

Title:	Authorization to Contract with Background Stories for Design and Layout of the Climate Action Framework
Resolution number:	22-029
Prepared by:	Name: Kate Moran Phone: 952-641-4520 kmoran@minnehahacreek.org
Reviewed by:	Name/Title: Becky Christopher, Policy Planning Manager
Recommended action:	Approval to contract with Background Stories to design and layout the Climate Action Framework
Budget considerations:	Fund name and code: Planning and Projects 2-2002 (Policy Planning line item) Fund budget: \$1,226,937 (\$30,000) Expenditures to date: \$267,200 (\$0) Requested amount of funding: Not to Exceed \$10,500

Summary:

Since December 2021, the Board of Managers of the Minnehaha Creek Watershed District (District or MCWD) have been engaged in a series of climate discussions to set direction and provide guidance on refining MCWD's Climate Action Framework (CAF). The purpose of the CAF is to frame MCWD's climate strategy and outline near-term actions over the next five years.

As MCWD prepares to externally share its CAF with its partners, it is important to have a CAF document that is userfriendly and graphically appealing to invite our partners in to consider how we can work together on climate action. Therefore, MCWD staff recommend authorizing a contract for the design and layout of the final CAF document to be shared externally with partners.

Climate Action Framework

MCWD recognized the need for a clear strategy to guide how we will respond to climate challenges within the watershed in coordination with the State of Minnesota, regional partners, and local communities' climate action work. Given the scope, scale, and complexity of this challenge, MCWD initiated a multi-year planning effort to develop its CAF. Since 2019, MCWD's staff, Citizens Advisory Committee (CAC), and Board of Managers informed the development of the CAF through a planning process to understand:

- What's Happening Climate Science
- What Are the Impacts Threats and Vulnerabilities to the Region
- What's Being Done Scan of Climate Governance and MCWD's Climate Work
- What is MCWD's Role MCWD's Climate Action

The outcome of this work was the development of a CAF comprised of three pillars: (1) Understand and Predict; (2) Convene and Plan; and (3) Implement, Measure and Adapt. MCWD's CAF is the first step as the District works towards integrating climate action as a central focus of the 2027-2037 Watershed Management Plan. Refer to Attachment 1 for the CAF text that has been developed based on Board, CAC, and staff input and vetted by the District Engineer and Legal Counsel. This text will be used to develop the final design and layout of the CAF publication. District staff are seeking the Board of Managers' acceptance of the climate strategy and near-term actions.

Background Stories

MCWD has contracted with Background Stories on other recent publications, including the Lake Nokomis Area Groundwater & Surface Water Evaluation <u>At-A-Glance-Overview</u> and its Land and Water Partnership Initiative Kickoff Publication (i.e., 2022 Stakeholder Engagement Process). Background Stories is well qualified for the creative direction guidance, design, layout, and project management of MCWD's CAF. Background Stories is a Minneapolis-based company that provides information visualization and visual storytelling for environmental and social topics, such as climate change. The company's portfolio ranges from Intergovernmental Panel on Climate Change (IPCC) publications to development of graphics and visual stories to engage residents around the City of Minneapolis' 2040 Comprehensive Plan. Based on District staff's evaluation of Background Stories' niche publication work around climate and its local knowledge of this region, staff identified Background Stories as uniquely suited to work collaboratively with MCWD staff to finalize a graphically-rich CAF publication that will be shared with our external partners.

District staff obtained a proposal from Background Stories that provides two options: (1) 6-month retainer with a not to exceed of \$15,000 and (2) hourly pricing with a blended rate of \$150 per hour with the assumption of 45-60 hours of work and a one-time cost of \$1,500 for "Transfer of Design Files" to allow MCWD's staff to edit and use as a template for future work. Based on staff's evaluation of the CAF publication timeline and design needs, MCWD staff recommend the hourly rate option with a not to exceed amount of \$10,500.

April 28, 2022 Board of Managers Meeting.

At the Board meeting, MCWD staff will review work completed to-date that informed the development of the CAF and its near-term actions. To provide additional context for MCWD's CAF, staff will provide an overview of the 2022 <u>State</u> <u>Draft Climate Action Framework</u>, 2021 <u>Hennepin County Climate Action Plan</u>, and Met Council's climate planning efforts. Staff shared these documents with the Board by email on Tuesday, March 1.

Staff will provide a brief overview of the structure of the CAF (see Attachment 1) and take any Board of Managers' feedback on the framing of MCWD's climate strategy and near-term actions. Finally, staff will review Attachment 2, Background Stories proposal, for the Board of Managers' consideration.

Staff Recommendation

District staff request that the Board of Managers review and accept the draft CAF and authorize the District Administrator to enter into a contract with Background Stories to provide final design and layout of the CAF publication for an amount not to exceed \$10,500. If authorized, MCWD staff will return to the Board of Managers with the final CAF publication for formal adoption in third quarter of 2022, along with a process for sharing externally with partners in preparation for climate engagement in 2023.

Supporting documents:

- Attachment 1: MCWD Draft Climate Action Framework (CAF) text
- Attachment 2: Background Stories Proposal



RESOLUTION

Resolution number: 22-029

Title: Authorization to Contract with Background Stories for Design and Layout of the Climate Action Framework

WHEREAS, the Minnehaha Creek Watershed District (District) mission is to collaborate with public and private partners to protect and improve land and water for current and future generations; and WHEREAS, in 2014, the District adopted the Balanced Urban Ecology Policy to guide future planning initiatives to work in partnership to protect and improve the natural and built environments; and WHEREAS, the District's region is already experiencing climate change impacts, including the 2014 flood of record and the wettest decade on record; and WHEREAS, the District recognized the need for a clear strategy to respond to climate change impacts and conducted an internal planning process between 2019 – 2022; and WHEREAS. this internal planning process engaged the District's Citizens Advisory Committee (CAC), all District staff, and Board of Manager through facilitated discussions and workshops to understand the climate science, climate governance, and threats and vulnerabilities to delineate the District's climate role and strategy; and WHEREAS, the outcome of the multi-year planning process is the District's Climate Action Framework (CAF) that defines the District's climate strategy by three pillars: (1) Understand and Predict; (2) Convene and Plan; and (3) Implement, Measure, and Adapt; and WHEREAS, the District is concluding its internal planning process with the CAF document and is preparing to communicate and engage with external partners over the next five years to inform the development of the District 2027-2037 Watershed Management Plan that will have a climate focus; and District staff evaluated the need and benefit for a graphically designed CAF publication to support WHEREAS, external communication and engagement on the District's climate strategy; and WHEREAS, District staff requested a proposal from Background Stories, a local company that provides infographic design and visual storytelling for complex environmental and social topics such as climate change, and has a work portfolio that includes design for the Intergovernmental Panel on Climate Change (IPCC); and WHEREAS, the proposal includes two options (retainer and hourly pricing), and District staff recommend the hourly pricing option with an estimated cost of up to \$10,500 for CAF publication design and layout.

NOW, THEREFORE, BE IT RESOLVED that the Minnehaha Creek Watershed District Board of Managers hereby accepts the draft CAF; and

BE IT FURTHER RESOLVED that the District Administrator is authorized to enter into a contract with Background Stories for final design and layout of the CAF for an amount not to exceed \$10,500.

Resolution Number 22-029 was moved by Manager _			, seconded by Manager			
Motion to adopt the resolution	ayes,	nays,	_abstentions.	Date <u>: 4/28/2022</u>		

Secretary

_____ Date: _____

MCWD Draft Climate Action Framework

Building a more resilient region for current and future generations within the Minnehaha Creek Watershed District



Graphic design, layout, and finaniziation to follow

Hold page

[For graphic design, layout, and finalization phase to include a message from President White]

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1.0 EXECUTIVE SUMMARY

Rising to the Moment

Minnehaha Creek Watershed District (MCWD) recognizes that we are at a once-in-a-generation place of opportunity to take climate action. We must reduce greenhouse gas emissions and effectively and equitably adapt to current and future impacts that are unavoidable in the 178-square mile region we serve. Climate change is here, and our watershed will continue to see increases in impacts from flood, heat, and other extreme weather events by mid-century. The magnitude of these impacts is linked to the threats and vulnerabilities specific to our region. These specific threats include the timing and quantity of precipitation, rising temperatures, increasing pressure on water resources and ecological integrity, and mounting stress on critical infrastructure and community resources.

As a local unit of government tasked with watershed management and flood control, we have already started taking climate actions by improving our natural and urban landscapes through high impact capital projects and policy at the interface of land use and water resource management. In addition, MCWD has helped develop partnerships that strengthen emergency preparedness and management and has provided planning and technical support to help communities understand and address impacts.

Climate action cannot be tackled alone. It requires collaboration and connections across state, regional, and local levels of government, as well as public-private partnerships. Our current and future work will intentionally align with similar efforts unfolding with partner agencies who are also preparing and adopting their own climate action guiding documents, including the 2022 State of Minnesota's Draft Climate Action Framework.

Setting our Climate Direction

This Climate Action Framework summarizes MCWD's strategy and approach for responding to climate change. This document is not a formal plan, but rather sets a direction for how we will engage with local, regional, and state partners over the next five years, leading to our 2027 Watershed Management Plan.

MCWD's Climate Action Framework is comprised of three pillars, as described below. These pillars serve to guide MCWD's action on climate as we prepare to engage our partners and develop actionable plans over the next five years.

- <u>Pillar 1: Understand & Predict</u>: To make a difference, we recognize that we must be able to understand, assess, and predict the impacts of climate change. To remain proactive in a changing climate, MCWD needs to expand its data and technical capabilities to effectively evaluate and predict vulnerabilities and risk across the watershed over the coming decades.
- <u>Pillar 2: Convene & Plan:</u> Even with this understanding of how our natural and built systems are responding to current and future climate change, we do not have all the authority, own all of the infrastructure, or command all of the resources needed to increase resilience within the watershed. There is a need for information sharing and collaboration to develop a cohesive strategy across cities, counties, regional, and state agencies. This collaborative approach allows

partners to identify and work towards common goals and strategies to ultimately identify climate actions that benefit the communities and people we serve.

• <u>Pillar 3: Implement, Measure, & Adapt:</u> With sound science and alignment of mutual priorities, we must coordinate implementation actions with partners to make measurable progress towards set goals. From this foundation, we can collaborate with our partners, adjusting and evolving as we gain new science, identify best practices, and grow together in our collective climate action.

Looking Ahead

As we look ahead, we recognize that this region will need to take a coordinated, strategic approach to meet the urgent need to address greenhouse gas emissions and prepare communities for climate impacts. Everyone has a role in climate action, and this framework outlines how MCWD will do its part for the region's current and future climate needs.

2.0 INTRODUCTION

2.1 Purpose of MCWD's Climate Action Framework

The science is clear that climate change is widespread and rapidly intensifying across the globe. Communities across Minnesota, including those in the Minnehaha Creek Watershed, have already begun experiencing the impacts of climate change – such as increased flooding during the wettest decade in recorded history from 2010-2019. Climate change is a threat to water resources and the region we serve, encompassing 178-square miles and 29 communities.

MCWD recognized the need to define its role and strategy for responding to this threat. This document outlines our climate strategy and areas of focus for internal action and external collaboration over the next five years. The Climate Action Framework (CAF) sets the stage for MCWD to engage its local, regional, and state partners in climate action planning as a central focus of our 2027-2037 Watershed Management Plan (2027 WMP). This framework also defines a suite of near-term actions in Appendix A that MCWD will take to enhance our work in climate mitigation and adaptation while advancing this longer-term planning process.

2.2 The Need for Mitigation and Adaptation

Our region will experience a substantial shift in the frequency, timing, and magnitude of precipitation and heat events over the coming decades. Significant climate action must be taken to reduce greenhouse gas (GHG) emissions to avoid the worst impacts. At the same time, we must prepare for and adapt to current and unavoidable future climate impacts. Now, more than ever, action is required at all levels.

There are two primary tools to address climate change: mitigation and adaptation.

- **Mitigation** is taking actions to limit the magnitude and rate of future climate change by reducing greenhouse gas emissions.
- Adaptation is taking action to prepare for and adjust to both the current and projected impacts of climate change.

We know it is critical to work with others to take both mitigation and adaptation actions to effectively increase our watershed's climate **resiliency**. Together we will grow our regional and local capacity to avoid, minimize, and efficiently recover from climate impacts.

2.3 Our Balanced Urban Ecology Approach

Our mission is to collaborate with public and private partners to protect and improve land and water for current and future generations. We have learned through experience that what happens on the land is directly tied to our watershed's health. This understanding was central to MCWD's 2014 Balanced Urban Ecology (BUE) Policy that recognizes that we can best achieve our mission by working in close partnership with those who change the landscape. By integrating our work into land use change, MCWD can achieve its natural resource goals as well as broader social and economic community goals.

Guided by the BUE policy, the 2017 Watershed Management Plan (2017 WMP) was focused on improving the integration of land use and water planning to align our work with public and private partners to build thriving communities. This approach of partnership and integrated planning will be even more critical to our success as we work to address the challenges of climate change.

2.4 Framework Development

Given the scope, scale, and complexity of this challenge, MCWD initiated a planning effort to develop our CAF. MCWD's staff, Citizens Advisory Committee (CAC, a board of appointed community members), and Board of Managers participated in a 4-part process to inform the development of this CAF (See Appendix B). Our development effort included asking these four key questions, along with research and dialogue related to each topic.

- What's Happening? Climate Science
- What Are the Impacts? Threats and Vulnerabilities to the Region
- What's Being Done? Governance and Climate Work
- What's Our Role? MCWD's Climate Action

3.0 CLIMATE SCIENCE

The Intergovernmental Panel on Climate Change's (IPCC) most recent assessment shows global surface **temperature will continue to increase until at least 2050** regardless of global climate action. This is due to existing GHG emissions persisting in the atmosphere, in particular carbon dioxide. The science is clear that globally we are on a trajectory to exceed 1.5 degrees Celsius by the middle of this century and 2 degrees Celsius by 2100 unless significant reductions to future carbon dioxide and other GHG emissions occur in the coming decades. The IPCC Working Group II states that "global warming reaching 1.5 degrees Celsius in the near-term would cause unavoidable increases in climate hazards and present multiple risks to ecosystems and humans."

Meanwhile, data shows that the Midwest of the United States is warming faster compared to other areas around the globe. While focus on global average surface temperature is important, smaller scale climate trends are critical for regional and local informed decision-making.

3.1 Minnesota and Regional Climate Trends

Both Minnesota and our region continue to become warmer and wetter. From 1895 to 2020, Minnesota warmed by 3.0 degrees Fahrenheit (or 5.4 degrees Celsius) and annual precipitation increased by an average of 3.4 inches (DNR, 2021). Over the last decade alone, our region has experienced the seven wettest years on record (since 1871), including a flood of record and an additional year's worth of rainfall over this period. In addition to flood events, we also experienced a significant drought in 2021.

Want to learn more about MN Climate?

Check out the presentation of Kenny Blumenfeld, Senior Climatologist for the Minnesota DNR State Climatology Office, on precipitation and temperature trends for the MCWD region. The presentation was recorded at a MCWD CAC Meeting (March 2020) and can be viewed on the MCWD's <u>YouTube channel</u>.

4.0 IMPACTS AND VULNERABILITIES TO THE REGION

Our region is already feeling the impacts from increased precipitation and temperature. These impacts increase risk to people, places, infrastructure, and other important assets in the communities we serve. There is no question we must do more to prepare and adapt to these impacts and vulnerabilities to create resiliency within our watershed. Climate impacts and vulnerabilities in the watershed include:

Timing and Quantity of Precipitation

- Increase in number of heavy and damaging rain events
- Increase in intensity of rainfall (See Figure 1)
- Increase in frequency and magnitude of flooding events

Rising Temperature

- Warmer temperatures, especially at night and during winter (See Figure 2)
- Hotter days, with more extreme heat events
 - Increased incidence of drought (e.g., 2021 drought period)

Increasing Pressure on Water Quality

- Increased erosion potential and nutrient pollution
- Degradation of wetlands and waterbodies

Diminishing Ecological Integrity

- Shifts in ecological conditions
- Impacts to habitat health
- Stress to some native species
 - Loss of biodiversity and potential incidence of species extinctions
 - o Increase in invasive species

Mounting Stress on Critical Infrastructure and Communities' Resources

- Increased stress on our infrastructure and built environment, including roads, homes, and storm sewers
- Strains in coordination as communities face local challenges
- Competition for resources between communities
- Impacts to the communities and people who depend on these natural and built environments

Changes in climate affects everyone but the impacts are not felt equally.

Equity alongside climate change is one of the three core principles from the State of Minnesota's Draft Climate Action Framework. It is clear those who are more vulnerable due to range of historical, social, economic, environmental, and political factors must be listened to, and their concerns addressed, in developing effective and equitable strategies to address climate change threats.

"We must understand underlying social and economic inequalities that intersect with change climate" – MN State Draft CAF, 2022"



Figure 1. Average Annual Precipitation

Metro area average annual precipitation and days with 1+ inch of rain by decade, have been increasing since the 1950s. (Credit: DNR State Climatology Office)



Minnesota Average Winter Daily Minimum Temperatures (December through February, 1896-2021)

Figure 2. Average Winter Temperature

Statewide average winter daily minimum temperature from 1896 – 2021, hasbeen increasing on average by 0.51 degrees per decade and warmed 2-3 times faster than summer (June through August) (Credit: DNR State Climatology Office)

5.0 GOVERNANCE AND CLIMATE WORK

Water governance in Minnesota relies on a range of state, regional, and local entities to collectively manage and protect water resources. Each entity has its unique authority and range of powers, capabilities, and responsibilities. Water resources and climate change are intrinsically linked.

To understand the current state of climate action planning across this broader water governance landscape, MCWD reviewed existing State of Minnesota, regional, watershed and local government climate change plans. Understanding how these partners plan to take climate action enables MCWD to clarify our role and support and integrate into others' climate priorities more effectively. See Appendix B for a summary of MCWD's governance review.

5.1 Setting Goals: State of Minnesota's 2007 Next Generation Energy Act

In 2007, the Minnesota Legislature passed the bipartisan Next Generation Energy Act (NGEA), which set goals for reducing GHG emissions to 80 percent of 2005 levels by 2050. The State of Minnesota has not met any of the past or current targets set by NGEA and GHG emissions have decreased only by 8 percent (see Figure 3). Not only is the State of Minnesota not on-track to meet its NGEA statutory goals, but also the current climate science shows these goals are no longer as ambitious as needed to effectively mitigate climate change.



Figure 3. Minnesota GHG emissions

Graph shows State of Minnesota's GHG emissions from 2005 – 2018 compared to the NGEA goals. (Credit: MPCA, 2021)

Since 2005, the Minnesota Pollution Control Agency (MPCA) has tracked GHG emissions for the State of

Minnesota and has found carbon dioxide to account for approximately 73 percent of total GHG emissions from the state. This emissions inventory is divided into seven sectors to track trends and provide insight into major sources to inform mitigation actions (Figure 4). The third largest GHG emission sector is "Agricultural, Forestry, and Land Use" which accounts for almost a quarter of the state-level emissions (MPCA, 2019). Given our work in land conservation and land use change, this sector is most relevant for the work of MCWD.

For Minnesota's Future

"Adapting to our changing climate, creating resilience in our communities and landscapes, and reducing emissions to minimize the risk for future events are the only ways we can keep Minnesota vibrant and sustainable." – Draft State CAF, 2022



Figure 4. Minnesota GHG Emissions Reductions by Sector, 2005 – 2018. (Credit: MPCA, 2021)

5.2 Advancing Cross-Agency Action

In January 2022, the State of Minnesota released its "Draft Climate Action Framework" to help guide the work of the Climate Change Subcabinet that was established in 2019. This draft framework sets a vision of a carbon-neutral, resilient, and equitable future for Minnesota by setting six goals and a call for collective action to take immediate steps to avoid the worst impacts of climate change. The draft framework was co-created across 15 state agencies and reviewed by 11 Tribal Nations that share Minnesota's geography, as well as the State's Climate Change Advisory Council.

Of the six goals, two goals have clear alignment with MCWD's climate action work:

- <u>Goal 2</u> **Climate-smart natural and working lands** seek to enhance climate benefits by absorbing and storing carbon, reducing emissions, and sustaining resilient landscapes.
 - Under this goal the State of Minnesota identifies two "big impact" actions:
 - Protecting, restoring, and managing our forests, prairies, and wetlands
 - Applying agricultural practices that can sequester carbon
- <u>Goal 3</u> **Resilient communities** are places where each community plans for and is resilient to its unique climate impacts.

5.3 Assessing MCWD's Past and Current Work through a Climate Lens

MCWD's projects, programs, and policies already provide a range of mitigation and adaptation benefits. We have a long history of implementing high-impact capital projects and land stewardship to support our goals of protecting and improving water quality, managing water quantity, and restoring or maintaining ecological integrity. Key MCWD activities that align and provide co-benefits for climate action to date include:

- <u>Landscape improvements</u> MCWD projects, land conservation, and regulatory policies have improved water quality, management of water quantity (e.g., flood management), and ecological integrity across the watershed. Restoring and protecting the landscape, such as wetland and upland restoration, stormwater management, and creation of floodplain storage often provide both mitigation and adaptation benefits for a watershed.
- <u>Emergency preparedness and management</u> MCWD serves as a key point of contact for partners and the public for emergency work related to flooding. Over the last decade, MCWD has continued to expand flood forecasting capabilities to (1) enhance Gray's Bay Dam management and (2) increase communication and information sharing across communities. This includes providing "Water Level Updates" to partners and impacted stakeholders during large rain events or when high water is anticipated.
- <u>Planning and technical support</u> MCWD provides technical support for partners that are seeking to understand and address water quality and quantity issues. A recent example includes our work with a multi-agency team to understand why residents in South Minneapolis, near Lake Nokomis, experienced wet basements and yards. Several years of collaborative research and analysis led to the <u>Lake Nokomis Area Groundwater & Surface Water Evaluation</u>, released in April 2022. The evaluation serves as an early case study for the region and state about how historic development patterns are already being impacted in the wetter climate due to climate change.

5.4 What is MCWD's Place in Climate Action?

Over the next five years, MCWD has a unique opportunity to expand technical capabilities and work with partners for the development of an integrated, watershed-wide climate action plan to transform how climate governance looks in the future. Based on MCWD's situational assessment, it has become clear that **MCWD's climate role needs to inform, connect, and strategically integrate into** others' climate work. Four guiding principles were identified from our assessment and used to inform and shape the development of the CAF.

The first two principles are already included in MCWD's organizational guiding principles. We lift them up to reaffirm our commitment and anchor our climate framework in these principles.

- ✓ Sound Science Effective decision making requires a data-driven approach. MCWD needs to build out its technical capabilities and enhance its understanding of climate impacts and vulnerabilities to support our work and our partners' work.
- Partnership Climate change must be addressed collectively. Addressing these threats will require us to coordinate and take a partnership approach in order to create the most resilient communities within our watershed.

Two additional principles rose out of our internal research, evaluation, and conversations about climate change. They are the foundation for how we understand our place in climate action and how we will launch new conversations with partners about our collective work ahead.

- ✓ Priority on Flood Adaptation Flooding is the most significant threat to our natural resources and communities. There is a need for a strong understanding of current and future impacts of changing hydrology across the watershed to inform implementation of effective adaptation actions.
- Regional Role Climate change will require action at all levels. MCWD must work within its sphere of influence and leverage its unique position as a watershed district to work across jurisdictional boundaries and focus on solutions that provide regional benefit.

MCWD recognizes it has a significant and valuable role to play in helping communities understand and predict the impacts of climate change across the watershed. We look forward to engaging and learning from partners in coming years to develop a coordinated plan to adapt to those impacts. At the same time, MCWD must strategically contribute, along with other agencies, communities, and individuals, to minimize further impacts through mitigation efforts (reduction in GHG emissions). MCWD's CAF integrates both mitigation and adaptation actions to best serve our communities across the watershed.

6.0 MCWD'S CLIMATE ACTION FRAMEWORK

MCWD's CAF is defined by three pillars that will guide actions over the coming years. It begins with Understand & Predict (Pillar 1), recognizing that we must be able to understand, assess, and predict the impacts of climate change in order to effectively respond. At the same time, we need to work across governmental jurisdictions as no one has all of the authority, ownership, or resources to address climate impacts alone. As such, MCWD will **Convene & Plan (Pillar 2)** to reach out and connect with partners to learn about the climate impacts they are experiencing, and how they are approaching climate planning. We see opportunity to together build agreement with cities, counties, regional, and state agencies on goals, strategies, priorities, and roles for implementation. From this foundation, we can collaborate with our partners to **Implement, Measure, & Adapt (Pillar 3)**, adjusting and evolving as we gain new science, identify best practices, and grow together in our collective climate action. Refer to Appendix A for CAF's near-term actions by each pillar.

UNDERSTAND & PREDICT

Utilize and expand technical capabilities in data collection, analysis, and tools to understand and predict the impacts of climate change at a systems scale (regional or watershed scale).



Connect with partners to understand their climate work, concerns, plans, needs. Agencies convene to build consensus around the issues, align goals, form partnerships, leverage scare resources, and develop a coordinated agency response plan.



Coordinate implementation actions with partners to make measurable progress towards goals. Implementation actions may include funding, policy changes, projects, programs, and regulations.

6.1 Pillar 1: Understand and Predict

MCWD is working to identify knowledge gaps and build out our organizational capabilities to better understand and predict the impacts of climate change within the watershed. While technical tools and technology of today address our current needs, we must develop the next generation of tools and technology to enhance our capabilities to meet future needs. For MCWD to effectively adapt to a changing climate and increasingly volatile precipitation patterns, on-going investments are needed to measure precipitation spatially across the watershed in order to measure changes in stream flow, water levels, pollutant transport, and other watershed responses.

Under Pillar 1, we must develop the tools to leverage regional and localized climate data to conduct scenario planning and vulnerability assessments. This will help inform where anticipated surface flooding may occur in 5, 10, 15, and 20 years. This technology to assess risk and understand potential impacts will be shared with communities to evaluate what investments and actions will produce the greatest system-wide benefit. Near-term actions are already underway to expand the MCWD's technical tools and technology to meet future needs. This work includes:

- <u>Real-Time Sensor Network (RESNET)</u> Collection of high-resolution water level, flow, and water quality data to provide real time water level information to partner agencies and the public and support future model development
- <u>Machine Learning</u> Development of a machine learning model using the remote sensing data from key RESNET locations to (1) develop near-term flood forecasts to support community-based emergency management and planning and (2) improve optimization of Gray's Bay Dam to maximize adaptation through dam storage and reduce flooding impacts
- <u>2-Dimensional (2D) Pilot Model</u> Development of a pilot 2D model to develop a process to automate the processing and formatting of municipal storm sewer data to ensure that the watershed model can be built at a high resolution
- <u>2-Dimensional (2D) Watershed Model</u> Development of a watershed-wide 2D model that can characterize and quantify current and future climate change impacts to inform decisions on climate adaptation projects and policies

The investment in technical tools and technology will position MCWD as a value-added partner able to characterize vulnerabilities, evaluate climate planning scenarios, and make informed, data-driven decisions with partners to address climate impacts within the watershed.

6.2 Pillar 2: Convene and Plan

No single entity has all the jurisdictional authority, resources, or ownership of natural and built infrastructure needed to increase climate resiliency. Addressing climate change and its myriad of impacts cannot be done in a silo and requires coordination and collaboration across various levels of government. As a regional agency with strong technical and outreach capabilities, MCWD is well-positioned to serve as a connector to help engage and guide the development of a cohesive watershedwide strategy to respond to climate change.

This work will involve bringing together the MCWD's partners at cities, counties, and state agencies to:

- Learn from partners what issues they are facing, and how partners are planning to approach climate mitigation and adaptation
- Share MCWD's technical understanding of current and future vulnerabilities and risk across the watershed
- Align goals, priorities, and strategies for coordinated action across partners

In the near-term, MCWD will be taking the following actions:

- Continuing to track and engage in planning efforts of partner agencies to understand how the governance framework is evolving over time
- Continuing to develop relationships and share the MCWD's strategy with partner agencies to gather their input, learn their priorities, and align our climate strategy with the climate action plans of others
- Developing a stakeholder engagement plan that will guide how we engage our communities, residents, and other key stakeholders, beginning in 2023

6.3 Pillar 3: Implement, Measure, and Adapt

Based on the MCWD's mission, authorities, and capabilities, our role in implementing climate mitigation and adaptation will be integrated throughout our work and may include the following:

- <u>Projects</u> Implementing and supporting high-impact capital projects to manage the volume and rate of stormwater runoff and sequester carbon through landscape restoration/preservation
- <u>Dam Management</u> Optimizing operation of the Gray's Bay Dam to increase adaptation by maximizing storage capacity, minimizing flooding impacts, and providing short-term flood prediction to support emergency management and planning
- <u>Management Planning</u> –Addressing water management across municipal boundaries through coordination and partnership
- <u>Policy Change</u> Establishing policies, and advising and supporting the policies of other entities, to promote the integration of land use and water management to better adapt to the needs of climate change

The scope and scale with which we may apply these management levers and programmatic activities will be informed by the planning process with our partners, culminating in the development of our 2027 WMP. Ongoing effectiveness monitoring and adaptive management will be employed to ensure we and our partners continue to make measurable progress toward set goals.

7.0 LOOKING AHEAD

This document sets the stage for MCWD to engage in deeper and more strategic climate change conversations with partners and pursue ways to build active collaborations. MCWD has already started taking climate action by improving our natural and urban landscapes, supporting emergency preparedness and management, and providing technical and planning support for partners. Based on MCWD's understanding of the climate science, governance, and current and future threats from climate change, we know we must do more.

MCWD's climate strategy, captured in this CAF, is intended to communicate our approach and nearterm actions. MCWD is committed to taking climate action under its three pillars of (1) Understand & Predict; (2) Convene & Plan; and (3) Implement, Measure & Adapt. As a regional agency, we can support the State of Minnesota's GHG emission goal reductions and work with agencies, counties, cities, and others to implement effective adaptation actions.

Over the next five years, MCWD is building tools and technologies to allow us to assess and predict vulnerabilities and risk across the watershed. This technical understanding will support multijurisdictional, informed decision making that is essential for effective implementation of climate action in the watershed. The near-term actions identified in Appendix A provide a roadmap for MCWD's internal work and guide how we will engage key stakeholders in climate planning as part of the development of our 2027 WMP. This process will provide clarity for how our work will integrate and align with the climate action work of the State of Minnesota, regional partners, and cities to make our watershed more resilient and benefit the communities we serve.

APPENDIX A: NEAR-TERM ACTIONS

The following tables, organized by pillar, provide a summary of on-going or near-term mitigation and adaptation actions. Mitigation and adaptation actions listed below are not exhaustive. Instead, they are intended to communicate and reflect priorities for 2022-2027. This will set the stage for the MCWD 2027 WMP focus on addressing climate change impacts.

Understand and Predict		
Utilize and expand technical capabilities in data collection, analysis, and tools to u predict the impacts of climate change at a watershed scale.	inderstand and	
Climate Actions	Timeframe	
 2-Dimensional (2D) Pilot Model Develop a pilot 2D model to develop a process to automate the collection of municipal storm sewer data to ensure that the watershed model can be built at a high resolution 	Ongoing	
 Real Time Sensor Network (RESNET) High-resolution water level, flow, and water quality data collection to provide real time water level information to partner agencies and the public and support future model development 	Ongoing	
 Machine Learning Develop a machine learning model using the remote sensing data to predict future water levels at key locations throughout MCWD based on partner input 	Ongoing	
 Gray's Bay Dam Optimization Develop a model for dam optimization that will improve MCWD's ability to effectively operate the dam and minimize flooding 	Near-term (2022-2027)	
 Data Aggregation and Analysis Identify all data across organizations to help understand and predict mitigation and adaptation opportunities (e.g., permit applications for pipe upsizing or pumping) Inventory pipe networks and other natural/built assets in coordination with cities and other partners 	Near-term (2022 -2027)	
 2-Dimensional (2D) Watershed Model Develop a tool that can characterize and quantify current and future climate change vulnerabilities and impacts to inform decisions on climate adaptation projects and policies by integrating state topographic, regional land use, and municipal infrastructure data 	Near-term (2022-2027)	
 Quantify Past Benefits Quantify mitigation and adaptation benefits from past projects and programs (e.g., methane lake releases, wetland restorations) 	Near-term (2022-2027)	

Convene and Plan

Connect with partners to understand their climate work—concerns, plans, needs. Agencies convene to build consensus around the issues, align goals, form partnerships, leverage scare resources, and develop a coordinated agency response plan.

Climate Actions	Timeframe
 Partnership Development Ongoing coordination with state, regional, and local level staff, and policymakers to build consensus around issues, strategy, and roles 	Ongoing
 Formation of Technical Advisory Committee (TAC) to support MCWD initiatives that will help inform climate planning scenarios and 2027 Watershed Management Plan (2027 WMP) development 	Near-term (2022-2027)
 Flood Response Plan Development Develop a "flood response plan" to continue to improve communication and decision-making across agencies during flood events 	Near-term (2022-2027)
 Project Prioritization Determine the appropriate measures and approaches for assessing climate mitigation and adaptation benefits as part of MCWD project planning Integrate adaption and mitigation criteria into capital project planning and prioritization 	Near-term (2022-2027)
 Operations Assessment Evaluate opportunities to reduce greenhouse gas emissions through changes to the MCWD's operations (e.g., building, fleet, hybrid work policy) 	Near-term (2022-2027)
 Scenario Planning Utilize 2D model to run scenarios, set metrics/goals and evaluate strategies with communities and other agency partners 	Near-term (2022-2027)
 Equity Policy Evaluation and Direction Setting Apply a developed diversity, equity, and inclusion (DEI) framework to MCWD climate work 	Near-term (2022-2027)
 Policies and Programs Direction Setting Develop climate policy direction, implementation actions, and roles with communities that will be incorporated into 2027 WMP 	Near-term (2022-2027)

Implement, Measure, and Adapt Coordinate implementation actions with partners to make measurable progress towards goals. **Climate Actions** Timeframe Landscape Improvements Ongoing Implementation of projects and programs that provide mitigation and • adaptation benefits **MCWD** Operations Near-term Implement updates to MCWD operations based on assessment (2022-2027) • Gray's Bay Dam Modernization Near-term Explore technology to improve and optimize dam operations (2022 - 2027)•

APPENDIX B: CLIMATE ACTION FRAMEWORK DEVELOPMENT PROCESS

As a leader in watershed management, the operator of Gray's Bay Dam, and an agency responsible for a considerable number of natural resources across a diverse landscape of local communities, MCWD recognized a need to map how its climate role would integrate into its work and partners' climate work. In 2019, MCWD initiated a planning effort to develop our climate strategy outlined in this CAF.

MCWD's staff, Citizens Advisory Council, and Board of Managers participated in a review process to inform the development of this CAF. Our planning effort included integrating the climate science, regional climate impacts and threats, Minnesota climate governance, and MCWD's climate work completed to date to inform our three pillars and near-term climate actions. External advisors provided guidance on the Climate Action Framework.

MCWD Staff (2019 - Present)

Climate Science

Starting in 2019, MCWD staff conducted an extensive review of the most recent and relevant climate science. MCWD incorporated climate trend data from the State of Minnesota's Climatology Office and conducted research to understand the climate science from a global to regional level . This included but was not limited to:

- Intergovernmental Panel on Climate Change (IPCC) assessments and support materials
- US Global Change Research Program, 2018 Fourth National Climate Assessment Midwest
- Minnesota Department of Natural Resources Climatology Office
- Eutrophication will increase methane emissions from lakes and impoundments during the 21st century
- Eutrophication of lakes will significantly increase greenhouse gas emission

In addition, MCWD's Engineer *September 23, 2021, Technical Memorandum* identifies actions that could be taken to support climate change mitigation. This memorandum highlights key activities and methodologies that could be used to quantify the mitigation benefits of MCWD's projects and outlines some of the inputs required for such quantification estimates through the lens of carbon sequestration. This information has been incorporated into near-term actions to further investigate how to best quantify mitigation and adaptation benefits from past and future projects and programs (e.g., methane lake releases, wetland restorations).

Climate Governance

MCWD staff investigated how others were addressing climate change, in particular adaptation. This included reviewing documents from the State of Minnesota, counties, watersheds, and local governments. The purpose of conducting the climate governance scan was to understand the status of climate change planning and implementation taking place throughout Minnesota. This scan included assembling data connected to climate planning efforts and policies, and who is leading this work across the layers of state, regional, and local government. In total, 143 plans were reviewed from watershed

districts, counties, and state-level groups. Thirty-six of the 140 plans included climate change specific content around new standards, monitoring, projects, modeling, engagement and outreach, coordination, and/or budget.

- <u>State-Level</u>: 13 of 13 plans reviewed included relevant climate content
- <u>County-Level</u>: 15 of 85 plans reviewed had relevant climate content
- <u>Watershed Districts:</u> 8 of 45 plans reviewed had relevant climate change content

At the state level, the scan included an overview of each agency engaged in water management to determine the extent of climate change adaptation policies and planning at an agency level. State level agencies and planning entities are engaged in climate change adaptation and resilience conversations, and all of those reviewed for this scan took part in the 2017 Interagency Climate Adaptation Team report, which outlines the roles of different government entities and priorities related to climate change adaptation and resilience. However, at the time of the initial MCWD 2019-2020 review, state agencies have not yet introduced for a cohesive framework to respond to climate change challenges. This scan was updated in 2022 to incorporate the final State Water Plan and draft Climate Action Framework (released in 2022). These resources provide a statewide approach to climate action.

At the watershed level, a review of each watershed district plan was completed. It is clear watershed districts across the state recognize firsthand that water levels are rising due to climate change and recognize the need to bring leadership to the issue.

At the county level, a review of county plans, including water management plans, focused on climate adaptation efforts including gathering data (monitoring and modeling), providing education and outreach, and coordinating with other government entities. This was updated to reflect Hennepin County's 2021 Climate Action Plan, which included particular focus on mitigation and adaptation within an equity framework.

At the local level, the plans of those entities within MCWD's jurisdiction were assessed to understand the local landscape of climate change planning. MCWD local analysis scan included reviewing the plans from all 29 communities within MCWD, Three Rivers Park District, Minneapolis Park & Recreation Board, and the Met Council. In 2020, entities within MCWD's boundary varied in their engagement on climate change adaptation and resilience. Generally, the plans of the larger and more developed cities within the lower watershed include climate change policies and action steps.

Other Resources

MCWD staff reviewed and researched other climate planning documents to inform and reference what others are doing in climate planning and action outside of Minnesota. Below is a list of informative planning documents by others utilized during the development of this framework. The below list is not comprehensive but is included to convey the scope of research and review conducted.

- US Global Change Research Program, 2018, <u>Fourth National Climate Assessment</u>
- US Climate Resilience Toolkit
- NOAA Climate Program Office and Metropolitan Mayor Caucus, 2021 <u>Climate Action Plan for the</u> <u>Chicago Region</u>
- District of Columbia, 2019 Resilient DC: A Strategy to Thrive in the Face of Change
- District of Columbia, <u>Climate Ready DC</u>: Plan to Adapt to a Changing Climate

- Milwaukee Metropolitan Sewerage District, 2019 <u>Resilience Plan</u>
- East Bay Municipal Utility District (EBMUD), 2021 <u>Climate Action Plan</u>: Sustainability & Resilience
- City of Portland and Multnomah County, 2014 <u>Climate Change Preparation Strategy</u>: Preparing for Local Impacts
- City of Portland and Multnomah County, 2015 Climate Action Plan

<u>Citizens Advisory Committee (2020 – 2021)</u>

Over the course of 2020-2021, the MCWD's appointed advisory board, our Citizens Advisory Committee (CAC), was engaged in a series of discussions to advise the MCWD as it developed its strategy for responding to climate change. This discovery phase of work included exploration of climate trends, the roles and plans of other government entities, the threats and opportunities presented by a changing climate, and the MCWD's strengths and weaknesses for responding. Using the insights drawn from these discussions, staff developed a draft Climate Action Framework. Below is a summary of the CAC's work that informed MCWD's CAF.

- March 2020: Climate Science
- <u>June 2020</u>: Governance Scan
- October 2020: Climate Planning
- <u>November 2020</u>: Climate Impacts and Threats
- March 2021: Climate Series Wrap-Up
- April 2021: CAC's Climate Series Report Back

Board of Managers (2019; 2021-2022)

- June 2019: Need for Climate Strategy
- March 2021: Climate Planning Overview
- December 2021: Climate Action Framework
- January 2022: Watershed Questions and Role Considerations
- February 2022: Mitigation Actions and Near-term Actions

External Advisors (2022)

MCWD technical and legal advisors reviewed the Climate Action Framework to provide guidance on MCWD's strategy and approach. Special thanks to Kenny Blumenfeld (Senior Climatologist with DNR), Louis Smith (Smith Partners), Chuck Holtman (Smith Partners), and Christopher Meehan (Stantec).

Hold page

[For graphic design, layout, and finalization phase to include acronyms and glossary]

APPENDIX D: REFERENCES

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https://report.ipcc.ch/ar6wg2/pdf/IPCC_AR6_WGII_SummaryForPolicymakers.pdf.

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Minnesota Pollution Control Agency (MPCA), 2021. Biennial Report to Minnesota Legislature: Greenhouse Gas Emissions Inventory 2005 – 2018. Accessed February 2022. Available here: <u>Greenhouse</u> <u>Gas Emissions Inventory: 2005 to 2018 (state.mn.us)</u>

Minnesota Pollution Control Agency (MPCA), 2019. Greenhouse gas reduction potential of agricultural best management practices. Accessed February 2022. Available at: <u>Greenhouse gas reduction potential</u> of agricultural best management practices (state.mn.us).

Stantec, 2021. Climate Action Framework Technical Memo. September 23, 2021.

US Climate Resilience Toolkit, 2021. Steps to Resilience Overview. Accessed January 2022. Available at: <u>Steps to Resilience Overview | U.S. Climate Resilience Toolkit</u>.



backgroundstories.com 2821 Pleasant Ave. Minneapolis, MN 55408 USA

Proposal **MCWD** Climate Action Framework ²² April 2022

Hello Helen and Kate,

We're glad for the opportunity to propose graphic design work for MCWD's Climate Action Framework. It will be great to help MCWD capture key collaborator attention so that climate action steps can be taken in tandem.

Please let us know if we can answer any additional questions about this proposal!

- Karen Lanthier, Account Manager, Background Stories

About Background Stories

Even though we have worked together already, here's a little recap about us and how we'll look forward to working with you!

Background Stories is a local information design consultancy that helps non-experts better understand – and engage with – social justice & environmental sustainability. We utilize a variety of techniques, including infodesign, data visualization, animation, visual storytelling and interaction design to communicate complex information – to engage audiences and facilitate positive change.

We have significant experience working with organizations with complex processes, data, and messages. We integrate strategy, brand standards, communication best-practice and principles of behavior change into all of our work.

How We Work

With a 'content-first' approach and a focus on collaboration, we use an iterative process to collect feedback and ensure that content and design meets your needs – and those of your audiences.

We're nimble and adaptable: All of our designers are trained on project management and you'll have your own primary contact.

Capabilities include:

 Information Graphics
 Data Visualization
 Visual Storytelling
 Science Communication
 Reports & Publications
 Animation



We work with socially and environmentally-focused organizations and seek to reduce our own footprint.

We are a certified women-owned, small business.

Experienced in working with multiple stakeholders, we understand how to mitigate risk for unexpected scenarios. We use Design Thinking processes and visual tools to keep projects on track and everyone up-to-date.

Infographic Design Process

Our approach is strategic and collaborative. We focus first developing your story – in the way that is most likely to motivate your audiences. Then we iterate through the development of engaging and informative visuals – designed to create change. Input from your team is an important part of the process, and is incorporated throughout design iterations.



Our Team

Over recent projects, you've had a chance to meet a number of our team members! If you'd like a refresher on who we are and what we're passionate about, please see our bios at *backgroundstories.com/about/*



Proposed Timing

Please see the proposed timeline (end of document) for crafting the MCWD's Climate Action Framework. This is an adaptable timeline, based on what needs come-up throughout the project. If you're interested in the 6-month retainer agreement (below), then we will create subsequent timelines for other projects that you'd like us to tackle in the coming months as those are ready to be initiated.

Budget Proposal

Background Stories is happy to present both a retainer agreement option and an hourly pricing option for MCWD's Climate Action Framework (CAF). **Either option** will include the following work:

1) Creation (design and layout, creation of iconography, and addition of photos and graphs) for of an up-to 30 page document. 2) Creation of two new graphics and incorporation of at least three rounds of review with the MCWD team. 3) Final draft to be completed by end of June, with the option to revise/update text after this time period.

Our team has worked on four report projects - similar in size/scale to the CAF - within the past year. The range of hours spent on those projects was **45-60 hours**, and we anticipate a similar range for the CAF. This includes all project elements: including creative direction, design/layout, project management, and at least 3 iterative reviews.

Retainer Option

We would love to explore a Retainer agreement with MCWD! Here are a few ways a Retainer may benefit your organization:

- Lower hourly rate. We discount our blended hourly rate for retainer clients to \$125/hr (compared to the \$150/hr blended rate for non-retainer clients). We are able to offer this discount because a retainer offers a known time frame that we will be working with your organization!
- First-in-line for design requests. When you have new or additional project needs, we prioritize retainer client deadlines first.
- Flexible Assistance. We also prioritize Retainer client revisions and add-ons to ongoing projects.
- Regular Check-ins at a frequency that works well for you. Biweekly or monthly check-ins have worked well for past retainer clients and help ensure efficient flow of multiple projects.
- Monthly reports generated upon request.

Our retainers start at \$2500/month for 6 months this is equivalent to 20 hrs per month available for your project needs! Six (6) months is our minimum retainer length, but we are happy to work in longer time frames with clients. We think this approach would be a great fit for MCWD, given additional anticipated projects. For example, we would be happy to work with your team on design for MCWD's Land and Water Partnership Initiative. This could include creation of graphics, icons, and/or 1-page sheets to support sharing information, as well as other related communications materials.

MCWD Retainer: \$15,000 for 6 months (at

\$2500/mo.)

Hourly Pricing Option

If you would prefer to work on just this project, rather than have a retainer agreement covering multiple projects, we recommend creating the Climate Action Framework on our standard hourly pricing. We are familiar with working within not-to-exceed budgets, so please name a specific total project cost that should not be exceeded (unless the budget is revisited with your team first). We would charge this at our 'Blended Hourly Rate', below, which incorporates all creative direction, design, layout, and project management:

Blended rate: \$150/hr

Transfer of Final Documents (e.g. PDFs, .jpg, .png): **Built into blended rate (above)**

Transfer of Design Files (e.g. Adobe Illustrator, Adobe InDesign): **\$1500 one-time amount** (Gives the capacity for you to use this project as a template with other design teams)

Hourly Rate: \$6,750-9,000 for 45-60 hours

We Look Forward to Continuing the Conversation

This estimate covers costs associated with research, planning, design, preparation, and collaboration regarding the project. This estimate does not cover printing or required out-of-town travel. Any additional expense(s) will be cleared with the client prior to purchase. Estimate is valid for 60 days.



