework. This approach will ensure a focus on outcomes and that the work will be cross-divisional and interdisciplinary. The strategies and actions support the overarching commitments of the plan, and the defined actions support each strategy.

The plan's implementation matrix links actions to the responsible divisions; includes timelines; and considers capacity, funding, and evaluation.

Commitments: Directional statements that describe the desired end states for climate action in our operations and planning services.

- *Mitigation:* Strategies focus on minimizing contributions to climate change through efficiency measures and reducing greenhouse gas emissions.
- *Adaptation:* Strategies focus on how to change policies and practices to adjust to ongoing and future impacts of climate change.

Strategies: Overarching tactics to achieve commitments. The strategies are often cross-divisional in nature.

Actions: Specific actions and projects with defined timelines, outcomes, and divisional responsibilities.

Action implementation definitions

Each action within the Climate Action Work Plan matrix includes assessments of anticipated timeframes, funding, staff capacity, and other implementation guidelines. Definitions of each category are provided below.

Met Council role

These four categories provide a guide for how the Met Council will participate in fulfilling each action.

Convene	The Met Council plays primary role in convening conversation around the issue.
Advise	The Met Council provides technical support to others to aid in implementing their own climate-related actions.
Influence	Actions the Met Council takes to support others in their climate-related actions and encourage others to do.
Implement	Actions the Met Council will instigate and complete.

Continuation of existing work

Some actions in the Climate Action Work Plan are brand new efforts for the Met Council, while others are continuations of existing efforts. This column flags each action's status as new or existing work.

New work:	A new initiative or project
Enhancement of existing work:	Expansion of existing initiative or project
Status quo:	Continuation of existing work at same level

Division lead
The division(s) with primary responsibility for leading the action.

Division affected
The division(s) impacted by the action; not the project or action leads, but they are involved in successful action implementation.

Start date
When the action will be initiated.

End date
The goal of when the action will be completed and/or implemented

Personnel
This relates to staff expertise (skills, knowledge, etc.) and capacity (availability and responsibility – in someone's work plan)

Fully Staffed	Staffing expertise and capacity fully committed to action
Needs staffing commitment	Staffing expertise exists but capacity unavailable (not in the person's work plan). Work has not been assigned to existing staff
Need additional staffing	No expertise or capacity on staff to carry out action. Requires additional FTE

Funding
This relates to financial resources required to carry out the action. Examples might include funding available for consulting services, technology, capital investment, etc.

Fully funded	Financial resources exist and are either within currently approved Met Council budget or are/can be a regular part of existing staff work plans
Partially funded	Some financial resources available but not sufficient to fully carry out the action
Not currently funded	No financial resources dedicated to effort
No funding needed	No financial resources required

Prioritization
1. Straightforward (High impact, low difficulty): Actions that are easier to accomplish and of a high impact. Should be a high priority for implementation.
2. Major Projects (High impact, high difficulty): Actions that are difficult to accomplish but of a high impact. Worth doing but may take more time to implement and should be prioritized carefully.
3. Fill-Ins (Low impact, low difficulty): Actions that are easy to accomplish but of a low impact. Low priority but could be worthwhile.

Glossary of terms

Adaptation strategies focus on how to change policies and practices to adjust to ongoing and future impacts of climate change.

Environmental justice aims to improve environmental outcomes for Black and Indigenous households, communities of color, and people with low incomes who have been disproportionately harmed by environmental racism, pollution, and climate change impacts. Environmental justice seeks to address these issues through equitable and intentional engagement, thoughtful policy creation, and public service delivery that is focused on improving environmental conditions and enhancing climate resilience.

Environmental justice communities refers to communities who are overburdened by environmental justice concerns, including low-income communities and Black, Indigenous, and people of color communities.

Environmental racism "refers to any policy, practice, or directive that differentially affects or disadvantages (whether intended or unintended) individuals, groups or communities based on color. It also includes exclusionary and restrictive practices that limit participation by people of color in decisions-making boards, commissions, and regulatory bodies."[1] Environmental justice is in part a direct response to environmental racism.

Equity connects all residents to opportunity and creates viable housing, transportation, and recreation options for people of all races, ethnicities, incomes, and abilities so that all communities share the opportunities and challenges of growth and change. For our region to reach its full economic potential, all our residents must be able to access opportunity. Our region is stronger when all people live in communities that provide them access to opportunities for success, prosperity, and quality of life (Metropolitan Council, 2014).

Mitigation strategies focus on minimizing contributions to climate change through efficiency measures and reducing greenhouse gas emissions.

Racial equity is the process of eliminating racial disparities and improving outcomes for everyone. It is the intentional and continual practice of changing policies, practices, systems, and structures by prioritizing measurable change in the lives of people of color.

Regional partners is used as a term to refer to the Met Council's partners and stakeholders. This includes, but is not limited to: municipal governments, state agencies, federally recognized Tribes and non-federally recognized indigenous communities, watershed organizations, community members, and nonprofit organizations. Action 1.1.3 addresses this further.

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[1] Bullard, Robert D. "The Threat of Environmental Racism." *Natural Resources & Environment,* vol. 7, no. 3, 1993, pp. 23-26. *JSTOR,* http://www.jstor.org/stable/40923229

Resilience is an outcome of good mitigation and adaptation strategies. Resilience recognizes the difficulty of predicting impacts of climate change and emphasizes increasing our flexibility to survive and thrive regardless of how climate change develops. Resilience also includes the need for behavioral and organizational change to quickly pivot or reassess our priorities as conditions change.

Sustainability means protecting our regional vitality for generations to come by preserving our capacity to maintain and support our region's well-being and productivity over the long term. The region's investments in prosperity, equity, and livability will fall short over the long term if the region exhausts its resources without investing in the future (Metropolitan Council, 2014).

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