Rice Creek Watershed District

Community Resilience Building Workshop Series Summary

Shoreview Community Center, February 2023 + March 2023

Summary prepared by

FRESHWATER

Table of Contents

Funding for this work made possible by:

MINNESOTA POLLUTION CONTROL AGENCY

CLEAN WATER LAND & LEGACY AMENDMENT

Introduction

Background

The Rice Creek Watershed District (RCWD) received a grant from the Minnesota Pollution Control Agency (MPCA) in 2022 to pursue a project that would move the watershed toward more climate resilient practices. RCWD invited Freshwater to convene and facilitate a series of two Community Resilience Building (CRB) workshops to connect local insights with hydraulic models that mapped flooding locations (produced by Houston Engineering) to identify opportunities to build resilience in the watershed related to local climate change. Climate change is one of the greatest challenges facing society today. In Minnesota, there is a risk due to increases in extreme heat, extreme rainfall, higher summertime dew points, warmer winters, and the intensity of severe storms.

Many different topics and issues were broached as workshop participants worked together to brainstorm how to create a more resilient Rice Creek watershed. While many of the strategies proposed are directly related to the hydraulic models and flooding issues, there are also opportunities to pursue co-benefits that address other climate hazards, like extreme heat and warming winters, in addition to flooding. From structural solutions to social ones, the following report documents how key stakeholders are thinking about climate resiliency in the watershed. What emerges are exciting opportunities for the RCWD, cities, counties, and other collaborators to pursue.

Process & Methodology

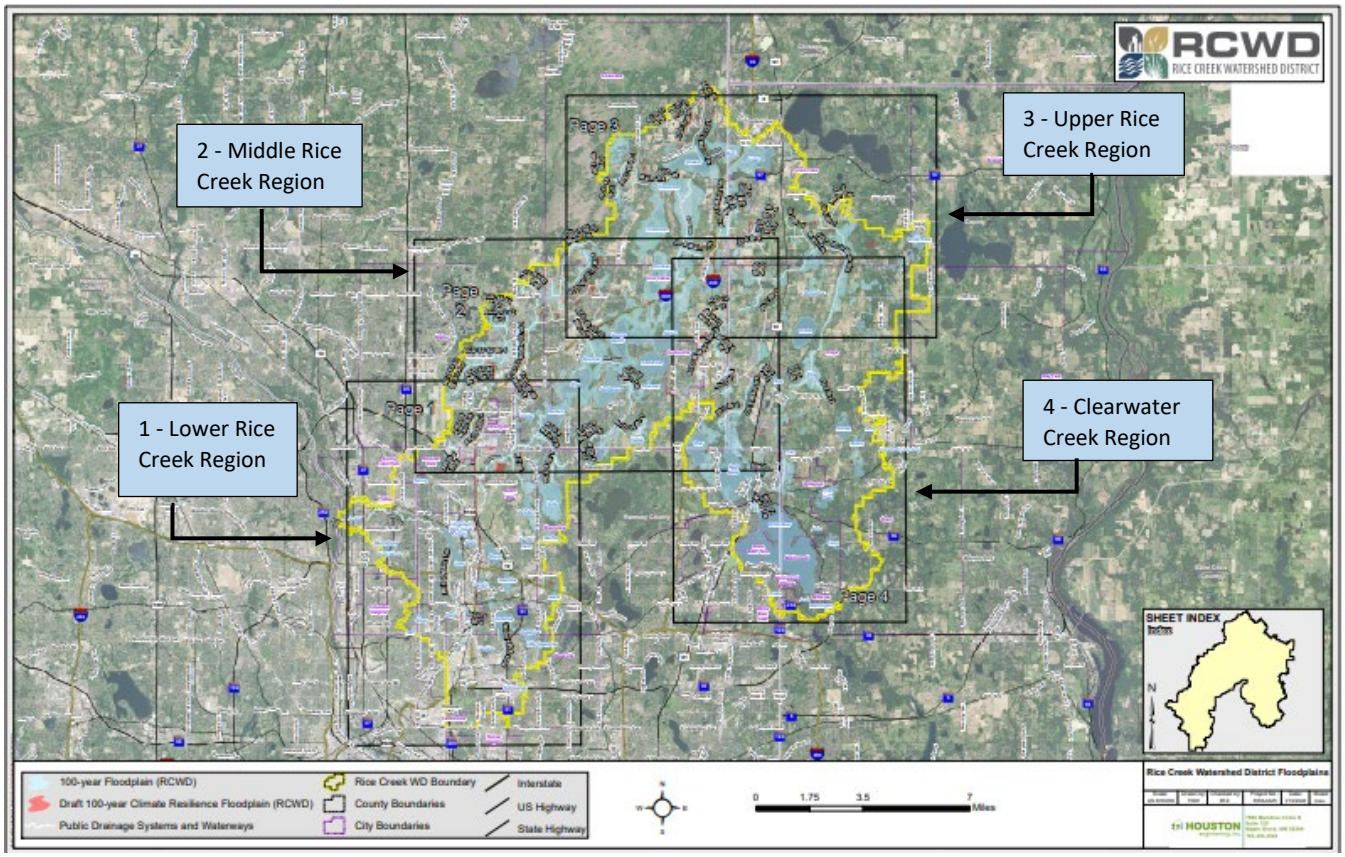
In early 2023, staff and volunteers from entities across the Rice Creek Watershed District came together in-person at the Shoreview Community Center to engage in conversations about climate resiliency in the district. The first workshop, held in February 2023, began with participants hearing a brief presentation from RCWD about the impacts of climate change in the watershed. Participants were then asked to rank which hazards they feel are most pressing to address in the watershed – with the following being the collective ranking, from most pressing to least pressing as thought by participants:

1. Flooding and extreme precipitation
2. Drought
3. Extreme heat
4. Warming winters and ice

Next, participants were asked to identify infrastructural, social and environmental **features** across the watershed that may be vulnerable to climate hazards. These features ranged from specific roadways in the watershed to nursing homes and power stations. This exercise set up the group well for the second workshop, held in March 2023, to consider what specific **strategies** could be pursued to protect the identified features from climate hazards, particularly flooding and extreme precipitation, now and in the future.

Process/Methodology (cont.)

The Rice Creek watershed covers 186 square miles and encompasses parts of Washington, Ramsey, Anoka and Hennepin counties, including all or portions of 28 cities and townships. Since this watershed encompasses a large surface area and has many unique attributes, the core workshop planning team decided to split up the watershed by **planning region** so that participants could explore a smaller area of the watershed more completely. The below image shows how the watershed was broken up for the purposes of the workshops. You can read more about each region in the appendix.



Once the workshops were complete, all the features and their corresponding strategy suggestions were compiled into a spreadsheet, and then analyzed and synthesized by **themes**. The body of this report reflects all the strategy suggestions that came out of the workshop as categorized by themes, and includes **where** to consider targeting the strategy, **how high a priority** the strategy was ranked in the workshops, and which **entities** might be best positioned to pursue the strategy.

Themes + Strategies for Climate Resilience

The following sections outline the key themes that came up throughout the workshops, and the action recommendations provided by participants to address the issues/themes. The sections are ordered alphabetically, and do not reflect an overall priority. While broken out into separate sections in this report, the themes are not mutually exclusive and there is a lot of interplay between them.

Each table below has a column that identifies the general or specific locations/populations to target or prioritize for the implementation of the suggested strategy, and an indication of whether the suggested strategy was ranked as High, Medium or Low Priority within the workshop. The number of dots included in the priority ranking column correlate to an exercise conducted in the workshop, where participants were given a sheet of five sticky dots and asked to place the dots next to strategies they felt were most important. The higher the number of dots next to a strategy, the more people felt it should be prioritized, so dot number is another indication of how the strategies could be prioritized.

The tables also include a column indicating the agency partners who may be engaged with potentially implementing the strategy. The most likely agency to lead the strategy, if implemented, is indicated in **bold**. Generally, strategies that involve land use management are led by Cities due to their zoning and land use authorities. Cities are also the likely lead for most community engagement efforts due to their close relationship with their constituents. The RCWD is the most likely lead for regional stormwater management efforts. Multiple road authorities (Cities, Counties, and MnDOT) are likely to lead efforts involving the transportation systems. Soil and Water Conservation Districts (SWCDs) are most often the first point of contact regarding rural land practices and soil conservation.

Accessibility

A top issue workshop participants considered was accessibility. While equal accessibility of services and opportunities should always be pursued no matter the conditions, the importance of accessibility becomes more crucial in times of emergency. For example, during flooding events, emergency routes should always remain accessible and predesignated alternative routes should provide redundancy to the system so people have multiple options to get around. There was also an awareness of improving accessibility of information. Various parts of the watershed, like around Bald Eagle Ave, are home to immigrant populations who may not speak English as a first language. Ensuring that communications are disseminated in multiple languages and in a variety of ways, like via TV/Radio, print, etc., means that messages will have a greater likelihood of reaching more people in times of stress. Lastly, accessibility to public indoor spaces is important during times of inclement climate events. Identifying areas where people can congregate safely and describing how to get to these safe zones could be important information to communicate to the public ahead of hazard events.

Accessibility Strategies from Workshop	*Locations and/or populations to target for the implementation of this strategy*	*Priority Ranking from Workshop*	***Lead Agency** / Partners*
Ensure communication and engagement is in multiple languages and cultural approaches	▪ Nine North Radio Station ▪ Immigrant, low-income and BIPOC populations – around Bald Eagle Ave and Oneka Lake area	High Priority, 10 dots	**Multiple Agencies**

Designate alternative routes for roads that tend to flood during extreme precipitation events, and communicate these alternate routes to the public	• Frenchman Road • Roads around medical facilities	High Priority, 4 dots	**Cities, Counties, MnDOT /** RCWD
Create accessible areas for people to congregate in times of emergency that offer shelter, basic supplies, and other resources	• Community centers • Libraries	Not ranked in workshop, 1 dot	**Cities, Counties**
Offer alternative transportation in emergencies, like school buses or paratransit			**Cities, Counties /** School Districts

Agricultural BMPs

According to workshop participants, there is some agricultural land in the North and East portions of the Clearwater Creek planning region, specifically east of Oneka Lake. This agricultural land may be negatively impacted by several climate-related hazards, including drought and extreme precipitation. To make these landscapes more resilient to these hazards, the farming community may consider increasing agricultural best management practices (BMPs), which may include planting of perennial and/or cover crops, engaging in more frequent crop rotation, and focusing on maintaining good soil health. In the event of more extreme heat waves, it might become important for food producers to explore indoor farming as well.

Ag BMP Strategies from Workshop	*Locations and/or populations to target for the implementation of this strategy*	*Priority Ranking from Workshop*	***Lead Agency** / Partners*
Increase ag best management practices adoption, including crop rotation, perennials, and focusing on soil health	• North and east portions of SE watershed area • East of Oneka Lake	High priority	**SWCD /** NRCS, BWSR, MDA
Explore indoor farming opportunities	• North and east portions of SE watershed area • East of Oneka Lake	Not ranked in workshop	**Cities /** MDA

Chlorides

Road salt use is on the rise, especially as warming winters and more frequent freeze/thaw patterns lead to more ice accumulation in communities. While road salt is the most frequently used method to melt ice, chloride runoff into water bodies is detrimental to surface water and aquatic habitat health. To lessen the use of chloride in the watershed, some approaches include finding salt alternatives, collecting excess salt before it washes into storm drains, and more education efforts on smart salting and salt alternatives. The following suggestions could be pursued through RCWD's Watershed Communication and Outreach Program.

Chloride Strategies from Workshop	*Locations and/or populations to target for the implementation of this strategy*	*Priority Ranking from Workshop*	***Lead Agency** / Partners*

Reduce road salt usage, and collect excess salt	• Areas adjacent to chloride impaired water bodies • Hwy 96 which drains into Ditch 14 • Roadways – 36 & Fairview, Mississippi Street	High Priority	**Cities, Counties, MnDOT**
Educate about smart salting practices	• Community groups - FFA, FH, Scouts, Sports teams, Do Good Roseville • Seniors/Assisted living homes – around Bald Eagle Ave and Oneka Lake area • Residential homes, especially near lakes and rivers	Medium Priority, 1 dot	**Cities /** RCWD / Counties
Investigate salt alternatives		Medium Priority, 3 dots	**Cities, Counties, MnDOT /** RCWD

Collaboration

One of the benefits of conducting the community resiliency workshops is for professionals to come together and brainstorm how they can better work together towards a resilient community amongst themselves and with the broader watershed. Many ideas were brought forth highlighting opportunities for collaboration across various professional and community groups.

Collaboration Strategies from Workshop	*Locations and/or populations to target for the implementation of this strategy*	*Priority Ranking from Workshop*	***Lead Agency** / Partners*
Work through trusted community members to spread information about climate hazards in a culturally appropriate way (See Trusted Messengers program)	• Immigrant/ESL communities • Faith communities & cultural groups	High Priority, 13 dots	**Cities /** RCWD
Create “wholesale” incentives for people who install green infrastructure or stormwater BMPs as a group rather than individually	• Locke Lake – dredged wetland	High Priority, 13 dots	**RCWD** / Cities, Counties, BWSR

Pursue mutual aid opportunities and agreements across groups	• Low income or EJ communities – ex. By East Moore Lake • Emergency management facilities/systems – ex. RTMC, Sheriff's department, Army Reserve Center • Community Groups – ex. FFA, FH, Scouts, Sports Teams, Do Good Roseville	High Priority, 4 dots	**RCWD, Cities, Counties**
Recruit, mobilize and support people to help in hazards	• Faith communities and cultural groups • Community Groups – ex. FFA, FH, Scouts, Sports Teams, Do Good Roseville	High Priority, 3 dots	**Cities, Counties /** RCWD
Recruit volunteers to protect historic developments from hazards through maintenance and installation of BMPs	• Faith communities and cultural groups • Community Groups – ex. FFA, FH, Scouts, Sports Teams, Do Good Roseville	Medium Priority	**Cities /** RCWD, Counties

Communication + Community

While collaboration with various groups may be important, communicating threats, news, and knowledge is also an important aspect of a well-connected and well-prepared watershed, and can further build trust between community members and professional services working on climate resiliency. As noted above in the Accessibility section, it may be important to broaden messaging, and to provide more than just one-way communications. Establishing a system where people can alert professionals to issues or concerns could be beneficial and creates a two-way communication stream.

It was recognized by those in the room that they don't have nearly all the answers, and why recognition of this fact implores professionals to truly listen to and incorporate needs and solutions communicated by the broader community to inform plans of action. When entities show that they are committed to citizen wellbeing, this builds more trust between community and governmental entities.

Communication + Community Strategies from Workshop	*Locations and/or populations to target for the implementation of this strategy*	*Priority Ranking from Workshop*	***Lead Agency** / Partners*
Create more 2-way streams of communication – where listeners/viewers not only take in information but can also easily and accessibly share their own thoughts and feedback and engage in dialogue	• Nine North TV station • Radio stations • Websites	High Priority, 7 dots	**Cities** / Counties, RCWD

Tree up from community to service providers to communicate need – explore a grassroots approach		High Priority, 6 dots	**Cities** / Counties, RCWD
Hire consultants to do translations of messaging and material	• Immigrant/ESL communities	High Priority, 5 dots	**Cities** / Counties, RCWD
Coordinate neighborhood check-in protocols, where community members check-in on each other before, during and/or after a hazard event	• Senior/Assisted Living – Bald Eagle Ave, Oneka Lake Area	Low Priority	**Cities** / Counties, RCWD
Add more demonstration sites to the watershed district – that is, experimental projects at a site that demonstrate a best management practice to the community. RCWD may look to their Public Drainage System or Groundwater Management and Stormwater Reuse programs in the RCWD 2020 plan to justify and fund this action	• Community centers – Anpetu Teca, Shoreview Community Center, Fridley Community Center, Circle Pines Community Center	Not ranked in workshop	**RCWD /** Cities, Counties, SWCDs

Emergency Planning and Response

For institutions like schools, medical facilities and nursing homes, it's imperative to have an emergency response plan in place, and to ensure those who may be impacted by an emergency are familiar with the plan and can act on it if a hazard event does occur. Some specific planning suggestions include establishing a formal sandbag distribution center so there is a one stop hub for supplies in the event of a flooding emergency. Another suggestion is to look at the ICS emergency communication system and determine if there are capabilities to create greater efficiencies, or if natural resource emergencies can be integrated into the system.

Emergency Planning and Response Strategies from Workshop	*Locations and/or populations to target for the implementation of this strategy*	*Priority Ranking from Workshop*	***Lead Agency** / Partners*
Ensure drinking water systems all have a backup/resilience plan in place and execute this plan efficiently and effectively if necessary	• DWSMA • Drinking water infrastructure	High Priority, 17 dots	**Cities /** MDH, Met Council, HSEM
Ensure emergency plans are in place for a variety of community buildings and services	• Power Stations • Prisons • Community Centers • Medical facilities (Allina) • Restaurants, Bars, Grocery stores • Schools • Senior/Assisted living homes	High Priority, 11 dots	**Cities /** HSEM

Get involved with ICS alert system – investigate if there are more efficiencies possible with using this system and if there is an opportunity for natural resource integration into the system	• Emergency management system	High Priority, 8 dots	**Cities** / HSEM, Counties

Funding + Incentives

Workshop participants spent time thinking about funding mechanisms for hazard mitigation work, and possible incentive programs that could be leveraged to encourage people to implement climate solutions in their work and lives. A couple of suggested actions include prioritizing investment in green infrastructure, applying for more planning grants, and subsidizing tree plantings in the watershed. Incentives could be explored to encourage people to protect trees, pursue climate resilient development and going beyond code, and homeowner transitions from traditional lawns to native/pollinator lawns. A handful of the below suggestions may be pursued through the Water Quality Grant Program or Mini-Grants Program as outlined in the RCWD 2020 Watershed Management Plan.

Funding + Incentives Strategies from Workshop	*Locations and/or populations to target for the implementation of this strategy*	*Priority Ranking from Workshop*	***Lead Agency** / Partners*
Invest in green infrastructure – find areas to implement more of these projects	• Parks and trails systems • Low income and/or EJ communities	High Priority, 11 dots	**Cities /** RCWD, Counties, BWSR, SWCDs
Explore incentives and planning money for getting groups involved in developing climate resiliency projects	• Community groups – FFA, FH, Scouts, Sports teams, Do Good Roseville, etc • Faith communities and cultural groups	High Priority, 11 dots	**Cities** / RCWD
Pursue grant funding for water quantity projects – invest in drinking water systems	• DWSMAs	High Priority, 7 dots	**Cities /** RCWD, MDH
Incentivize installation of more drain tile to promote infiltration	• Parking lots	Medium Priority, 4 dots	**SWCDs /** RCWD
Incentivize developers and builders to go above and beyond the standard building codes to promote greener development		High/Medium Priority, 4 dots	**Cities /** RCWD, BWSR
Incentivize or require community gardens	• Food shelves	High Priority, 1 dot	**SWCDs /** MDA, NRCS
Incentivize or require keeping trees – adopt fines		High Priority	**Cities**
Subsidize tree planting in the watershed		High Priority	**Cities** / SWCDs

Provide relocation assistance during flooding events	• Mobile home communities • Low income/EJ communities • Homes situated in a floodplain	High priority	**Cities /** HSEM, Counties
Incentivize lawn transition from grass to native/pollinator plants		Medium Priority	**RCWD** / Cities
Increase funding to expand and maintain parks and trail systems before and after hazard events	• Parks and trails systems	2 dots	**Cities** / Counties

Land Use + Landscape Resiliency

How cities and townships develop the land has broad implications on the ability to adapt to climate hazards. Some suggested actions for the watershed include not siting any new development in a floodplain, especially emergency or community hubs like schools and medical facilities. Exploring ways to develop more densely was another suggestion made to preserve natural areas, like woodlands and wetlands. This may warrant exploration of a building/zoning code change.

A resilient landscape is one that alleviates negative impacts of hazards like flooding and extreme precipitation, extreme heat, drought, and warming winters and ice. Workshop participants identified multiple ways for the RCWD to move toward a resilient landscape through the installation of additional green infrastructure. The term “green infrastructure” means infrastructure that is built with nature to diminish negative impacts of natural hazards. Some examples of green infrastructure are rain gardens, vegetative buffers, and bioswales. RCWD may look to their Public Drainage System or Groundwater Management and Stormwater Reuse programs in the RCWD 2020 plan to justify and fund these actions.

Land use + Landscape Resiliency Strategies from Workshop	*Locations and/or populations to target for the implementation of this strategy*	*Priority Ranking from Workshop*	***Lead Agency** / Partners*
Rethink parking lots as opportunities to lessen impacts of climate hazards • Parking lots covered with solar panels or shaded by trees • More green space in parking lots with native plantings; infiltration areas, including permeable pavers and tree trenches	• Any new development – parking lots	Medium Priority, 16 dots	**Cities /** RCWD
Preserve floodplain, woodlands, and wetlands – restrict building in these and other vulnerable areas		High Priority, 4 dots	**Cities** / RCWD
Educate about and encourage turf alternatives, like through the Lawns to Legumes program		High Priority, 4 dots	**SWCDs /** RCWD

Design parks to flood	• Island Lake Park • Rice Creek Park	High Priority, 3 dots	**Counties** / Cities, RCWD
Pursue installation of vegetated buffers around lakes, rivers, and streams in the watershed	• Impaired lakes • Stream at County Highway 10 • Lino Lakes Creek • People who own land on lakes, rivers or streams	High Priority, 2 dots	**SWCDs** / RCWD
Promote mixed use development; pursue the "15-minute city" concept		5 dots	**Cities /** Counties

Monitoring + Data Collection

It's difficult to understand how a system operates unless it is consistently monitored, and its behavior is documented over a period of time. Monitoring uncovers trends from system activity and lets us know what interventions might be working in a system, and which ones may not be. Since water professionals have limited capacity, time, and money to monitor certain areas, there may be solutions to gather more data by encouraging volunteer citizen monitoring, like through the CAMP program that's managed by the Metropolitan Council. Additionally, there may be several sites around the watershed that will want to be especially targeted for monitoring. This might include sites of historic contamination and/or superfund sites. In the Clearwater Creek planning region, these potentially contaminated areas might be around Hwy 61 and Bald Eagle Ave, and some roads and railroad tracks near Hwy 96. It could be beneficial to monitor plumes of contamination from sites such as these to better understand contaminant migration potential.

In addition, a copious amount of data questions arose from the workshop crowd, in particular questions about what data is currently available and what data it might make sense to collect to communicate back to the public, and to help professionals understand which work ought to be targeted and prioritized first. The following suggested strategies could be justified and funded through the Public Drainage System Inspection, Maintenance and Repair program, the Modeling and Planning Program, or the Surface Water Monitoring and Management Program as outlined in RCWD's 2020 Watershed Management Plan.

Monitoring + Data Collection Strategies from Workshop	*Locations and/or populations to target for the implementation of this strategy*	*Priority Ranking from Workshop*	***Lead Agency** / Partners*
Study capacity and structural soundness of stormwater systems throughout watershed	• MNDOT stormwater around Hwy 96 which drains into ditch 11	High Priority, 8 dots	**RCWD /** Cities, Counties, MnDOT
Use maps to identify networks of people who weren't in the room for these workshops – and work to better understand how they can be engaged in this topic	• Low income/EJ communities – By East Moore Lake	High Priority, 6 dots	**Cities /** RCWD
Encourage citizens to become water monitoring volunteers	• Impaired lakes • Stream at County Highway 10 • Lino Lakes Creek	High Priority, 3 dots	**RCWD /** DNR

Create a database that communicates service-learning opportunities to the public	• Faith communities + cultural groups • Community groups • Watershed residents	High Priority, 2 dots	**RCWD** / DNR
Monitor plumes to identify migration potential at brownfield and superfund sites	• Hwy 61 and Bald Eagle Ave • Several road and railroad tracks near Hwy 96	High Priority, 1 dot	**MPCA** / MDH
ID particular vulnerabilities throughout the watershed and map them so this information is readily available when targeting new projects	• Failing septic systems • Brownfields, superfund sites and historic dump sites • Invasive species sites • Sacred sites • Flood risk areas – roadways, lakes, streams • Historic developments	High/Medium Priority	**RCWD** / MPCA, Counties, DNR, MHS

Outreach + Engagement

Exploring innovative ways to inform and engage people about climate resiliency is another crucial aspect of creating a truly climate resilient community. Below are some suggested actions proposed at the workshop to focus outreach and engagement efforts. Some of the following strategies could be pursued through RCWD's Watershed Communication and Outreach Program, as described in the 2020 Watershed Management Plan.

Outreach and Engagement Strategies from Workshop	*Locations and/or populations to target for the implementation of this strategy*	*Priority Ranking from Workshop*	***Lead Agency** / Partners*
Educate and change cultural norms and expectations through demonstration sites, workshops, and public campaigns	• See Living Waters Church for demonstration site example	High Priority, 11 dots	**RCWD** / Cities, SWCDs
Support neighborhood community building (NNO, mutual aid, call trees) – harnessing community for collective actions	• Community groups • Neighborhood associations • Residents	High Priority, 11 dots	**Cities**
Integrate art and creativity into education and awareness campaigns – find ways to reach more audiences and meet them where they are based on their interests and goals	• Community Centers	High Priority	Multiple agencies
Create a coordinated outreach approach from LGUs to activate/mobilize/communicate about hazards and resources		High Priority	Multiple agencies
Normalize and hold regular community meetings where people can be innovative about solutions for the watershed	• Community centers • Community groups	High Priority	Multiple agencies

Hold watershed appreciation events – communication should focus on shared goals	• Nature centers • Community centers	Not ranked in workshop	**RCWD** / Cities, Counties

Operations + Maintenance

It's one thing to install a new piece of gray or green infrastructure, and quite another to keep it operating and maintained over a longer period. Significant resources must be allocated for operation and maintenance of systems to ensure they are performing to their highest standard. Below are some suggested strategies for where to consider prioritizing operations and maintenance of systems.

Operations & Maintenance Strategies from Workshop	*Locations and/or populations to target for the implementation of this strategy*	*Priority Ranking from Workshop*	***Lead Agency** / Partners*
Increase maintenance timeline for roadways and stormwater infrastructure, and collect data as you go		High Priority, 7 dots	**Cities /** Counties, MnDOT
Water trees, especially during droughts		High Priority, 4 dots	**Cities /** Counties, MnDOT
Fund and improve road conditions in predominately low income and/or BIPOC communities	• Lexington, MN	High Priority, 1 dot	**Cities /** Counties, MnDOT
More frequently inspect septic systems	• Rural areas	High Priority	**Counties /** MPCA

Planting Trees, Native Plants + Pollinators

Increasing the number of trees, native plants and pollinators planted in the watershed were also top strategies suggested to increase climate resiliency. These plants serve multiple benefits when it comes to mitigating climate hazards. In terms of flooding, the deep roots of established trees, natives and pollinator plants infiltrate water back into the ground, diminishing the water above ground that contributes to flooding. Trees also provide shade and cooling properties that can be highly beneficial during extreme heat waves.

Planting Trees, Native Plants + Pollinator Strategies from Workshop	*Locations and/or populations to target for the implementation of this strategy*	*Priority Ranking from Workshop*	***Lead Agency** / Partners*
Plant more trees throughout the watershed, ensuring that the species selected are diverse, resilient, and sited appropriately	• Watershed wide	High Priority, 9 dots	**SWCDs /** Cities, Counties
Plant native, pollinator friendly and/or drought tolerant plants in place of lawns, and in other strategic areas throughout watershed	• Rough areas of golf courses • In boulevards, along highways, parks and along biking/ped trails	High Priority, 3 dots	**SWCDs /** Cities, Counties

Regulation + Enforcement

Rules and regulations were another topic of conversation amongst workshop participants, and there were some suggestions made about how regulations could be updated to reflect more resilient practices. These include increasing regulatory floodplain policies, updating building and zoning codes to require storm shelter spaces and allow composting toilets, higher tree preservation standards in development, and amend ordinances to allow deep root/tall grasses and plants.

Regulation and Enforcement Strategies from Workshop	*Locations and/or populations to target for the implementation of this strategy*	*Priority Ranking from Workshop*	***Lead Agency** / Partners*
Establish higher tree preservation standards and/or require tree/native plant % replacement to offset loss from new development	• Any new development	High Priority, 9 dots	**Cities**
Create a new code that lowers the minimum amount of parking spaces required at a site	• Any new development	Medium Priority, 8 dots	**Cities**
Require a SWPPP (Stormwater Pollution Prevention Plan) to be a part of all new construction	• Any new development	High/Medium Priority, 5 dots	**Cities /** RCWD
Change ordinances to not require turf lawns in HOAs, and allow deep roots/tall grasses/plants		High Priority	**Cities**
Require storm shelters as a part of the building code	• Schools • Nursing Homes • Community Centers	High Priority	**Cities /**MN Department of Labor & Industry (MNDOLI)
Allow composting toilets		High/Medium Priority	**Cities /** MDOLI

Resilience Hub

So called “resilience hubs” are gaining attention across cities for their ability to be centers for people to access information about what to do in a climate emergency, to provide basic resources, and as places to take refuge during an intense climate event. Participants discussed how a resilience hub of this nature doesn’t necessarily need to be built from scratch, but may be housed in an existing building where people congregate, like a church, community center, school or library.

Resilience Hub Strategies from Workshop	*Locations and/or populations to target for the implementation of this strategy*	*Priority Ranking from Workshop*	***Lead Agency** / Partners*
Add a resilience hub structure to a public space	• Parks and trail systems	High Priority, 5 dots	**Counties /** Cities, RCWD

Establish an existing structure as a resilience hub, adding an area where people can access information, support, and take refuge from inclement weather	• Community centers • Restaurants/Bars/Grocery stores • Schools/universities • Nature Centers • Social service/Homeless service buildings • Faith building • Library	High/Medium Priority	**Cities /** RCWD, Counties
Retrofit a bus or other vehicle to act as a "roaming resilience hub" – carrying supplies and resources to people around the watershed	• Public transportation vehicles	Not ranked in workshop	**Cities /** RCWD, Counties

Stormwater management

Stormwater management best practices come in many different forms and functions. Below, you'll read some of the suggestions from the workshop. There is a degree of conflict between some of the suggestions which will need to be considered when making decisions about actions to pursue. RCWD may look to their Public Drainage System Inspection, Maintenance and Repair program to support several of the following strategies.

- **Drainage**
    - Appropriate drainage of water following a precipitation event may be crucial to avoid flooding in unwanted areas. Diverting water through installation of culverts and draining tile to infiltration basins are a couple actions that could be pursued.

Diversion + Drainage Strategies from Workshop	*Locations and/or populations to target for the implementation of this strategy*	*Priority Ranking from Workshop*	***Lead Agency** / Partners*
Drain tile to infiltration basins	• Bridges • Roadways	High/Medium Priority, 3 dots	**RCWD /** Cities, Counties / MnDOT
Improve drainage from farmland	• Agricultural land – north and east portions of SE watershed area	High Priority, 1 dot	**SWCDs /** RCWD, MDA
Invest in pumps and hoses to divert to catch basins			**Cities /** Counties, MnDOT

- **Infiltration + Runoff**
    - Infiltrating water back into the ground is another way to reduce flooding. Several practices were suggested to help water soak back into the ground where it falls, including through green infrastructure, permeable pavement/surfaces, and bioswales with multiple infiltration basins. These sorts of surfaces can also help slow runoff, so that flash flooding and flows can be further avoided. RCWD may refer to the Natural Waterway Management program for guidance on pursuing some of the below suggestions.

Infiltration + Runoff Strategies from Workshop	*Locations and/or populations to target for the implementation of this strategy*	*Priority Ranking from Workshop*	***Lead Agency** / Partners*
Pursue installation of green infrastructure that holds more water as an infiltration solution (ex. rain gardens)	• Around Locke Lake	High Priority, 26 dots	**RCWD /** Cities, Counties
Increase opportunities for infiltration at various sites (ex. permeable surfaces, green infrastructure, bioswales with multiple infiltration basins)	• New developments • Parking lots	High/Medium Priority, 14 dots	**Cities /** RCWD
Reduce and slow runoff	• Roadways • Bridges	Medium Priority, 8 dots	**RCWD /** Cities, Counties / MnDOT
Increase buffer zones	• Shorelines • Bridges • Roadways	Medium Priority, 8 dots	**RCWD /** Cities, Counties / MnDOT
Direct runoff to wetlands for recharge	• Wetlands	High Priority	**RCWD /** Cities, Counties / MnDOT

- **Storage**
    - Increasing water storage capacity may also help alleviate flooding in unwanted areas. Siting storage structures, like holding tanks, in strategic places such as around ditches and beneath parking lots and bridges might be considered. Additionally, creating rain barrel demonstration sites in public places like around schools, libraries, parks, or medical facilities would provide water storage with an added benefit of educating the public about this issue. Finally, strategically designing certain outdoor areas to flood during rain events could be another useful strategy, for example designing golf courses to provide water storage during a flood, or a park.

Storage Strategies from Workshop	*Locations and/or populations to target for the implementation of this strategy*	*Priority Ranking from Workshop*	***Lead Agency** / Partners*
Pursue unique and innovative pilot projects that are multi-beneficial in terms of social and environmental benefits (ex. an amphitheater that is designed to store water during floods and acts as a community gathering space at other times)	• Parks and trails • Community centers • Public outdoor spaces	High Priority, 13 dots	**Cities /** RCWD, Counties

Increase storage capacity of stormwater infrastructure system – adding holding tanks, retention basins, and storage pipes for runoff, both underground and around certain developments	• Under parking lots • Stormwater infrastructure system (pipes, storm sewers, culverts) • Under schools/universities (City of Hugo, North Star Elementary, etc.) • New developments (ex. Near 35W) • Mobile home communities • Historic developments	High Priority, 2 dots	**Cities /** RCWD, BWSR
Design particular spaces for flooding when necessary, and allowing for more water storage	• Parks and trails • Golf courses (ex. Hugo)	High Priority	**Cities /** RCWD, BWSR
Increase upstream water storage	• Around bridges • Roadways	Medium Priority, 8 dots	**RCWD /** MnDOT, Counties, Cities

Surface Water Quality + Quantity

Impacts to surface water quality and quantity can be exacerbated by climate hazard events. For example, extreme precipitation and flooding can wash a greater volume of pollutants into water bodies, and extreme heat can encourage the proliferation of bacteria and algal blooms in a wetland, lake or stream. To lessen further degradation of surface water bodies from climate hazards, it has been suggested to focus on riparian and shoreland zones, like planting more deep-rooted plants around water bodies to help catch toxins before they reach the water.

Surface Water Quality + Quantity Strategies from Workshop	*Locations and/or populations to target for the implementation of this strategy*	*Priority Ranking from Workshop*	***Lead Agency** / Partners*
Install fountains in water bodies for aeration	• Impaired lakes	High Priority, 1 dot	**DNR /** Counties
Install natural buffers around water bodies to protect against flooding and pollution	• Impaired lakes • Stream at County Highway 10 • Lino Lakes Creek • Locke Lake	High Priority	**SWCDs /** RCWD, Counties, Cities

Water Conservation + Reuse

In times of drought, it may become even more necessary for the community to conserve water. This may mean reducing the amount of water used to maintain certain landscapes, like residential lawns. Some were also concerned about threats to drinking water supply, like in times of drought, and suggest practicing intentional drinking water conservation at times like these, or expanding groundwater recharge areas.

Implementing water reuse practices was discussed at the workshop, as it is seen as an emerging solution to some of our most pressing water issues. The RCWD could investigate green infrastructure that encourages the recycling of water, particularly for watering places like

golf courses, public lands, and lawns. The RCWD may look to their Groundwater Management and Stormwater Reuse Assessment program to justify and fund the below activities.

Water Conservation + Reuse Strategies from Workshop	*Locations and/or populations to target for the implementation of this strategy*	*Priority Ranking from Workshop*	***Lead Agency** / Partners*
Explore opportunities for water reuse throughout the watershed Reuse water to water lawns/golf courses	• Golf courses • Public spaces • Parks and trails • Lawns	High Priority, 15 dots	**Cities /** RCWD, Counties
Reduce watering during times of drought	• Lawns • Parks and trails • Golf courses	High Priority	**Cities**
Engage community around water conservation principles and tactics	• Residences • Community centers	High Priority	**RCWD /** Cities, Counties

Conclusion

This document highlights the numerous actions that the RCWD, cities, counties, and others may consider pursuing to get ever closer to a more climate resilient watershed, as contributed by stakeholders from across the watershed during the Community Resilience Building workshops. The information here is meant to be used as a resource to help inform the activities and priorities stakeholders include in their work plans over the coming years. Many of the suggestions require multiple entities to coordinate to be most effective, so collaboration across many of these strategies will be key.

From community engagement and partnership strategies to structural green infrastructure and storage basin installation, the watershed District and partners have endless opportunities to create a more resilient watershed. The momentum and excitement from these workshops must now be carried forward by Rice Creek watershed stakeholders to see the work through.

Appendix A – Core Team + Workshop Participants

Core Workshop Planning Team Participants:

The Core Team met a few times before the workshops to determine workshop purpose, logistics, and invitees. Below is a list of those who comprised this core team.

Alan Rupnow, *Ramsey County*
Andrew Nelson, *City of Lino Lakes*
Connie Taillon, *City of White Bear Lake*
Craig Schlichting, *City of New Brighton*
Eric Wojchik, *Metropolitan Council*
Jessica Collin-Pilarski, *Washington County*
Kendra Sommerfeld, *Rice Creek Watershed District*
Michael Wagner, *Anoka County*
Nicholas Tomczik, *Rice Creek Watershed District*
Noelle Bakken, *City of Roseville*
Rachel Juba, *City of Hugo*
Rachel Workin, *City of Fridley*
Ryan Johnson, *City of Roseville*

Workshop #1 Participants – February 28th, 2023 3-7PM at Shoreview Community Center

Lower Rice Creek Planning Region:
Abigail Phillips, *Ramsey County Environmental Health*
Alana Howey, *Resilient Roseville*
Ann White Eagle, *Ramsey County Soil & Water*
Bryant Ficek, *City of Roseville Public Works, Environment, and Transportation Commission*
Cyndi Arneson, *ISD 623/Roseville Public Schools*
Emilia Gusdal, *Roseville Area High School Progressives*
Heidi Ferris, *Fridley Environmental Commissioner*
Holly Swiglo, *Roseville Area High School Progressives*
Ivy Song, *Roseville Area High School Progressives*
Jim Kosluchar, *City of Fridley*
Judd Freed, *Ramsey County Emergency Management Services*
Kathy Ramundt, *Do Good Roseville*
Mary T'Kach, *Ramsey County Public Health*
Noelle Bakken, *City of Roseville*
Paul Gardner, *Shoreview Citizen*
Rachel Workin, *City of Fridley*
Ryan Johnson, *City of Roseville*
Wayne Groff, *City of Roseville City Council*

Workshop Facilitators:
Chyann Erickson, *Freshwater*
Eileen Kirby, *Freshwater*
Eric Wojchik, *Metropolitan Council*
Jen Kader, *Freshwater*
Kendra Sommerfeld, *Rice Creek Watershed District*
Lila Franklin, *Freshwater*

Clearwater Creek Planning Region:
Alan Rupnow, *Ramsey County*
Connie Taillon, *City of White Bear Lake*
Jeff Luxford, *White Bear Lake Environmental Advisory Commission*
Jessica Collin-Pilarski, *Washington County*
Joe Crowe, *NE Metro Climate Action*
Lori Olinger, *NE Metro Climate Action*
Lori Tella, *Washington Conservation District*
Mike Parenteau, *White Bear Lake Conservation District*
Susan Vento, *Metropolitan Council*
Tim Wald, *White Bear Lake Area School District*

Middle Rice Creek Planning Region:
Jon Sevald, *Moundsview Community Development*
Michael Wagner, *Anoka County*

Upper Rice Creek Planning Region:
Andy Nelson, *City of Lino Lakes*
Lindsay Buchmeier, *Lino Lakes Environmental Board*
Nick Tomczik, *Rice Creek Watershed District*

Workshop #2 Participants: - March 22nd, 2023 3-7PM at Shoreview Community Center

Lower Rice Creek Planning Region:
Abigail Phillips, *Ramsey County Environmental Health*
Bryan Mayer, *Ramsey County Emergency Management Services*
Bryant Ficek, *City of Roseville Public Works, Environment, and Transportation Commission*
Cyndi Arneson, *ISD 623/Roseville Public Schools*
Dale Howey, *Resilient Roseville*
Emilia Gusdal, *Roseville Area High School Progressives*
Heidi Ferris, *Fridley Environmental Commissioner*
Holly Swiglo, *Roseville Area High School Progressives*
Ivy Song, *Roseville Area High School Progressives*
Justin Townsend, *Ramsey County Soil & Water*
Kathy Ramundt, *Do Good Roseville*
Mary T'Kach, *Ramsey County Public Health*
Noelle Bakken, *City of Roseville*
Paul Gardner, *Shoreview Citizen & MPCA*
Rachel Workin, *City of Fridley*
Wayne Groff, *City of Roseville City Council*

Workshop Facilitators:
Chyann Erickson, *Freshwater*
Eileen Kirby, *Freshwater*
Eric Wojchik, *Metropolitan Council*
Jen Kader, *Freshwater*
Kendra Sommerfeld, *Rice Creek Watershed District*
Lila Franklin, *Freshwater*

Clearwater Creek Planning Region:
Angela Defenbaugh, *Washington Conservation District*
Bill Lazarus, *RCWD Citizen Advisory Committee*
Connie Taillon, *City of White Bear Lake*
Daniel Elder, *Washington County*
Heidi Hughes, *City of White Bear Lake*
Jeff Luxford, *White Bear Lake Environmental Advisory Commission*
Jessica Collin-Pilarski, *Washington County*
Lori Olinger, *NE Metro Climate Action*
Lori Tella, *Washington Conservation District*
Megan Forbes, *RCWD Citizen Advisory Committee*
Scott Costello, *White Bear Lake Conservation District*
Tim Wald, *White Bear Lake Area School District*
Tom Anderson, *Metropolitan Council*
Tracy Shimek, *White Bear Lake Community Development*

Middle Rice Creek Planning Region:
Cassie Cavegn, *Lino Lakes Environmental Board*
Michael Wagner, *Anoka County*

Upper Rice Creek Planning Region:
Andy Nelson, *City of Lino Lakes*
Nick Tomczik, *Rice Creek Watershed District*

Appendix B – Planning Regions Used in Workshops

More about each region –

1 - Lower Rice Creek Planning Region

- This region is located on the south and west sides of the watershed, encompassing parts of Roseville, Falcon Heights, Columbia Heights, Fridley, Shoreview, Lauderdale, Lexington, Arden Hills, Spring Lake Park and Moundsview. Its major lakes include Silver, Valentine, Josephine, Turtle, Round, Johanna, Long, and Marsden Lakes.

2 - Middle Rice Creek Planning Region

- This region is located in the middle portion of the watershed, encompassing parts of Blaine, Centerville, Lexington, and Lino Lakes. Its major lakes include Marshan, Reshanau, Peltier, George Watch and Centerville Lakes.

3 - Upper Rice Creek Planning Region

- This region is located in the upper portion of the watershed, encompassing parts of Columbus, Forest Lake, Lino Lakes, and Hugo. Its major lakes include Rondeau, Crossways, Columbus, Howard, Mud, and Clear Lakes.

4 - Clearwater Creek Planning Region

- This region is located on the east side of the watershed, encompassing parts of White Bear Lake, Hugo, Centerville, Mahtomedi, Dellwood and Willernie. Its major lakes include White Bear, Bald Eagle, Pine Tree, Rice, Round, Sunset, Oneka and Horseshoe Lakes.