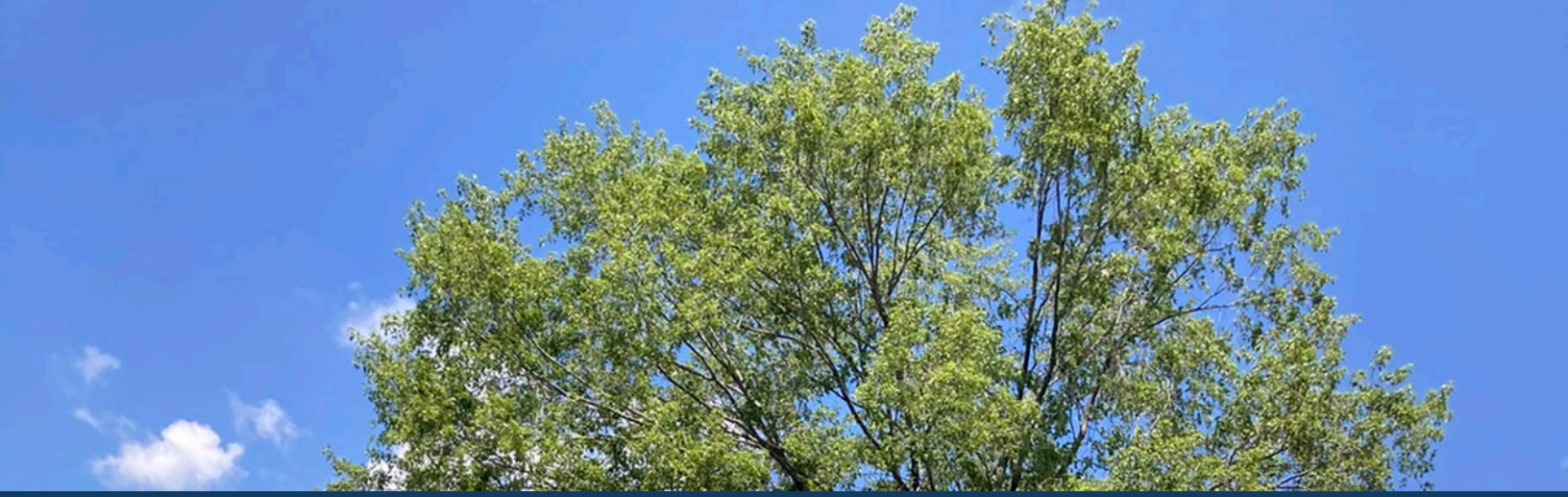

2027-2036 Watershed Management Plan

BROWN'S CREEK
WATERSHED DISTRICT
Preserving the integrity of the watershed for future generations

Brown's Creek Watershed District

2027-2036

Watershed Management Plan

Prepared by Brown's Creek Watershed District and Emmons & Olivier Resources, Inc.

Approved by the Minnesota Board of Water and Soil Resources - August 27, 2026
Adopted by the Brown's Creek Watershed District Board of Managers - September 9, 2026

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ACKNOWLEDGEMENTS

BCWD Board of Managers

- Klayton Eckles, President
- Chuck LeRoux, Vice President
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- Erik Peters, City of Oak Park Heights Engineer
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- Abby Shea, Minnesota Department of Health
- Anneka Munsell, Minnesota Department of Health
- Jen Kader, Metropolitan Council
- Steve Christopher, Metropolitan Council
- Lila Franklin, Metropolitan Council
- Mike Isensee, Carnelian Marine St. Croix Watershed District
- Jay Riggs, Washington Conservation District Administrator
- Matt Oldenburg-Downing, Middle St. Croix WMO
- Dan Scallon, Minnesota Department of Natural Resources
- Jessica Collin-Pilarski, Washington County
- Adriana Atcheson, Washington County
- Kevin Peterson, Washington County Engineer
- Miranda Nichols, Minnesota Pollution Control Agency
- Kate MacDonald, Minnesota Pollution Control Agency
- Angie Hong, East Metro Water Resource Education Program

Brown's Creek Watershed District Staff

- Karen Kill, Administrator
- Hannah Peterson, Communications & Project Assistant
- Camilla Correll, Emmons & Olivier Resources, Inc.
- Alexander Furneaux, Emmons & Olivier Resources, Inc.
- Michael Welch, Smith Partners PLLP

LETTER FROM THE BCWD PRESIDENT

The Brown's Creek Watershed District (BCWD) Board of Managers is pleased to present the attached 10-year plan for district operations. This plan builds off previous 10-year plans and serves as a guiding document for actions and improvements in coming years.

Why does BCWD exist? The Minnesota Legislature recognized that water is of vital importance to both humans and the environment. It also recognized that water does not abide by political boundaries; therefore, legislation was enacted decades ago to create this and many other water management organizations around the state. The boundaries of these organizations are based on the natural flow of water rather than city or county lines.

Water is both an essential component for life and wellness and a major challenge when it is polluted or when it goes where it shouldn't. This updated 10-year plan is intended to further protect, preserve, and improve our water resources without adding undue burden or complications.

The community members of the BCWD board serve the residents, flora, and fauna that work and live within the watershed. To that end the board and BCWD staff endeavor to achieve the goals spelled out in this 10-year plan by using the financial resources of the district wisely and efficiently; the board will strive to procure grants and to build governmental partnerships to benefit the watershed and surrounding areas. As part of this 10-year plan, the board will also revisit and re-evaluate our rules for managing activities in the watershed.

This document is a commitment to both the local and greater community to continue to manage the water resources in our charge and the land we live on. Past plans have brought about major successes in restoring impaired water resources, protecting sensitive resources, and preventing flooding. The board will use this plan to continue its efforts.

Klayton Eckles, President, Brown's Creek Watershed District

Restored segment of Brown's Creek off Neal Avenue North in 2025.

GLOSSARY

Term	Definition
Anthropogenic	Of, relating to, or resulting from the influence of human beings on nature.
Aquifer	A body of permeable rock or sand and gravel that can contain or transmit sufficient quantities of groundwater to wells.
Aquitard	A low permeability unit that slowly transmits groundwater.
Baseflow	Water flow that comes from groundwater seeping into the stream.
H/H Model	A hydrologic and hydraulic model is a tool used to simulate how stormwater runoff is generated and transported across the landscape.
Bedrock Aquifer	Bedrock (consolidated) formation that yields groundwater.
Climate Change	A long-term change in climate measures such as temperature and rainfall. These changes have a large impact on water quality, water levels, and stream or river flows.
Community Assistance Program	Developed in conjunction with the Minnesota Pollution Control Agency's Minimal Impact Design Standards, this package includes performance goals, a stormwater credit calculator for best management practices, and ordinance guidance for communities.
Dissolved Oxygen	The level of free, non-compound oxygen present in water or other liquids. It is an important parameter in assessing water quality because of its influence on the organisms living within a body of water.
Diversion Structure	The diversion structure was installed in Stillwater in 2003. It is located approximately 600 feet west of Neal Avenue on the south side of the Brown's Creek State Trail and diverts all stormwater flow from the Long Lake drainage area from Brown's Creek into Lake McKusick. It was designed to preserve and enhance the integrity of Brown's Creek, improve the water quality and quantity in Lake McKusick, and allow the City of Stillwater to proceed with development as proposed in its comprehensive plan.
Ecological Health	The ecological integrity and connectivity of the Brown's Creek watershed's ecosystems.
Ecosystem	A biological community of interaction among animals, plants, and microorganisms as well as the physical and chemical environment in which they live.
E. coli	*Escherichia coli* (abbreviated as *E. coli*) is a fecal coliform bacterium that comes from human and animal waste. The Environmental Protection Agency uses *E. coli* measurements to determine whether fresh water is safe for recreation.
Environmental Justice	The recognition that historic and present decision making and environmental discrimination has caused low-income communities, communities of color, and Indigenous peoples to bear the disproportionate impacts of pollution and climate change. The Minnesota Pollution Control Agency's Environmental Justice Framework prioritizes projects and programs that will improve environmental quality in priority communities supported by authentic and open dialogue with these communities and gathering more complete data to support decision-making.
Equity	The active and intentional effort to pursue fair and just outcomes for individuals that recognizes differences in their identities.
Eutrophication	The enrichment of an ecosystem with nutrients (nitrogen and/or phosphorus), which can increase phytoplankton and algal blooms as well as deplete oxygen in the water (hypoxia), threatening aquatic animals.
Fen	A peat accumulating wetland that receives drainage from surrounding mineral soils and usually supports marsh-like vegetation. Fens are richer in nutrients and less acidic than bogs due to groundwater inflows.
Fill	Earthen fill or soil is sometimes placed in depressions or low points in the landscape to make sites more buildable and to reduce flood risk to an area.

Flood Mitigation	Reducing flood-related damages and effects that occur despite prevention efforts. Strategies can be structural or non-structural.
Flood Prevention	Methods used to reduce or prevent the detrimental effects of flood waters, usually reducing the rate and volume of stormwater runoff discharged from built property to downstream resources. Methods can be structural or non-structural.
Freeboard	The height of the watertight portion of a building or other construction above a given level of water.
Geomorphology	The study of the processes responsible for the shape and form (morphology) of water courses. It describes how sediment (e.g., silt, sand, gravel) and water are transported from the headwaters to the mouth of a watershed.
Green Infrastructure	The integration of the natural environment and engineered systems to provide multiple benefits and support resilient communities by reducing the effects of development on stormwater. Examples include underground storage, tree trenches along roads and sidewalks, bioswales along unimproved roads, permeable pavement, blue or green roofs, retention ponds in open areas, wetland preservation and restoration, stream re-meandering, and vegetation management in upland areas.
Groundwater-Dependent Natural Resources	A feature with surface emergence of groundwater at a spring or seepage area supporting plant communities or aquatic ecosystems.
Groundwatershed	An area that contributes groundwater flow to a given discharge point.
Healthy Watershed	A watershed with mostly natural land cover, especially near its waters; good water quality, quantity, and flow; and habitats with diverse aquatic life. These components support long-term, sustainable benefits to people and the environment.
Hydrology	The movement of water. Often used in reference to water movement as runoff over the soil after a rainfall event as it contributes to surface water bodies.
Hypoxia	Oxygen deficiency in a biotic environment.
Impaired Biota	When a stream is not supporting the aquatic organisms (biota) it should. The challenge is determining the stressors (conditions affecting the biota). The Environmental Protection Agency has defined protocol for identifying these stressors, and for each identified primary stressor, a Total Maximum Daily Load (TMDL) analysis must be conducted.
Impaired Waters	Streams or lakes that do not meet their designated uses because of excess pollutants or identified stressors.
Impervious	A hard surface that prevents or slows the entry of water into the soil and causes water to run off the surface in greater quantities and at an increased rate of flow than prior to development.
Lake	A lake is an aquatic ecosystem that is generally at least ten acres in surface area and greater than six feet deep at some point.
Lake Management Plan	A plan to help protect a natural resource system, including the water quality of the lake and the associated fish, vegetative, and wildlife communities by identifying issues and/or concerns, setting realistic goals, and identifying the corrective actions needed.
Load Allocation	The portion of a pollutant load that is attributed to non-point sources.
Littoral Zone	Shallow area of a body of water that is closest to the shore.
Macroinvertebrate	Organisms without backbones, which are visible without the aid of a microscope. Aquatic macroinvertebrates live on, under, and around rocks and sediment on the bottoms of lakes, rivers, and streams.
Pervious	A surface that can be penetrated or permeated, allowing passage through.
Per- and polyfluoroalkyl substances (PFAS)	PFAS are a series of man-made chemical compounds that persist in the environment for long periods of time. They are often called “forever chemicals.” For decades PFAS chemicals have been used in industry and consumer products such as nonstick cookware, waterproof clothing, and stain resistant furniture. These chemicals have been important for certain industries and uses. The latest science shows that these chemicals are harmful to our health.

Pond	A small body of still water formed naturally or by hollowing or embanking.
Quaternary	Recent geologic period from 2.6 million years ago to the present.
Recharge Zone	An area where water readily infiltrates and recharges an aquifer.
Secchi Depth	The depth at which an opaque disk, called a Secchi Disk, ceases to be visible from the surface. It is used as a lake monitoring tool to gauge water transparency.
Shallow Lake	A lake with a maximum depth less than 15 feet or a littoral zone that covers at least 80% of the lake's surface area.
Shrub Carr/ Emergent Wetland	A wetland community that is transitional between open wetlands and forested wetlands. It often occurs in bands around lakes or ponds, on the margins of river floodplains, or, more extensively, in glacial lakebeds.
Social Vulnerability	The resilience of communities when confronted by external stresses on human health, stresses such as natural or human-caused disasters, or disease outbreaks.
Stormwater Management	Activities, rules, and infrastructure which intentionally influence the volume, rate, and direction of the runoff generated within the landscape.
Tolerance Value	A group of organism's relative tolerance to organic pollution on a 0-10 scale. 0 is the least tolerant to pollution and is a clean water indicator, while 10 is the most tolerant to pollution and can be found at very polluted sites.
Turbidity	The cloudiness of the water caused by large numbers of individual particles that are generally invisible to the naked eye.
Waste Load Allocation	The portion of a receiving water's assimilative capacity (ability to receive pollutants without deleterious effects) that is allocated to one of its existing or future point sources of pollution.
Watershed	A topographically defined area within which all water drains to a particular point.
Water Table	The underground surface beneath which earth materials such as soil or rock are saturated with water.
Wetland	Defined by the presence of (a) hydric soils, (b) surface or subsurface hydrology, and (c) hydrophytic vegetation (Minnesota Rules, part 8420.0110, subpart 52).

Macroinvertebrate samples collected from Brown's Creek in 2025.

ACRONYMS

Acronym	Description
1W1P	One Watershed One Plan
AIS	Aquatic Invasive Species
AQL	Aquatic Life
AQR	Aquatic Recreation
BCWD	Brown's Creek Watershed District
BMP	Best Management Practice
BWSR	Board of Water and Soil Resources
CAC	Community Advisory Committee
CAMP	Citizen Assisted Monitoring Program
CEC	Contaminants of Emerging Concern
CFS	Cubic Feet per Second
CIP	Capital Improvement Project
CJDN	Jordan Aquifer
CJSL	Jordan-St. Lawrence Aquifer
CLP	Curly-leaf Pondweed
CMSCWD	Carnelian Marine St. Croix Watershed District
CMTS	Mount Simon Aquifer
CSAH	County State Aid Highway
CSTL	St. Lawrence Aquifer
CTCE	Tunnel City-Eau Claire Aquifer
CWA	Clean Water Act
CWI	County Well Index
CWP	Clean Water Partnership
DEIA	Diversity, Equity, Inclusivity, and Accessibility
DEED	(Minnesota) Department of Employment and Economic Development
DO	Dissolved Oxygen
DP	Dissolved Phosphorus
DWSMA	Drinking Water Supply Management Area
EAW	Environmental Assessment Worksheet
EIS	Environmental Impact Statement
EMWREP	East Metro Water Resource Education Program
EPA	Environmental Protection Agency
EQB	(Minnesota) Environmental Quality Board
EQIP	Environmental Quality Incentive Program
EWM	Eurasian Watermilfoil

FBI	Family Biotic Index
FEMA	Federal Emergency Management Agency
FIS	Flood Insurance Study
FVA	Function and Value Assessment
GIS	Geographic Information System
GPS	Global Positioning System
GPM	Gallons per Minute
GW	Groundwater
GWMA	Groundwater Management Area
HBI	Hilsenhoff's Biotic Index
HBV	Health Based Value
HOA	Homeowner's Association
HRL	Health Risk Level
HUC	Hydrologic Unit Code
IBI	Index of Biological Integrity
IESF	Iron Enhanced Sand Filter
LA	Load Allocation
LB/YR	Pounds per Year
LCWA	Lack of Cold-water Assemblage
LCCMR	Legislative-Citizen Commission on Minnesota Resources
LID	Low Impact Development
LGU	Local Unit of Government
LiDAR	Light Detection and Ranging
LOMA	Letter of Map Amendment
LOMR	Letter of Map Revision
LSC	Lower St. Croix
LSC1W1P	Lower St. Croix One Watershed One Plan
LSCWP	Lower St. Croix Watershed Partnership
LWMP	Local Water Management Plan
LWRI	Land and Water Resource Inventory
MBS	Minnesota Biological Survey
MDA	Minnesota Department of Agriculture
MDH	Minnesota Department of Health
MGS	Minnesota Geological Survey
M-IBI	Macroinvertebrate Based Index of Biological Integrity
MIDS	Minimal Impact Design Standards
MECA	Minnesota Erosion Control Association

MGY	Million Gallons per Year
MLCCS	Minnesota Land Cover Classification System
MNDOT	Minnesota Department of Transportation
MNDNR	Minnesota Department of Natural Resources
MNRAM	Minnesota Rapid Assessment Method for Evaluating Wetland Functions
MnGEO	Minnesota Geospatial Information Office
MOU	Memorandum of Understanding
MPCA	Minnesota Pollution Control Agency
MPARS	Minnesota Permitting and Reporting System
MRCC	Midwestern Regional Climate Center
MSCWMO	Middle St. Croix Watershed Management Organization
MS4	Municipal Separate Storm Sewer System
MSP	Minneapolis-St. Paul International Airport
MTPL	Multiple Aquifers
MUSA	Metropolitan Urban Services Area
NCDC	National Climatic Data Center
NFIP	National Flood Insurance Program
NHIS	Natural Heritage Information System
NHNRP	Natural Heritage and Nongame Research Program
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRI	Natural Resource Inventory
NWI	National Wetland Inventory
NWS	National Weather Service
OHWL	Ordinary High Water Level
OPDC	Prairie du Chien Aquifer
ORVW	Outstanding Resource Value Water
P8	Program for Predicting Polluting Particle Passage thru Pits, Puddles and Ponds
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PC-SWMM	Personal Computing Storm Water Management Model
PFC	Perfluorochemical
PFOS	Perfluorooctane Sulfonate
PLOAD	Pollutant Loading Modeling Software
PRAP	Performance Review and Assistance Program

PTM	Prioritize, Target, and Measure
PWI	Public Waters Inventory
RCWD	Rice Creek Watershed District
ROW	Right-of-Way
SAHS	Stillwater Area High School
SD	Secchi Disk Transparency
SDS	State Discharge System
SCS	Soil Conservation Service
SNA	Scientific and Natural Areas
SSTS	Subsurface Sewage Treatment Systems
SSURGO	Soil Survey Geographic Data Set from the Natural Resources Conservation Service
STATSGO	State Soil Geographic Data Base for the Conterminous United States
SWA	Subwatershed Analysis
SWBCA	Special Well and Boring Construction Area
SWCD	Soil and Water Conservation District
SWCS	Soil and Water Conservation Society
SWMM	Storm Water Management Model
SWPPP	Stormwater Pollution Prevention Program
TAC	Technical Advisory Committee
TCE	Trichloroethylene
TCMA	Twin Cities Metropolitan Area
TEP	Technical Advisory Panel
THPP	Trout Habitat Preservation Project
TMDL	Total Maximum Daily Load
TMV	Taxable Market Value
TP	Total Phosphorus
TSI	Trophic State Indices
TSMP	Trout Stream Mitigation Project
TSS	Total Suspended Solids
TU	Trout Unlimited
TWP	Township
UG/L	Micrograms per Liter
URL	Uniform Resource Locator
USACE	United States Army Corps of Engineers
USGS	United States Geologic Survey
USFWS	United States Fish and Wildlife Service
UST	Underground Storage Tank

VBWD	Valley Branch Watershed District
VIC	Voluntary Investigation and Cleanup
VOC	Volatile Organic Compounds
VSMP	Volunteer Stream Monitoring Program
WBIF	Watershed-Based Implementation Funding
WCA	Wetland Conservation Act
WCD	Washington Conservation District
WD	Watershed District
WHO	World Health Organization
WHPP	Wellhead Protection Plan
WMat	Winter Maintenance Assessment Tool
WLA	Wasteload Allocation
WMO	Watershed Management Organization
WOMP	Watershed Outlet Monitoring Program
WRAPS	Watershed Restoration and Protection Strategy
XP-SWMM	XP software for the Storm Water Management Model developed by the Environmental Protection Agency

Students from Stillwater Area High School (SAHS) participating in the Volunteer Stream Monitoring Program (VSMP) in 2026.

HOW TO READ THIS PLAN

This watershed management plan outlines Brown's Creek Watershed District's priorities for the next 10 years. The structure of the plan identifies the district's context (section 2), priority concerns (section 3), issues facing the district's water resources (section 4), and how the district proposes to conduct activities to address these issues (section 5). Within this plan, certain sections may be more relevant and insightful to different audiences.

As a general starting point, everyone should review section 2 to understand this plan's context, including the accomplishments BCWD has achieved to date. The prioritization of restoration and protection needs (3.4) also provides important context on which water resources the board, with input from technical advisors and the community, identified as the most important resources to dedicate activities to.

Generally, all readers will benefit from an understanding of the issues by reading the issue statement (4.X.1), the relevance to the district (4.X.2), and sub-issue areas (4.X.3). Individuals wishing to dig deeper into issues of their own interest will find a list of implementation activities in each issue section (4.X.4) detailing how the district intends to address the issue. Specific issues may be of greater interest to certain audiences, as examples:

Member Communities:

- **4.1 Stormwater Runoff Management** identifies priorities related to the district's water quality targets.
- **4.6 Floodplain and Flood Management** identifies how the district is supporting communities in their flood adaptation.
- **4.10 Regulations** identifies rules and regulations the district sets to address water quality, rate, and volume control.

Development Community:

- **4.1 Stormwater Runoff Management** identifies priorities related to the district's water quality targets.
- **4.2 Erosion Prevention and Sediment Control** identifies how the district is encouraging efforts to minimize erosion and sediment transport.
- **4.10 Regulations** identifies rules and regulations the district sets to address water quality, rate, and volume control.

Residents, Businesses, and the General Public:

- **4.11 Recreation** identifies how we protect resources for people to enjoy.
- **4.12 Education, Outreach, and Stewardship** identifies programs the district intends to implement to raise awareness about its work and involve community members.
- **4.13 Land Conservation** identifies opportunities for community members to get involved in protecting important natural areas for a variety of benefits including water quality and habitat.

The final section of the plan relates to implementation and details how BCWD, through its roles and responsibilities established by Minnesota statute, will implement the activities described in section 4 through its programs and capital projects. This section also identifies connections with other guidance documents from the state and county, and opportunities for partnerships that help advance the district's work.

Implementation plan tables at the end of this plan account for the costs associated with district activities as a planning level. Each year, BCWD uses these planning level estimates to develop annual budgets that are reviewed and approved by the Board of Managers.

1 EXECUTIVE SUMMARY

1.1 Purpose of the Watershed Management Organization

Recognizing the need to manage water on a broader basis than municipal or county boundaries, the Watershed Act was passed by the Minnesota Legislature and signed by the governor in 1955. This act provided the means to create watershed districts in the state. As stated in statute, among the purposes of watershed districts is:

> *To conserve the natural resources of the state by land use planning, flood control, and other conservation projects by using sound scientific principles for the protection of the public health and welfare and the provident use of the natural resources.*

Brown's Creek Watershed District was established in 1997 after Brown's Creek Watershed Management Organization was unable to resolve flooding issues in Goggins Lake, Plaisted Lake, School Section Lake, and Kismet Basin. Since these flooding issues were addressed in the early 2000s, BCWD has taken an active role in protecting and restoring Brown's Creek, one of the few remaining designated trout streams in the Twin Cities Metropolitan Area. Over the last 25 years, BCWD has transitioned from focusing on protecting a single species to focusing on the ecological health of the entire watershed. BCWD recognizes that a healthy watershed supports high-quality resources including Brown's Creek and the lakes, ponds, and wetlands that support the constant source of groundwater to this cold-water fishery. BCWD also recognizes its contributions to the St. Croix River, which is designated as a National Wild and Scenic River.

1.1.1 Vision Statement

Brown's Creek Watershed District is made up of communities interlaced with natural corridors that improve the function and value of the district's water resources and support a diverse population of plants, wildlife, and fish. The district brings people and the environment together to preserve and enhance recreational opportunities, the connection between surface water and groundwater in a changing environment, and the quality of these resources for future generations.

1.1.2 Mission Statement

Brown's Creek Watershed District works with the community to:

- Preserve and improve the quality of the district's water and natural resources;
- Educate residents about the value of this ecosystem and advise residents of their potential impacts on the functions and values of the district's water and natural resources;
- Implement acceptable solutions to water-related issues;
- Sustainably accommodate development; and
- Assure that the integrity of the watershed is preserved for future generations.

1.2 Location

The Brown's Creek watershed is in Washington County, Minnesota. It includes portions of the City of Grant, the City of Hugo, the City of Lake Elmo, May Township, the City of Oak Park Heights, the City of Stillwater, and Stillwater Township. Figure 1 identifies the city and township boundaries located within the watershed. Table 1 identifies each city and township, its total population, and how much of its area is in BCWD. These areas were determined using the legal boundary of the district, last updated in 2022.

Figure 1. Jurisdictional Boundaries of BCWD.

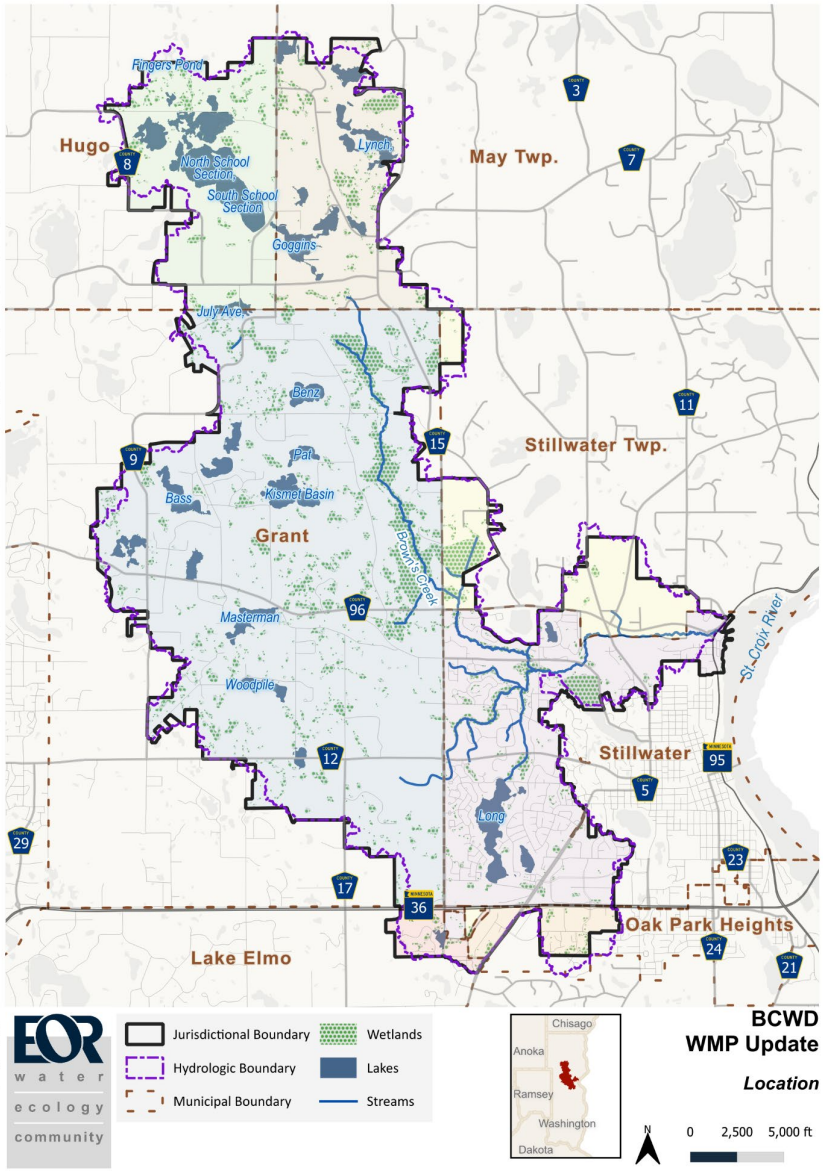


Table 1. Communities located in Brown's Creek Watershed District

City/Township	Total Population (2020 Census)	Area in BCWD [Acres]	Area in BCWD [Square Miles]	Percentage of Total BCWD Area [%]
Grant	3,970	9,353	14.6	51
Hugo	15,766	2,133	3.3	12
Lake Elmo	11,335	225	0.4	1
May Township	2,670	2,023	3.2	11
Oak Park Heights	4,849	328	0.5	2
Stillwater	19,394	3,172	5.0	17
Stillwater Township	1,866	1,041	1.6	6
Total	**59,850**	**18,276**	**28.6**	**100**

1.3 Primary Issues Addressed in the Plan

There are 15 issue categories identified in the 2027-2036 Watershed Management Plan, summarized below. Each category is broken down into sub-issue areas and is described in more detail in section 4, *Issues, Policies, Goals, and Implementation Activities to Address Priority Concerns.* As section 3, *Assessment of Priority Concerns*, describes, many of the categories and sub-issue areas are the same as those identified in previous watershed management plans. Pollutants of Emerging Concern is a new category in the 2027-2036 plan, and Climate Resilience has been removed as a separate category, instead incorporated within each issue.

1. **Stormwater Runoff Management (Section 4.1)**

   Proper management of runoff from impervious surfaces can reduce common environmental impacts including increased runoff rates, decreased water quality, and reduced groundwater recharge. Urbanization and land-use changes often involve an increase in imperviousness, compaction of native soils, and removal of existing vegetation. Unless land-use changes are properly managed, these activities will increase the rate and volume of stormwater runoff generated in the watershed and will decrease the quality of surface water resources and the quantity of groundwater resources. These urbanized areas contribute additional runoff volume and increased runoff rates to local water bodies compared to pre-settlement conditions.

2. **Erosion Prevention and Sediment Control (Section 4.2)**

   Unless properly managed, land-disturbing activities can intensify erosion and negatively impact soil health, leading to increased transport of sediment into surface waters. Increased erosion can also cause the formation of gullies in areas with unstable soils. Sedimentation in waterways can lead to fish kills, clogged streams, reduced storage volume of reservoirs, and reduced stormwater infiltration by sealing permeable soils.

3. **Stream Management (Section 4.3)**

   Land-use alterations disrupt the hydrology and ecology of stream ecosystems. For example, increased imperviousness in a resource's contributing drainage area inhibits infiltration of rainfall and snowmelt. This results in reduced baseflow, larger and more frequent stormwater discharges, and increased temperature and pollutant loads. These factors contribute to channel enlargement, changes to instream habitat, decreased aquatic diversity, and overall resource degradation. A portion of Brown's Creek does not meet the state's water quality standards and is impaired for aquatic life due to a lack of cold-water fish assemblage and high turbidity.

4. **Lake Management (Section 4.4)**

   The Brown's Creek watershed contains a few small, shallow lakes and several large open-water wetlands and ponds that are locally regarded as lakes. Most of the lakes in the watershed have been impacted by land-use changes that have resulted in degraded water quality, changes in water level, and/or the spread of aquatic invasive species. Other lakes have not seen dramatic changes in land-use but are at risk of having impacts on water quality, water level, fisheries, and recreational use if current or future land-use practices are not managed properly.

5. **Wetland Management (Section 4.5)**

   The wetland resources in the watershed are at risk of encroachment from development. They are also at risk of degradation from land-use practices that increase stormwater input and decrease groundwater contributions, thereby decreasing wetland water quality, altering hydrologic patterns, and limiting wildlife habitat within and adjacent to wetlands. The watershed contains several unique wetlands areas that support critical functions and values worth preserving.

6. **Floodplain and Flood Management (Section 4.6)**

   BCWD risks losing flood storage areas through land and basin alterations. This loss of flood storage can increase the frequency, elevation, and duration of flooding and can increase impacts to infrastructure, property, and the natural environment.

7. **Groundwater Management (Section 4.7)**

   Land-altering activities can impact both groundwater resources and groundwater-dependent natural resources. Without proper land-use and water resource management, reduced groundwater recharge, reduced groundwater quality, reduced drinking water supply, increased groundwater flooding, and alterations to the functions and values of groundwater-dependent natural resources may occur.

8. **Ecological Health (Section 4.8)**

   The restoration and protection of BCWD's surface water resources requires a healthy watershed where natural land cover supports hydrologic and geomorphic processes, habitat of sufficient size and quality to support native aquatic and riparian species, and water quality that supports healthy biological communities. Protecting these resources requires ongoing work to improve the district's understanding of the interrelationships between land and water resources.

9. **Monitoring and Data Collection (Section 4.9)**

   Monitoring and research data are needed to understand the watershed, evaluate issues, and determine appropriate watershed-management approaches. In addition, long-term monitoring provides the district with the data needed to demonstrate performance towards meeting the goals and objectives of the watershed management plan and the Brown's Creek total maximum daily load (TMDL) implementation plan. BCWD will continue to ensure that collected data and assessments are in a format that is understandable to the public.

10. **Regulations (Section 4.10)**

    Under Minnesota Statutes section 103D.341, subdivision 1, watershed districts must adopt rules "to accomplish the purposes of [the watershed act] and to implement the powers of the managers." These purposes include conservation of water for public use; controlling erosion and siltation of lakes, streams, and wetlands; and protecting water quality in these water bodies. Presenting rules in a clear, understandable fashion facilitates compliance by permit applicants. Coordination with district partners on regulatory issues is needed for more efficient and effective stormwater and wetland-protection regulation across the watershed.

11. **Recreation (Section 4.11)**

    The Brown's Creek corridor and other natural areas within the watershed provide opportunities for fishing, wildlife viewing, and outdoor learning. As the district implements projects that provide more opportunities for people to engage with resources like Brown's Creek, ongoing monitoring is critical to ensure these resources are protected from overuse.

12. **Education, Outreach, and Stewardship (Section 4.12)**

    Successful efforts to achieve BCWD's goals will require the involvement of residents, businesses, and municipalities. These groups will be most interested in active participation in district projects, and in water and natural resource protection in general, if they understand the issues and the benefits of water resource management.

13. **Land Conservation (Section 4.13)**

    Changes in land-use threaten to degrade the quality of water resources and limit wildlife habitat. Land-use practices can reduce the area of land covered with native vegetation, increase erosion and stormwater runoff, and break wildlife habitat into small, disconnected areas unable to support high-quality, diverse populations. The development of a land conservation program allows entities to set aside critical parts of the landscape for the protection and restoration of downstream surface and groundwater resources and protect recharge areas for groundwater.

14. **Funding (Section 4.14)**

    Funding is necessary to operate the programs and to complete the projects that protect and improve the resources of the Brown's Creek watershed.

15. **Pollutants of Emerging Concern (Section 4.15) –** ***NEW to 2027-2036 plan***

    A growing body of research and monitoring activity has identified risks to water quality posed by new pollutants in surface and groundwater resources. Prominent pollutants of emerging concern include per- and polyfluoroalkyl substances (PFAS) and microplastics.

A painted turtle and white water lilies found during a vegetative survey of South School Section Lake in 2025.

1.4 Primary Goals in the Plan

The primary goal of Brown's Creek Watershed District is to restore and protect the surface water resources located in the watershed. The list of surface water resources is included in Appendix A. Because of the watershed's geologic setting, many of the resources are groundwater-dependent. As a result, BCWD is very interested in managing land-use in a manner that mimics the natural hydrology of the system, thereby protecting both the surface water and groundwater resources. The main goal for each of the issue categories can be synthesized as follows:

1. **Stormwater Runoff Management:** Improve the quality and quantity of stormwater runoff to reduce impacts (e.g., pollutant loadings, loss of groundwater recharge, alterations to wetland hydrology) to downstream waterbodies.
2. **Erosion Prevention and Sediment Control:** Protect the water bodies in the watershed from the impacts of sedimentation, excessive streambank and shoreline erosion, and adjacent upland erosion.
3. **Stream Management:** Improve the water quality and ecological integrity of Brown's Creek and its tributaries.
4. **Lake Management:** Restore the water quality of degraded lakes and protect the water quality in lakes that meet state water quality standards.
5. **Wetland Management:** Maintain or improve the quality of the watershed's wetland systems.
6. **Floodplain and Flood Management:** Protect and manage flood storage areas to reduce impacts of flooding and promote groundwater recharge.
7. **Groundwater Management:** Protect the quantity and quality of groundwater to maintain baseflow to the groundwater-dependent natural resources in the watershed and contribute to protecting drinking water supply for human health benefits.
8. **Ecological Health:** Promote the ecological integrity and connectivity of the ecosystems in the watershed.
9. **Monitoring and Data Collection:** Collect high-quality monitoring data that can be used to support cost-effective management decisions and evaluate performance in achieving the goals of this plan.
10. **Regulations:** Maintain a clear and effective permitting program to protect surface water and groundwater resources and prevent flooding in the watershed.
11. **Recreation:** Manage the natural resources in the watershed to enhance their recreational value.
12. **Education, Outreach, and Stewardship:** Provide education and outreach services to all audiences to promote good stewardship of the water and natural resources.
13. **Land Conservation:** Identify and pursue opportunities to preserve and restore land in the watershed to protect the quality of downstream resources.
14. **Funding:** Maintain a tax levy that is adequate to conduct the activities of the district but minimizes impact on taxpayers.
15. **Pollutants of Emerging Concern:** Collaborate with watershed partners to further collective understanding of how these pollutants are impacting the watershed and steps that can be taken to mitigate these impacts.

1.5 Major Actions in the Plan

One of the primary actions of the plan is establishing a realistic and attainable implementation plan. The BCWD Board of Managers very deliberately projected an annual budget that requires only a moderate annual tax levy increase, and the managers were equally deliberate in directing how the annual budget was allocated to the district's programs. The managers decided that approximately 35% of the annual budget should be allocated to the district's Capital Improvement Program, which means that a third of BCWD's budget goes to construction projects that have a direct benefit to the surface water or groundwater resources in the watershed. In addition, the managers decided that the Capital Improvement Program budget should be allocated to the watershed's impaired resources in the following manner (as described in more detail in section 3.4):

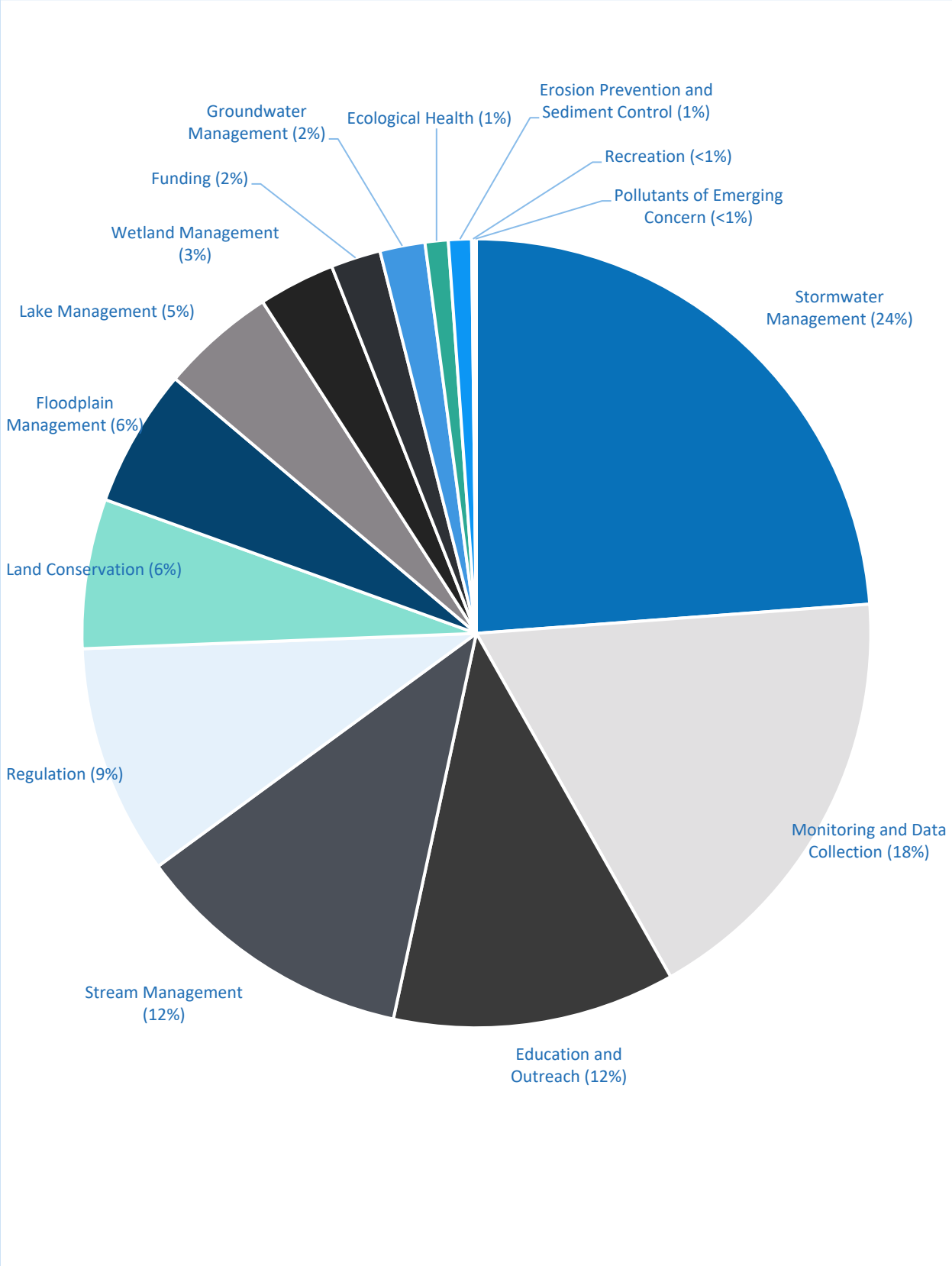
- 40% to Brown's Creek
- 30% to lakes and ponds
- 15% to wetlands
- 10% to uplands and ecological health
- 5% to groundwater

The plan accounts for $17,028,500 worth of programs and projects over 10 years (or on average $1,702,850 in spending each year). Additionally, $689,000 worth of programs and projects were identified by the board as lower priority initiatives to pursue if additional funding is available.

Figure 2 on the following page illustrates the percentage of the annual budget allocated to each issue category on average over the 10-year timeframe of the plan. It shows that the majority of BCWD's annual expenditures are for Stormwater Management, Monitoring and Data Collection, Education and Outreach, Stream Management, and Regulations. These highest-expenditure issues closely match the 2017-2026 plan with the exception of Education and Outreach which has a significant increase. The increase reflects recognition by BCWD that educating and engaging the community in stewardship is a critical piece to attaining its water and natural resource goals. The district continues to manage restoration and protection activities identified for the surface water resources in the watershed. Capital improvement projects identified in the Brown's Creek TMDL Implementation Plan and the various lake management plans are included in these issue categories.

A smaller portion of the annual expenditures are allocated to Land Conservation, Floodplain and Flood Management, Lake Management, Wetland Management, Groundwater Management, Funding, Erosion Prevention and Sediment Control, Ecological Health, Recreation, and Pollutants of Emerging Concern. For Wetland Management, Erosion Prevention and Sediment Control, and Floodplain and Flood Management, many of the goals identified under these categories are addressed by BCWD's regulatory program. For the other categories, the total amount of budget identified for implementation is lower or implementation will rely more on partnerships with member communities, Washington County, and/or state agencies. Opportunities to coordinate shared services such as this reflect a lower cost for the issue category in the annual expenditures.

Figure 2. BCWD Annual Budget Percentage Allocation per Plan Issue Category



1.6 Responsibilities of Local Governments Related to Plan Implementation

The watershed management plan includes strategies and programs that the district may pursue to fulfill its water resource mission. Many of these will involve local government participation (as described in more detail in section 5.7). Examples include:

- Inventory of local stormwater control standards
- Review of local land use ordinances for water resource impacts
- Education and outreach programs
- Monitoring and data acquisition programs

However, the programs identified in the plan generally do not compel local government involvement. In pursuing a specific activity under the plan, the district will seek to develop a partnership with affected local governments, allowing each entity to contribute as befits its interests and objectives that can be cost-effectively pursued in common with BCWD.

State and local government leaders at the Brown's Creek restoration site during the 2026 Governor's Fishing Opener.

2 INTRODUCTION AND PLAN REQUIREMENTS

2.1 History

Brown's Creek Watershed District was established in 1997 when Brown's Creek Watershed Management Organization was unable to resolve flooding issues in Goggins Lake, Plaisted Lake, and School Section Lake. The lakes had merged due to rising water levels to form one large shallow basin of approximately 440 acres. The flooding of homes and septic systems surrounding the expanded lake basin caused property damage and threatened lake water quality.

The Trout Habitat Preservation Project (THPP), the first capital improvement project of the newly formed BCWD, was designed to alleviate flooding in the Goggins-School Section chain of lakes while protecting the temperature-sensitive resources of Brown's Creek. This award-winning project took a sustainable approach to addressing the flooding concerns by mimicking the natural hydrology of the watershed and routing excess surface water back into the groundwater system near the headwaters of Brown's Creek through a series of created wetlands and infiltration basins.

Since this project, BCWD has taken an active role in protecting and restoring Brown's Creek, one of the few remaining designated trout streams in the Twin Cities Metropolitan Area. Brown's Creek stretches from the large wetland complexes in the northern portion of the watershed through a landscape dominated by rural development and hobby farms to the more urban portion of the system where it traverses a steep, heavily wooded ravine before entering the St. Croix River.

Historically, BCWD's focus has been on protecting the trout stream from the impacts of development by adopting stormwater management rules and retrofitting those portions of the watershed that were developed before stormwater management rules were in place. BCWD was managing the creek for a single species, namely the declining trout population. In 2002, Brown's Creek was listed on the federal 303(d) list as impaired for biota (fish and macroinvertebrates). In 2008, after further research and data collection, Brown's Creek (from 110th Street to the St. Croix River) was deemed impaired for lack of cold-water assemblage. This meant that Brown's Creek, as an aquatic ecosystem, was unable to support a healthy population of fish and the macroinvertebrates (aquatic insects) that form an important part of its food chain. Once this impairment was assigned, BCWD shifted its focus to managing the entire ecosystem: the cold-water resource that supports an abundance of flora and fauna that relies on a constant source of cold, clean water to survive.

As this plan highlights, the overall health of the resources in Brown's Creek watershed is improving. Since the last plan, Plaisted Lake has been delisted, and water quality in Long Lake has improved to the point that it may also qualify for delisting. Stakeholders in the planning process have expressed strong support for continuing the district's successful work.

In preparing this plan, the district evaluated its programs, policies, and projects through both climate change and equity lenses to ensure that future actions not only strengthen resilience in natural systems, people, and infrastructure, but also address historical gaps in equity.

Looking ahead, one of the highest priorities for the next decade is ecological health. The discovery of rare aquatic plant species, the identification of high-quality wetland systems, and the restoration of the land conservation area all underscore the importance of protecting these resources for future generations. By improving upland functions and values, BCWD is enhancing the management of downstream resources and the diverse plant and animal communities they sustain.

2.2 Accomplishments

As the previous section describes, BCWD has gone from an organization established to respond to a crisis to one that strategically addresses its resource protection and restoration needs. Figure 3 summarizes the main projects and programs undertaken by Brown's Creek Watershed District since its inception in 1997.

Figure 3. BCWD Projects and Programs Timeline

2.3 General Purpose and Requirements of Watershed Districts (Statutory Background)

Minnesota Statutes chapters 103B and 103D specify the responsibilities and authorities of watershed districts. Specifically, section 103D.201 states that the general purpose of watershed districts is "to conserve the natural resources of the state by land use planning, flood control, and other conservation projects by using sound scientific principles for the protection of the public health and welfare and the provident use of the natural resources."

Minnesota Statutes section 103B.201 provides further purposes for metropolitan watershed districts:

- Develop watershed plans, projects, and programs to protect, preserve, and use natural surface and groundwater storage and retention systems.
- Minimize public capital expenditures needed to correct flooding and water quality problems.
- Identify and plan for means to effectively protect and improve surface and groundwater quality.
- Establish more uniform local policies and official controls for surface and groundwater management.
- Prevent erosion of soil into surface water systems.
- Promote groundwater recharge.
- Protect and enhance fish and wildlife habitat and water recreational facilities.
- Secure the other benefits associated with the proper management of surface and groundwater.

BCWD has the responsibility to assess and manage land and water resources for the purposes listed above and as indicated elsewhere in chapters 103B and 103D.

2.4 BCWD Vision and Mission

2.4.1 Vision Statement

Brown's Creek Watershed District is made up of communities interlaced with natural corridors that improve the function and value of the district's water resources and support a diverse population of plants, wildlife, and fish. The district brings people and the environment together to preserve and enhance recreational opportunities, the connection between surface water and groundwater in a changing environment, and the quality of these resources for future generations.

2.4.2 Mission Statement

Brown's Creek Watershed District works with the community to:

- Preserve and improve the quality of the district's water and natural resources;
- Educate residents about the value of this ecosystem and advise residents of their potential impacts on the functions and values of the district's water and natural resources;
- Implement acceptable solutions to water-related issues;
- Sustainably accommodate development; and
- Assure that the integrity of the watershed is preserved for future generations.

2.5 District Boundaries (Jurisdictional Area)

Brown's Creek Watershed District shares legal jurisdiction with seven municipalities: the City of Stillwater, City of Oak Park Heights, City of Lake Elmo, City of Grant, City of Hugo, May Township, and Stillwater Township. Figure 1 showed the legal boundaries of the district and the hydrological boundaries of the watershed. The hydrologic boundary delineates areas that drain to Brown's Creek. The legal boundary shows the jurisdiction of the district; it corresponds as closely as possible to the hydrologic boundary while following established property lines.

2.6 Board of Managers

Brown's Creek Watershed District is governed by a five-member board of managers appointed by the Washington County Board of Commissioners and serve staggered three-year terms. Watershed district managers must be voting residents of the watershed and cannot be public officers of the county, state, or federal government, except that a soil and water conservation district supervisor may be a manager. The managers involved in the development of this plan included Klayton Eckles (President), Celia Wirth (Treasurer), Chuck LeRoux (Vice President), Debra Sahulka (former Secretary), Griffin Brod (2nd Vice President), Luke Mattson (Secretary), and Larry Odebrecht (former Manager). All managers, past and present, are listed in Table 2 in reverse chronological order.

Table 2. Board of Managers and Terms in Office

Manager	Term
Luke Mattson	2026 - present
Griffin Brod	2025 - present
Larry Odebrecht	2024 - 2025
Debra Sahulka	2024 - 2025
Celia Wirth	2021 - present
Rob McKim	2021 - 2022
Chuck LeRoux	2020 - present
Klayton Eckles	2018 - present
Anne Maule Miller	2016 - 2020
Sharon Schwarze	2013 - 2020
Rick Vanzwol	2005 - 2013
Connie Taillon	2004 - 2018
Gail Pundsack	2004 - 2016
Gerald Johnson	2003 - 2024
Barb Medinger	2002 - 2004
Tim Freeman	2002 - 2003
Jerry Turnquist	2001 - 2001
Don Peterson	1999 - 2001
Craig Leiser	1997 - 2021
Karen Kilberg	1997 - 2004
Ned Gordon	1997 - 2003, 2003 - 2004
Dan Potter	1997 - 2000
Jon Michaels	1997 - 1999

2.7 Summary of Issues, Goals, and Strategies

Many of BCWD's issues have been consistent from plan to plan because many of the resource protection and restoration needs have been the same. Concerns related to development impacts continue to be articulated under Stormwater Runoff Management, Erosion Prevention and Sediment Control, Floodplain and Flood Management, and Regulations, while concerns related to specific resources are articulated under Lake Management, Stream Management, Wetland Management, Groundwater Management, Ecological Health, and Monitoring and Data Collection. While the issue categories have remained fairly consistent, the policies, goals, and implementation activities have changed more significantly. As state water quality standards have evolved and the district has collected more data on the quality of its resources, BCWD's goals and activities have become more targeted.

New to this plan is the use of both climate change and equity as lenses in all other issue categories to recognize the intersection of environmental and social factors. Rather than being presented as standalone issue categories, these perspectives, as described below, have been considered at each stage of the planning process to ensure that the strategies included in the implementation plan not only achieve BCWD's watershed management goals but are also equitable and build resilience in the face of climate change.

2.7.1 Climate Change

Within the last ten years, the watershed has experienced several climate-related impacts. The Minnesota Department of Natural Resources notes that 2010 to 2020 was the wettest decade on record (Blumenfeld, 2020). More precipitation is coming from larger storm events (One inch or more per day), and the frequency of three-inch per day storm events is increasing. These conditions resulted in flooding throughout Washington County, including Kimbro Basin, which overtopped County Road 12 and encroached on neighboring properties, raising concerns about access to and flooding of homes and public safety. Similarly, changes in temperature patterns are impacting the watershed's resources. Winter nights are warming ten times faster than summer temperatures, and the lowest temperature of winter is also increasing. This means that liquid precipitation during winter is increasing and days with snow are decreasing. The winter of 2023 was the warmest on record throughout the state. The warm conditions during the early winter delayed ice formation on lakes with many experiencing their latest ice-in dates on record. These types of changes have wide-ranging consequences for water quality, fisheries, recreation, and local economies. A list of climate impacts and their indicators are summarized in Appendix B.

Climate change impacts have been considered and summarized for each issue in the watershed management plan in Appendix B. Implementation activities to enhance the resilience of the watershed's natural and built systems are indicated with icon shown here:

2.7.2 Equity

Government agencies are increasingly acknowledging that historical decision-making generated outcomes that have advantaged some while disadvantaging others, predominately along lines of social-vulnerability factors such as race, age, gender, as well as other individual and intersecting identities. To address these historic inequalities, the BCWD Board of Managers adopted the following policy at its August 2024 meeting:

Equity Policy

Brown's Creek Watershed District is a special-purpose unit of government established under Minnesota Statutes chapters 103B and 103D to mitigate damage from flooding and improve Brown's Creek and the wetlands, lakes, and streams in the watershed. As a public entity working on fundamental water issues that affect everyone in the watershed, BCWD is obligated to ensure its expenditure of tax funds accrues to the benefit of all. In pursuit of this goal, BCWD will ensure diversity, equity, inclusion, and accessibility influence development and implementation of its programs and projects and will work toward addressing current and historical inequities in how land and waters have been managed and improved in the watershed. BCWD will incorporate diverse views in its decision-making, robustly communicate and engage with historically underserved communities, provide equitable access to information and resources, and use social vulnerability and related indices in developing and implementing its programs and projects.

The policy has informed BCWD's stakeholder outreach and plan development and will be reflected in its implementation. Implementation activities to address social vulnerability are indicated with the icon shown here:

Community members attending BCWD's annual community event at Brown's Creek Park in 2025.

3 ASSESSMENT OF PRIORITY CONCERNS

This section of the plan describes the process BCWD undertook to identify its priority concerns.

3.1 Plan Notification Process

Brown's Creek Watershed District initiated the plan-development process on December 14, 2023, by notifying the designated state plan-review agencies, Washington County, adjacent watershed management organizations, and watershed communities that it was starting the plan update process and soliciting their priority issues, summaries of relevant water management goals, and water resource information. BCWD received feedback from the Board of Water and Soil Resources, Metropolitan Council, Minnesota Department of Natural Resources, Minnesota Department of Agriculture, Minnesota Department of Health, Minnesota Pollution Control Agency, Washington County, and the City of Hugo. This information was reviewed against BCWD's issue statements for consistency and discussed with the district's Technical Advisory Committee (which includes representation from each plan review agency, Washington County, and watershed communities) during its initial planning meeting on July 9, 2024.

3.2 Review of Existing Plans and Policies

The first step to determine BCWDs' priority concerns was to review the issues, policies, and goals established in the previous watershed management plans. While many of the issues remain the same today, information collected over the last ten years allowed BCWD to modify the policies and goals by making them more specific and, in many cases, more readily measurable. Much of this new information was compiled from plans and feasibility studies conducted by BCWD, Washington County, state agencies, and other entities, and it informed BCWD's assessment of priority concerns. Information collected during these existing plan and policy reviews was supplemented with information collected from the plan notification process and the stakeholder and public involvement process described here. The table summarizing all the information collected during this stage of the plan development process can be found in Appendix C – Summary of Civic Engagement Input.

3.3 Stakeholder and Public Involvement

BCWD held several events throughout the watershed management plan update process to review its issues, policies, goals, and implementation activities and to collect new information from stakeholders and the public to inform priorities.

BCWD held an open house on July 9, 2024, at the Stillwater Public Library to publicly kick off the plan update process. This event was held after the Technical Advisory Committee's first meeting, the plan initiation meeting. Input on the plan update was sought from groups as described in Table 3. Information collected during the stakeholder and public engagement process is summarized in Appendix C.

While much of the feedback received supported the issues, policies, and goals from previous plans, new information was introduced that led to refining existing or developing new issues, policies, and goals. For example, the Community Advisory Committee identified the importance of continuing and expanding land conservation and re-naturalization in the interest of water quality and quantity management while also providing co-benefits. Through proposed efforts, such as planting native vegetation, the district seeks to encourage landscapes that retain more water and require fewer fertilizers, while simultaneously improving ecological health through the creation of habitat for native species. Examples of this appear throughout the plan, whether it be cost-sharing turf conversions (Stormwater Runoff Management), shoreline restoration (Lake Management), and habitat creation (Ecological Health). This change represents an example of efforts within this plan to identify and make it easier to take actions that deliver multiple benefits through investments by the district.

Table 3. Summary of Stakeholder and Public Involvement Process for the 2027-2036 Plan

Audience	Meeting Date	Meeting Goals/Objectives
BCWD Community Advisory Committee	June 10, 2024	Introduce the plan update process and timeline and begin discussion to solicit feedback on plan issues Education and Outreach and Recreation
	August 12, 2024	Solicit feedback on plan issues Education and Outreach and Recreation.
	October 14, 2024	Solicit feedback on plan issues Land Conservation and Ecological Health.
	December 9, 2024	Utilize a climate storytelling approach to understand how people are experiencing the impacts of climate change on the watershed and its resources.
	April 14, 2025	Discuss program and project priorities, capital improvement project allocations, and implementation actions.
	October 13, 2025	Review the implementation plan.
BCWD Technical Advisory Committee	July 9, 2024	Introduce the plan update process and timeline, review BCWD's accomplishments across all issue areas, review notification letter feedback, and solicit feedback on key takeaways from the 2017-2026 plan, agency plans/ programs/ initiatives, partnership opportunities, and priorities.
	August 20, 2024	Solicit feedback on plan issues Stormwater Management and Stream Management.
	October 22, 2024	Solicit feedback on plan issues Lake Management and Wetland Management.
	February 25, 2025	Solicit feedback on plan issues Groundwater Management, Floodplain and Flood Management, and Erosion and Sediment Control
	April 22, 2025	Discuss program and project priorities, capital improvement project allocations, and implementation actions.
	October 28, 2025	Review the implementation plan.
Board Workshops	June 3, 2025	Review historic implementation priorities, identify priorities for the next 10 years, and review issue implementation plan items.
	August 26, 2025	Continue review of issue implementation plan items from June meeting.
Community Events	September 21, 2024	Use BCWD's annual community event at Brown's Creek Park on the Brown's Creek State Trail to inform community members about the watershed management plan update process and discuss their priorities to incorporate into the plan.
Community Meetings	September to October 2025	Meet with the City of Stillwater, City of Oak Park Heights, City of Hugo, City of Grant, Stillwater Township, May Township, and Washington County to discuss opportunities for collaboration on projects supporting water quality improvement and floodplain/flood Management.
Development Community	November 21, 2024	Meet with resident representatives, HOAs, permittees, developers, BCWD communities, agency partners, and neighboring watershed districts to discuss the regulatory program's rules, processes, outreach, and information.
	April 4, 2025	Report on findings from the November meeting and identify next steps.

3.4 Prioritization of Restoration and Protection Needs

The BCWD Board of Managers participated in a series of plan review sessions as part of their monthly meetings and special workshops that refined their priorities for watershed management issues, goals, and implementation activities over the 10-year timeframe of this plan.

During these plan review sessions, the managers discussed how they would like to address new issues such as Pollutants of Emerging Concern. These sessions provided an opportunity to review and adjust direction for the district's work to address existing issues and adjust their prioritization based on how these issues are evolving. The key findings of these discussions are summarized below:

- BCWD had multiple discussions about resources with rare and unique species – particularly in wetland and upland areas where initial surveying has taken place. Discussions centered on opportunities to achieve water quality and quantity benefits while simultaneously achieving co-benefits that improve the ecological health of resources. This plan proposes actions that incorporate improvements to ecological health such as re-naturalization, land conservation, and soil health improvements that help protect or restore the district's water resources.
- BCWD developed an equity policy, identifying the need to ensure equitable development and implementation of projects and programs and the importance of engaging diverse and underserved communities.
- BCWD integrated their response to climate change throughout all the issues rather than as its own category. Climate change impacts every aspect of the district's water management role – whether through changes to flooding potential, the spread of terrestrial or aquatic invasive species, or changes in water resource dynamics due to seasonal changes in precipitation and temperature.
- BCWD developed policies and goals to further understand the pollutants of emerging concern impacting watershed resources and to collaborate with partners to address this issue. By adding additional monitoring parameters to the district's existing monitoring program, BCWD will provide its state agency partners with data to make better decisions.
- BCWD developed policies and goals to address the management of groundwater recharge and supply within its roles and responsibilities as a partner in broader groundwater management work being undertaken at the county, regional, and state scale. Meetings with the Technical Advisory Committee highlighted the high priority BCWD places on groundwater resource management in partnership with Washington County, the Metropolitan Council, the Minnesota Department of Health, and the Minnesota Department of Natural Resources.
- BCWD revised its flood management policies and goals to reflect an updated flood vulnerability assessment discussed with member communities. Results from these discussions were incorporated into the Flooding and Floodplain Management Plan (Table 83).
- BCWD explored how to prioritize the management of its surface water resources. The lakes in the watershed do not have public access, and many are shallow lake systems that may not support the recreational activities lakeshore residents have come to expect. BCWD remains committed to improving and preserving water quality in its lakes and ponds as part of its system-wide approach to tackling water quality in pursuit of its total maximum daily load (TMDL) goals.

Due to current water resource impairments in the watershed (Brown's Creek, Long Lake, Benz Lake, Lynch Lake, South School Section Lake, Goggins Lake, and the St. Croix River) and completed plans that identify pollutant-reduction goals, the BCWD Board of Managers decided to allocate its Capital Improvement Program budget as identified in Table 4.

Table 4. Capital Improvement Program Allocation by Resource

CIP Budget Allocation	Resource Allocation
40%	**Brown's Creek and its tributaries** Feedback emphasized exploring opportunities upstream of the creek and tributaries to improve downstream conditions, ultimately contributing to improving the St. Croix River.
30%	**Lakes and Ponds** Feedback prioritized restoration of impaired lakes (Long, South School Section, Benz, Lynch, and Goggins Lakes) more than protection of non-impaired lakes (Plaisted, Bass, Masterman, Pat, and Wood Pile Lakes) while also recognizing that reactive restoration activities are generally more costly than proactive protection activities.
15%	**Wetlands** Feedback was equally divided on prioritizing wetlands to restore and protect.
10%	**Uplands and Ecological Health** Feedback focused on continued improvements to the Brown's Creek Conservation Easement Area (110th St Property), identifying similar conservation easements, and broader uptake of ecologically beneficial practices to the landscape.
5%	**Groundwater** Feedback emphasized considering where BCWD is best positioned to contribute to addressing this issue relative to partners with a broader regional mandate.

This allocation represents BCWD's best effort to make a definitive, forthright, and doable funding plan to address the priorities articulated in this plan. A key element of the implementation of the plan, though, is continuing to learn more about the stresses and challenges on watershed resources, and BCWD will remain open and willing to reassess its funding priorities in light of new data, additional analysis, and the successes and setbacks that are necessarily a part of pursuing goals and priorities in a dynamic system. If and when major shifts in funding allocations are necessary, BCWD will seek input from stakeholders as it amends the plan in accordance with the procedures provided in Minnesota law and section 5.8.

3.5 Adaptive Management Strategy

Minnesota's resources require restoration and protection strategies to ensure they meet their designated uses in the future. As this plan indicates, several resources in the watershed are listed on the federal 303(d) list as impaired while others are of relatively high quality. In addition, Brown's Creek drains to the St. Croix River, a National Wild and Scenic Riverway, with a portion impaired for excess phosphorous. Restoration activities have been identified to address the impairment of all resources that do not meet state water quality standards. For all other resources, protection strategies have been identified to maintain and/or improve the status quo. This section explains BCWD's approach for managing the resources that have been evaluated to date, either through a total maximum daily load (TMDL) study and implementation plan or a lake management plan.

While the estimated cost to achieve Brown's Creek's pollutant load reduction goals are significant and unachievable over the 10-year timeframe of this plan, BCWD has committed to allocating a majority of its budget to address the restoration needs of this resource. Since its inception, the BCWD Board of Managers has recognized the value of Brown's Creek as an ecological treasure and has taken significant steps to

ensure its protection. Protection and restoration of this resource have evolved over BCWD's existence, now taking an ecosystem-wide approach to improving the resources upstream of Brown's Creek and work towards achieving its TMDL goals. The Brown's Creek State Trail's development exposed a larger audience to investing in this resource. Numerous trail users and long-time residents of the watershed have commented on the beauty of Brown's Creek, noting that they had not known how it flowed through downtown Stillwater into the St. Croix River. Now that they can see the creek and experience all that the Brown's Creek corridor has to offer, they have expressed the desire to restore and protect this resource for generations to come.

The Minnesota Pollution Control Agency updated Brown's Creek's impaired status in 2022, adding impairments for aquatic life (fish bioassessments). While BCWD has developed a TMDL Implementation Plan, thermal study, and sediment source assessment which identify a multitude of projects designed to address the sediment and thermal loads to the system, the impairment is for aquatic biota and lack of cold-water assemblage. This means that the creek will meet state water quality standards when it supports a healthy fish and macroinvertebrate community. As BCWD continues to implement management strategies to improve in-stream habitat, it will also monitor the biology of the resource to see how the expenditure of public dollars is making a difference. Over time, the district may learn that improvements to monitoring programs, existing regulations, and/or climate changes may shift the resource restoration and protection goals. As this information becomes available, the BCWD Board of Managers will reassess the goals and strategies identified in this plan and change its course of action as appropriate.

BCWD's management strategy for its impaired lakes is to address the pollutant reduction goals on those lakes that have the most potential to improve downstream resources. The degraded water quality of Long Lake in the early 2000's sparked local concerns for resource management. As a result, a lake management plan was developed to identify projects that should be implemented to meet state water quality standards. In addition, improvements in the Long Lake subwatershed have a direct impact on pollutant loads to all downstream waterbodies such as Sinnet's Pond, Brown's Creek, Lake McKusick, and the St. Croix River, which will assist the district and member communities in meeting their load reduction allocations and/or goals. Similarly, lakeshore residents in the northern portion of the watershed have indicated a strong desire to address the declining water quality on the northern chain of lakes. BCWD developed a Northern Chain of Lakes Watershed Restoration and Protection Plan which identifies numerous watershed-wide and in-lake management strategies to meet state water quality standards. These improvements have been incorporated into this plan as implementation activities under the Lake, Pond, and Wetland Management implementation plan (Table 82). Improvements made to the northern chain of lakes will have a direct impact on downstream resources such as the headwaters of Brown's Creek. As BCWD implements management strategies to restore and protect its lake systems, it will find that improvements to monitoring programs, changes in climate, and/or changes in attitudes and behaviors may shift the resource and protection goals. Again, as this information becomes available, the BCWD Board of Managers will reassess the goals and strategies identified for its lake systems and change its course of action as appropriate.

4 ISSUES, POLICIES, GOALS, AND IMPLEMENTATION ACTIVITIES TO ADDRESS PRIORITY CONCERNS

Brown's Creek Watershed District developed a set of issue statements and corresponding policies and goals for managing water and natural resources in the watershed. These were based on input from the Community Advisory Committee, the Technical Advisory Committee, residents, and members of the development community. These issue statements, policies, and goals serve as a guide for the BCWD Board of Managers and were used to develop the implementation program in section 5.

This plan contains issue statements, policies, goals, and implementation activities grouped by issue area. Because issues naturally flow into policies, goals, and implementation activities, this is more intuitive and user-friendly than having separate chapters for each. Section 5, *Implementation,* pulls together all the issue-specific implementation strategies that BCWD may undertake within the timeframe of the plan. This format will make the plan more of a working document, providing clear guidance for BCWD's decision-making and an understandable description of the district's direction for interested residents, businesses, and local and state officials.

The format of this section and how it translates into section 5, *Implementation,* is described as follows:

- The first table in each issue category identifies the sub-issue area(s) and the supporting policies, goals, and implementation activities. The sub-issue area is identified in a heading, followed by a related policy. The goals addressing that policy are lettered and stated, followed by the numbered implementation activities for that goal. This format is intended to clearly display how each policy and goal will be addressed.
- The second table in each issue category identifies the projected expenditures, reflecting implementation activities that BCWD intends to accomplish in the 10-year timeframe of the plan. Implementation activities that are *italicized* in these tables are the lower priority implementation activities that can be found in the Lower Priority Implementation Plan table (Table 84).
- Subsequent tables identify the implementation activities that are addressed under another program or are repeated under another issue category. It should be noted that not every issue category will contain all these tables. The list of potential tables is as follows:
    - Implementation Activities covered by Administration and/or Project Development
    - Implementation Activities covered by Baseline Monitoring Program
    - Implementation Activities covered by Regulatory Program
    - Implementation Activities covered by East Metro Water Resource Education Program (EMWREP)
    - Implementation Activities covered by Capital Improvement Program
- Implementation activities are repeated in the Implementation Plan table (Table 80). Some implementation activities can be found in a second Lower Priority Implementation Plan table (Table 84)

Issues, concerns, or priority changes that have not been identified in the development of this watershed management plan can be brought to the Board of Managers' attention over time. The district can then evaluate new issues as they arise, determine how an issue might affect the work plan, and determine what entity (e.g., cities, Washington County, or other agencies) is best suited to respond to the specific need.

4.1 Stormwater Runoff Management

4.1.1 General Issue Statement

Properly managed impervious surfaces can reduce common environmental impacts, such as increased runoff rates, decreased water quality, and reduced groundwater recharge. Urbanization and land-use changes often involve an increase in imperviousness, compaction of native soils, and removal of existing vegetation. Unless land-use changes are properly managed, these activities will increase the rate and volume of stormwater runoff generated in the watershed and will decrease the quality of surface water resources (and groundwater resources receiving infiltrated runoff) and the quantity of groundwater resources. Many of the best management practices used to provide stormwater management require long-term maintenance to ensure their performance. Existing urbanized areas already contribute additional runoff volume and increased runoff rates to local water bodies, compared with pre-settlement conditions.

4.1.2 Relevance to the District

Development and redevelopment activities have occurred within the watershed and are expected to continue. Given the amount of development that has occurred in the urban portions of the watershed, it is expected that redevelopment will be the predominant land development activity in this portion of the watershed. In the last five years, the watershed has seen increased development pressure in rural areas including the Cities of Grant and Hugo. Areas of special concern remain development and redevelopment around landlocked basins, groundwater-dependent natural resources, wetlands, and tributaries to Brown's Creek and the St. Croix River. Many areas of the watershed developed prior to adoption of BCWD's rules and represent stormwater runoff management retrofit opportunities. Additionally, many of the stormwater management practices constructed to meet the district's rules or installed as retrofit projects need maintenance to ensure that they continue to function as designed.

There are also portions of the watershed that have been hydrologically altered. Surface waters listed by the Minnesota Pollution Control Agency as impaired for various pollutants (including the growing issue of chloride impairment) and resources that are approaching an exceedance of state water quality standards can benefit from additional stormwater management efforts.

4.1.3 Sub-Issue Areas

4.1.3.1 Quality, Quantity, and Rate of Stormwater Runoff

Increases in runoff rate, usually caused by increases in impervious surfaces or changes in vegetative cover (e.g., forested areas converted to turf grass), can intensify erosion and raise flood levels. Similarly, increases in runoff volumes, often caused by increases in impervious surface cover and soil compaction, can cause flooding and can reduce the landscape's ability to infiltrate surface water to groundwater.

The quality of runoff entering water bodies such as lakes, streams, and wetlands is affected by land management practices. Practices that degrade water quality include, among others, connecting impervious surfaces to water bodies, soil disturbance leading to erosion, excessive fertilizer and chloride use, and lack of terrestrial invasive species management. Increases in runoff rate and volume also lead to decreased water quality because of increased erosion, direct connection of impervious surface to water bodies, increased water temperature, and increased volume of water carrying pollutants to water bodies.

Various management techniques can be used to limit the downstream effect of rate and volume increases and to limit the impact on water quality. These management techniques are typically constructed as part of the district's regulatory program, stormwater retrofit program, or capital improvement program. Opportunities for additional treatment through retrofit projects in older neighborhoods or partnering with the business and development community in going above and beyond the rule requirements would further help to address stormwater-related impacts.

4.1.3.2 Monitoring and Maintenance of Stormwater Management Facilities

Stormwater management facilities are constructed to limit the effects of increased runoff rates and volumes and to collect pollutants that could degrade downstream resources. To fully achieve these purposes, stormwater management facilities require regular inspections and periodic maintenance. Cities, towns, and homeowners' associations generally have responsibility for the operation and maintenance of stormwater management facilities; some have greater capacity than others to perform the monitoring and maintenance activities needed on a routine basis.

4.1.3.3 Coordination with Other Government Agencies

Municipalities have the authority to make land-use decisions on where and how development can take place, making them key partners in achieving BCWD's goals. This development activity and population growth has the potential to threaten the health of lakes, wetlands, and streams. Coordinated planning and control of development and redevelopment activities can reduce the impact of land-use changes on the water resources in the watershed. Opportunities to partner with the member communities during the comprehensive planning process to integrate comprehensive water management into land-use decision-making and planning for climate resiliency that can be implemented through stormwater improvement projects would further help to address stormwater-related impacts. This also provides opportunities to realize co-benefits from projects such as increased tree canopy, native vegetation, and more.

4.1.4 Policies, Goals, and Implementation Activities

The policies, goals, and implementation activities related to these sub-issue areas are summarized in the following tables.

Table 5. Stormwater Runoff Management Policies, Goals, and Implementation Activities

SUB-ISSUE 1:	**Quality, Quantity, and Rate of Stormwater Runoff**		
POLICY 1:	**BCWD is committed to improving the quality of stormwater runoff to reduce pollutant loadings to downstream water bodies.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Achieve the revised TMDL load reduction for phosphorous of 848 lb./yr. assigned to Brown's Creek in the *Implementation Plan for the Lake St. Croix Nutrient TMDL (February, 2013).*	**1**	Annually analyze progress toward the phosphorus reduction goal based on evaluation of the collected monitoring data (conducted as part of the baseline monitoring program).
		2	Utilize the district's cost-share or stewardship programs to assist residents in installing water quality improvement projects (including thermal best management practices) and water quantity (e.g., volume control) practices.
		3	Work with the county, the Minnesota Department of Transportation, and member communities to improve operation and maintenance practices.
		4	**SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER BROWN'S CREEK MANAGEMENT PLAN (TABLE 81).**

B	Reduce total suspended solid (TSS) loads within the contributing drainage area to Brown's Creek (including both the regulated and nonregulated portions of municipalities) by 74% on average to meet loading limits. *(Brown's Creek TMDL Implementation Plan, 2012)*.	**1**	Annually analyze progress toward the TSS reduction goal based on evaluation of the collected monitoring data (conducted as part of the baseline monitoring program).
		2	Annually track pollutant load reductions for water quality improvement projects.
		3	**SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER BROWN'S CREEK MANAGEMENT PLAN (TABLE 81).**
C	Restore impaired lakes to meet state standards for total phosphorous, chlorophyll A, and Secchi depth.	**1**	**SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER LAKE, PONDS, AND WETLANDS MANAGEMENT PLANS (TABLE 82).**
D	Achieve the total phosphorus (TP) load reduction goal of 148 lbs. established at the diversion structure as identified in the *McKusick Lake and Lily Lake Mgmt. Plan.*	**1**	*Addressed through Monitoring and Data Collection.*
		2	Revisit sampling at the Long Lake inlet and three locations within the Zephyr tributary for six to eight rain events to evaluate possible phosphorus sources and recent data trends.
		3	Investigate more opportunities for erosion control or sediment remediation in the north branch, west branches one and two, and the direct drainage to the diversion structure to further improve phosphorus loading to Lake McKusick.
E	Identify possible contamination sources of heavy metals contributing to Brown's Creek.	**1**	Further investigate heavy metals in the north branch drainage area and the direct drainage to the diversion structure, especially focused on possible contributions of contamination from the historic railroad.
		2	Further investigate heavy metals at the Long Lake inlet and opportunities for erosion control within the wetland adjacent to the Long Lake inlet.
F	Ensure lakes and ponds meet their designated uses through the management of water levels and nutrient inputs in the following lakes, ponds, and wetlands: • Bass Lakes (East and West) • Benz Lake • Goggins Lake • Lynch Lake (North and South) • Lake Masterman • Pat Lake • Plaisted Lake • North School Section Lake • South School Section Lake • Woodpile Lake • Kismet Basin • July Avenue Pond • Heifort Pond • Brewers Pond • Sinnets Pond	**1**	Manage watershed loads, internal loads, and water levels through best management practices. **SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER LAKES, PONDS, AND WETLANDS MANAGEMENT PLANS (TABLE 82).**
G	Identify sources of chloride contamination contributing to existing impairments and resource nearing impaired status for chloride concentration.	**1**	Determine sediment and chloride loading rates from the gravel roads and parking lots within the watershed and work with municipalities and townships to address the issue. - *Costs identified in Implementation Activity identified under Erosion Prevention and Sediment Control.*

POLICY 2:	**BCWD is committed to ensuring that activities within the watershed support groundwater recharge, provide thermal protection to Brown's Creek, and reduce volume related impacts to the water bodies in the watershed.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Protect and maintain the quantity and quality of groundwater recharge to build resilience.	**1**	*Addressed through administration of BCWD's regulatory standards and criteria.*
B	Identify and implement methods to provide thermal protection to Brown's Creek to achieve the thermal loading reductions identified in the Brown's Creek TMDL Implementation Plan.	**1**	**SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER BROWN'S CREEK MANAGEMENT PLAN (TABLE 81).**
C	Reduce volume-related impacts to the watershed's water bodies (e.g., stormwater impacts such as wetland bounce and duration).	**1**	Partner with local businesses (e.g., golf courses like Stillwater Country Club and/or Logger's Trail) to implement stormwater capture and reuse, where safe and feasible for human health.
		2	*Addressed through administration of BCWD's regulatory standards and criteria.*
D	Reduce flood hazards in basins under development.	**1**	*Addressed through Floodplain and Flood Management.*
POLICY 3:	**BCWD is committed to ensuring that the rate of stormwater runoff is controlled to reduce impacts on its water bodies.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Ensure no-net increase in runoff rate from new development and redevelopment.	**1**	*Addressed through administration of BCWD's regulatory standards and criteria.*
B	Identify and implement rate control projects to reduce rate-related impacts to water bodies and build resilience.	**1**	**SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER BROWN'S CREEK MANAGEMENT PLAN (TABLE 81).**
SUB-ISSUE 2:	**Monitoring and Maintenance of Stormwater Management Facilities**		
POLICY 1:	**BCWD is committed to ensuring the long-term maintenance of stormwater management facilities to improve the water resources of the watershed through the continued achievement of the expected rate control, water quality treatment, and volume control goals of a facility.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Ensure BMPs constructed to meet the BCWD's rules requirements achieve their performance standards and design criteria, through proper inspection and maintenance.	**1**	Continue to require permanent maintenance commitments for stormwater management facilities constructed under BCWD's rules.
		2	Collaborate with member communities to maintain stormwater management facilities and to define criteria triggering the need to maintain installed stormwater management practices.
		3	Develop communication materials to convey the benefits of routine maintenance and operation of facilities and the consequences if these are not met.
		4	Provide stormwater management maintenance resources to HOAs to support them in understanding their maintenance responsibilities for stormwater runoff infrastructure.

B	Ensure BCWD-owned stormwater best management practices (BMPs) meet the performance standards and design criteria. 	**1**	Maintain BCWD-owned stormwater management facilities identified in the *BCWD Capital Improvement Project Standard Operating Procedures Manual.* Evaluate performance as needed including: • Observe facilities chosen for monitoring during construction to evaluate any conditions that would affect infiltration or removal rates. • Evaluate long-term performance and obtain design information on infiltration rates, suspended solids removal rates, phosphorus removal rates, and chloride concentrations as appropriate to the facility. • Monitor the iron enhanced sand filter medium after replacement. • Update the *BCWD CIP Standard Operating Procedures Manua*l. Develop and follow an operations and maintenance plan for stormwater management facilities operated by BCWD.
SUB-ISSUE 3:	**Coordination with Other Government Agencies**		
POLICY 1:	**BCWD will partner with municipalities early in the land use and development planning processes to ensure that BCWD and municipal standards are met within a community and within a development.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Establish a process for BCWD involvement early in each municipality's development review process.	**1**	Work with individual municipalities, townships, and Washington County to establish a process for early involvement in development review. These partnerships will establish a process that allows cost-effective and efficient review of development projects and ensures the incorporation of stormwater management practices as an integral part of development plans that protect surface and groundwater resources (including drinking water supplies).
		2	Conduct a pre-permit meeting that is free of charge with potential permit applicants and their design teams and city staff - *Costs identified in Implementation Activity identified under Regulations.*
		3	Share new stormwater management facility locations annually with the Metropolitan Mosquito Control District.
B	Specifically address the connection between designated land-uses and the district's goals and policies in BCWD reviews of municipal comprehensive plans, local water management plans, and water resource management plans. 	**1**	Work with each municipality through the comprehensive plan and water resource management plan review process to develop and implement land use policies that focus on preservation and protection of water and natural resources.
C	Ensure application of consistent standards for review of stormwater management practices.	**1**	Work with the Washington County Water Consortium to align standards for stormwater management review across watersheds in the Lower St. Croix Partnership.
		2	Develop industry-accepted total phosphorus and total suspended solids removal rates for stormwater management practices as a permitting tool.

D	Increase stormwater management treatment by establishing incentives and partnerships that lead to measurable implementation of new or enhanced stormwater management practices.	**1**	Establish a cost-share program that will allow BCWD to partner with the business/development community on best management practices that help a site go above and beyond the rule requirements.
		2	Establish a cost-share program that will allow BCWD to partner with its member communities to implement water quality improvement/retrofit projects.

Table 6. Projected Expenditures (in 1,000's) for Stormwater Runoff Management

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr. Total
Utilize the district's cost-share or stewardship programs to assist residents in installing water quality improvement projects (including thermal best management practices) and water quantity (e.g., volume control) practices.	50	50	50	50	50	50	50	50	50	50	500
Revisit sampling at the Long Lake inlet, and three locations within the Zephyr tributary for six to eight rain events to evaluate possible phosphorus sources and recent data trends.	6	6									12
Investigate more opportunities for erosion control or sediment remediation in the north branch, west branches one and two, and the direct drainage to the diversion structure to further improve phosphorus loading to Lake McKusick.				60							60
Further investigate heavy metals in the north branch drainage area and the direct drainage to the diversion structure, especially focused on possible contributions of contamination from the historic railroad.			*60*								*60*
Further investigate heavy metals at the Long Lake inlet and opportunities for erosion control within the wetland adjacent to the Long Lake inlet.	*10*	*10*	*10*	*10*							*40*
Partner with local businesses (e.g., golf courses like Stillwater Country Club and/or Logger's Trail) to implement stormwater capture and reuse, where safe and feasible for human health.		150					50				200

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr. Total
Develop communication materials to convey the benefits of routine maintenance and operation of facilities and the consequences if these are not met.	*9*										*9*
Maintain BCWD-owned stormwater management facilities identified in the *BCWD Capital Improvement Project Standard Operating Procedures Manual.* Evaluate performance as needed including: • Observe facilities chosen for monitoring during construction to evaluate any conditions that would affect infiltration or removal rates. • Evaluate long-term performance and obtain design information on infiltration rates, suspended solids removal rates, phosphorus removal rates, and chloride concentrations as appropriate to the facility. • Monitor the iron enhanced sand filter medium after replacement. • Update the *BCWD CIP Standard Operating Procedures Manua*l. • Develop and follow an operations and maintenance plan for stormwater management facilities operated by BCWD.	200	150	150	150	200	150	150	150	150	150	1,600
Establish a cost-share program that will allow BCWD to partner with the business/development community on best management practices that help a site go above and beyond the rule requirements.			10	100			100			100	310

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr. Total
Establish a cost-share program that will allow BCWD to partner with its member communities to implement water quality improvement/retrofit projects.	25	25	25	25	25	25	25	25	25	25	250
Total for Stormwater Runoff Management	**300**	**391**	**305**	**395**	**275**	**225**	**375**	**225**	**225**	**325**	**3,041**

Table 7. Stormwater Runoff Management Implementation Activities covered by Administration and/or Project Development

Work with each municipality through the comprehensive plan and water resource management plan review process to develop and implement land use policies that focus on preservation and protection of water and natural resources.

Table 8. Stormwater Runoff Management Implementation Activities covered by Baseline Monitoring Program

Annually analyze progress toward the phosphorus reduction goal based on evaluation of the collected monitoring data (conducted as part of the baseline monitoring program).
Annually analyze progress toward the TSS reduction goal based on evaluation of the collected monitoring data (conducted as part of the baseline monitoring program).
Annually track pollutant load reductions for water quality improvement projects.

Table 9. Stormwater Runoff Management Implementation Activities covered by Regulatory Program

Continue to require permanent maintenance commitments for stormwater management facilities constructed under BCWD's rules.
Work with individual municipalities, townships, and Washington County to establish a process for early involvement in development review. These partnerships will establish a process that allows cost-effective and efficient review of development projects and ensures the incorporation of stormwater management practices as an integral part of development plans that protect surface and groundwater resources (including drinking water supplies).
Conduct a pre-permit meeting that is free of charge with potential permit applicants and their design team and city staff.
Develop industry-accepted total phosphorus and total suspended solids removal rates for innovative and standard stormwater management practices as a permitting tool.

Table 10. Stormwater Runoff Management Implementation Activities covered by Capital Improvement Program

Manage watershed loads, internal loads, and water levels through best management practices.
Collaborate with member communities to maintain stormwater management facilities and to define criteria triggering the need to maintain installed stormwater management practices.

Table 11. Stormwater Runoff Management Implementation Activities covered by Education and Outreach

Work with the county, the Minnesota Department of Transportation, and member communities to improve operation and maintenance practices.
Provide stormwater management maintenance resources to HOAs to support them in understanding their maintenance responsibilities for stormwater runoff infrastructure.
Share new stormwater management facility locations annually with the Metropolitan Mosquito Control District.
Work with the Washington County Water Consortium to align standards for stormwater management review across watersheds in the Lower St. Croix Partnership.

4.2 Erosion Prevention and Sediment Control

4.2.1 General Issue Statement

Unless properly managed, land-disturbing activities can intensify erosion and lead to increased transport of sediment into surface waters. Land-disturbing activities include both physical changes to land when it is modified by human activity (e.g., agriculture, urban development), but also the introduction of contaminants which alter soil quality such as chlorides (e.g., road salt and dust suppressant applications). Disturbances can also include invasive species, such as buckthorn, which result in more exposed soils subject to greater potential for erosion. These disturbances alter the soil's functions and values, impacting its resilience to erosion and its ability to retain moisture.

Extreme dry, wet, and windy conditions have the potential to weaken soil structure, especially during sudden shifts. Areas with a greater slope and degraded soils pose significant risks to erosion. Riparian areas are most at risk to the impacts of increased erosion and sedimentation through removal and deposition of sediments. Sedimentation in waterways can lead to degraded fish and macroinvertebrate habitat, reduced storage volume of stormwater management facilities, and reductions in stormwater infiltration by sealing permeable soils.

4.2.2 Relevance to the District

The erosion that occurs naturally throughout the watershed and because of land-disturbing activities has the potential to transport sediment and associated nutrients into the watershed's surface waters. Waters of particular concern include Brown's Creek, which is impaired for aquatic life due to a lack of cold-water fish assemblage. Through the stressor identification process, high suspended solids were identified as one of the primary stressors to the biota in the impaired reach of Brown's Creek. To date, the origins of the total contribution of suspended solids to Brown's Creek have not been identified, and the district continues to evaluate sources from the landscape as well as near-channel erosion. Several lakes in the watershed are impaired due to excess nutrient loading, which is associated with erosion as nutrients are generally bound to sediment particles.

4.2.3 Sub-Issue Areas

4.2.3.1 Existing and Anticipated Erosion Problems

Excessive erosion near water bodies can add sediment and nutrients that degrade water quality. Changes to the climate that impact soil moisture (extreme dry periods, intense rain events, and frequent, rapid snowmelt) and functions and values are anticipated to accelerate bluff instability and headcutting erosion. Identifying problem areas, performing cost-benefit analyses, and implementing long-term solutions can limit the impact of these issues on water quality in the watershed.

4.2.3.2 Development-Related Land Disturbance

Soil disturbance during development activities can lead to high levels of erosion that result in sudden impacts to downstream water bodies if the sediment is transported offsite. Proper control of sediment and erosion during development activities can limit impacts to downstream resources. Development activities can also lead to an increase in stream flow velocity and volume which can alter stream geomorphology, accelerating in-stream erosion.

4.2.3.3 Soil Health Practices

Human activities, such as deforestation, agriculture, and urbanization, have disturbed pre-settlement soils, impacting their function and value. This disturbance lowers the resilience of these soils to the flow of water, resulting in higher degrees of erosion and sediment transport offsite in more disturbed areas. Efforts to re-establish soil function and value have the potential to control sediment and erosion of disturbed lands, limiting effects on downstream resources. Soil health best practices can include limiting disturbance, armoring soil, increasing plant diversity, maintaining living roots in the ground year-round, and integrating livestock. These practices, although developed for agriculture, have broader applicability to improve the health of non-agricultural soils. Healthier soil practices present broad co-benefits such as improved benefits to groundwater. Mechanisms to implement these practices may include both incentives and enforcement of topsoil and soil compaction.

4.2.4 Policies, Goals, and Implementation Activities

The policies, goals, and implementation activities related to these sub-issue areas are summarized in the following tables.

Table 12. Erosion Prevention and Sediment Control Policies, Goals, and Implementation Activities

SUB-ISSUE 1:	**Existing and Anticipated Erosion Problems**		
POLICY 1:	**Protect BCWD's water bodies from the impacts of sedimentation, excessive stream bank and shoreline erosion, and adjacent upland erosion.**		
GOAL		**IMPLEMENTATION ACTIVITIES**	
A	Provide stabilization of the five highest priority erosion problem areas through stormwater management and stabilization projects, including the establishment of native vegetation, such that erosion is minimized, and channel/bank stability is maintained under design storm conditions (e.g., 2-, 10-, and 100-year events). *Stabilization shall be in perpetuity, recognizing natural disturbances may necessitate occasional maintenance. Constructed stabilization practices shall be designed for a 25-year lifespan.*	**1**	Conduct stream channel assessments from the headwaters to the St. Croix River to identify in-stream or near channel instabilities and active headcutting. Conduct biennial drone flights (every other year) upstream of Manning Avenue where large wetland complexes occur, and biennial foot surveys downstream of Manning Avenue, including the three tributaries south of Brown's Creek State Trail (South Central, Zephyr, and Long Lake tributaries). Conduct additional observations during walk throughs including: • Fish barrier assessment (see Ecological Health) • Footpath formation (see Recreation)
		2	Identify shoreline restoration opportunities (e.g., using the Minnesota Department of Natural Resources' "Score Your Shore" tool).
		3	Support the Minnesota Department of Natural Resources in addressing Brown's Creek bluff instability projects and five-year assessment.
		4	*Addressed through the implementation of the district's capital improvement program.*
		5	**SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER LAKE, PONDS, AND WETLANDS MANAGEMENT PLANS (TABLE 82).**
		6	Determine sediment and chloride loading rates from the gravel roads and parking lots within the watershed and work with municipalities and townships to address the issue.

SUB-ISSUE 2:	Development-Related Land Disturbance		
POLICY 1:	**BCWD requires erosion and sediment controls in areas disturbed by development and construction related activities.**		
GOAL		**IMPLEMENTATION ACTIVITIES**	
A	Erosion and sediment control practices meet required performance standards during construction.	**1**	*Addressed through administration of BCWD's regulatory standards and criteria.*
		2	Incentivize natural landscapes as a stormwater best management practice in new development to meet permit requirements.
SUB-ISSUE 3:	**Soil Health Practices**		
POLICY 1:	**BCWD is committed to improving soil health, recognizing the importance of protecting and improving soil function to enhance water quality, reduce erosion, and build climate resilience.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Improve soil health throughout the watershed.	**1**	*Addressed through administration of BCWD's regulatory standards and criteria.*
		2	Continue to incentivize soil restoration as part of BCWD's regulatory standards and criteria.
		3	*Addressed through Education and Outreach.*
B	Reduce non-native plant cover and replace with high-value and functional native landscaping.	**1**	*Addressed through administration of BCWD's regulatory standards and criteria.*
		2	*Addressed through Ecological Health.*

Table 13. Projected Expenditures (in 1,000's), for Erosion Prevention and Sediment Control Practices

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr. Total
Conduct stream channel assessments from the headwaters to the St. Croix River to identify in-stream or near channel instabilities and active headcutting. Conduct biennial drone flights (every other year) upstream of Manning Avenue where large wetland complexes occur, and biennial foot surveys downstream of Manning Avenue, including the three tributaries south of Brown's Creek State Trail (South Central, Zephyr, and Long Lake tributaries). Conduct additional observations during walk throughs including: • Fish barrier assessment (see Ecological Health) • Footpath formation (see Recreation)		7.5		7.5		7.5		7.5		7.5	37.5

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr. Total
Identify shoreline restoration opportunities (e.g., using the Minnesota Department of Natural Resources' "Score Your Shore" tool).	15			15			15			15	60
Determine sediment and chloride loading rates from the gravel roads and parking lots within the watershed and work with municipalities and townships to address the issue.		*10*									*10*
Support the Minnesota Department of Natural Resources in addressing Brown's Creek bluff instability projects and five-year assessment.			7.5					7.5			15
Total for Erosion and Sediment Control	**15**	**17.5**	**7.5**	**22.5**		**7.5**	**15**	**15**		**22.5**	**122.5**

Table 14. Erosion Prevention and Sediment Control Implementation Activities covered by Regulatory Program

Incentivize natural landscapes as a stormwater BMP in new development to meet permit requirements.
Continue to incentivize soil restoration as part of BCWD's regulatory standards and criteria.

Brown's Creek restoration work completed in 2024 to address streambank erosion, among other concerns.

4.3 Stream Management

4.3.1 General Issue Statement

Alterations in land-use disrupt the hydrology and ecology of stream ecosystems. For example, increased imperviousness in the drainage area contributing to a resource results in inhibited infiltration of rainfall and snowmelt. This reduction in infiltration results in reduced baseflow, larger and more frequent stormwater discharges, and increased temperature and pollutant loads. These factors contribute to channel enlargement, changes to instream habitat, decreased aquatic diversity, and degradation of the resource.

4.3.2 Relevance to the District

Brown's Creek is comprised of two reaches: the north branch (from 110th Street to Manning Avenue) and the main branch (Highway 96 near Manning Avenue to the St. Croix River). Both branches are impaired for aquatic recreation and aquatic life due to low levels of dissolved oxygen, lack of cold-water fish assemblage, high turbidity, and high levels of *E. coli* (Escherichia coli) bacteria. Through the stressor identification process, the primary stressors to the biota in these impaired reaches of Brown's Creek were identified as high suspended solids and elevated temperatures. Although high copper concentrations were identified in previous stressor identification processes, a follow-up investigation ruled out copper as an ongoing concern. While these impairments have been addressed by the Brown's Creek TMDL Report and Implementation Plan (the latter of which identifies specific goals for restoration activities), additional impairments in the system for *E. coli* and dissolved oxygen are under investigation. The north branch is also impaired due to a low (but improving) score, on the Minnesota Macroinvertebrate Index of Biological Integrity (M-IBI). While the M-IBI scores in Brown's Creek are improving at all three locations where samples are being collected, total suspended solids (TSS) concentrations remain very high, exceeding the TSS standard for cold-water streams at all monitoring locations. Currently, chloride concentrations in Brown's Creek are not near the chronic threshold for chloride, but chloride loads and concentrations are increasing at every monitoring station in Brown's Creek. While data collected from 2015-2024 indicates an overall upward (improving) trend in stream health and macroinvertebrate community quality, further improvements are still necessary.

In addition to Brown's Creek, there are several small tributaries in the southern portion of the watershed, all of which drain to the diversion structure and ultimately either Brown's Creek under large storm events or Lake McKusick under baseflow conditions and small storm events. These tributaries include the Long Lake tributary, South Central tributary, and Zephyr tributary. Land-use changes in the drainage area to the diversion structure have resulted in changes in flow conditions, headcutting of the tributaries, and water quality concerns. While the surface water contribution from this drainage system has been altered by the diversion structure, these tributaries are an important source of recharge and groundwater baseflow to Brown's Creek.

The St. Croix River is a National Wild and Scenic River administered by the National Park Service. While BCWD focuses much of its efforts on the protection and restoration of its surface water bodies, it is important to remember that the watershed is a tributary to this national treasure. As a partner in the Lower St. Croix River *One Watershed, One Plan*, BCWD recognizes its projects will contribute to downstream improvements in the Lower St. Croix River. This includes addressing total phosphorus concentrations and sources to comply with the latest state standards.

4.3.3 Sub-Issue Areas

4.3.3.1 Water Quality, Aquatic Habitat, and Fisheries Protection

The flora and fauna of Brown's Creek require a specific range of conditions to complete their life cycles and maintain viable populations. The lower reaches of Brown's Creek currently support an assemblage of organisms that require cold water and clean substrates (e.g., stoneflies, trout, and rainbow darters). Additionally, the cool microclimate of the lower gorge supports unique flora species not found elsewhere in the watershed. The wetland conditions of the upper reaches of Brown's Creek do not support many of the species found in the lower reaches due to differences in vegetative cover, water quality, and temperature. While the management requirements in this portion of the watershed differ from those in the lower portions of the watershed (as described in the unique species inventory), the groundwater discharge within the upper reaches feed the lower reaches of the creek and are instrumental in maintaining the health and baseflow of the creek.

4.3.3.2 Maintenance of Flow and Geomorphology

The shape and course of a stream is determined by slope, topography, vegetation, and flow conditions. Changes in vegetation quality and type, particularly from invasive to native vegetation, and in flow conditions can alter the size and course of a stream. Urbanization near a stream can lead to bank erosion, undercutting, and stream widening if rates and volumes of runoff are not managed. Additionally, over pumping of groundwater can reduce stream baseflow.

4.3.4 Policies, Goals, and Implementation Activities

The policies, goals, and implementation activities related to these sub-issue areas are summarized in the following tables.

Table 15. Stream Management Policies, Goals, and Implementation Activities

SUB-ISSUE 1:	**Water Quality, Aquatic Habitat, and Fisheries Protection**		
POLICY 1:	**BCWD is committed to the improvement of the water quality and ecological integrity of Brown's Creek and its tributaries, including maintaining a viable cold-water fishery.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Achieve and maintain the Macroinvertebrate Index of Biological Integrity (IBI) for southern cold-water streams of 46 or higher and the fish IBI for southern cold-water streams of 45 or higher in the trout stream portion of Brown's Creek (or revised standard as determined by Minnesota Pollution Control Agency).	**1**	Continue to implement volunteer stream monitoring program by providing financial support to the Stillwater Area High School science program.
		2	Reassess the fish and macroinvertebrate community health at representative sites in three portions of Brown's Creek (Headwaters, Central, and Lower Gorge) in September.
		3	Conduct fish sampling on Brown's Creek, if not completed by the Minnesota Department of Natural Resources, to determine the population status and distribution of the rainbow darter in the gorge.
		4	Complete annual report on stream flow, water quality, and fisheries and aquatic habitat trends based on monitoring results - *Cost identified under baseline monitoring program under Monitoring and Data Collection.*
		5	Implement thermal improvement projects as identified in the Brown's Creek Management Plan **- SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER BROWN'S CREEK MANAGEMENT PLAN (TABLE 81).**

B	Maintain a minimum daily dissolved oxygen concentration of 7 mg/L in the trout stream portion of Brown's Creek.	**1**	Continue to monitor dissolved oxygen in Brown's Creek, and expand monitoring and evaluation efforts as needed to evaluate changes along the length of the creek. 
C	Maintain an instantaneous total suspended solids (TSS) concentration of 10 mg/L or lower in at least 90% of samples collected between April 1 and September 30 in the trout stream portion of Brown's Creek.	**1**	Monitor sediment load and sediment concentration in Brown's Creek in coordination with municipalities, Washington County, and state agencies as appropriate to evaluate locations of excessive sediment input and to measure progress toward the TSS goal.
		2	Implement TSS implementation projects as identified in the Brown's Creek Management Plan -**SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER BROWN'S CREEK MANAGEMENT PLAN (TABLE 81).**
D	Achieve and maintain in-stream water temperatures of 18.3°C (65°F) or lower in the trout stream portion of Brown's Creek.	**1**	Monitor Brown's Creek temperature in coordination with municipalities, Washington County, and state agencies as appropriate. 
		2	Implement thermal improvement projects as identified in the Brown's Creek Management Plan **- SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER BROWN'S CREEK MANAGEMENT PLAN (TABLE 81).**
E	Manage and protect Brown's Creek to support the long-term viability of brook trout populations.	**1**	Coordinate with Minnesota Department of Natural Resources on developing and implementing a fisheries management plan for Brown's Creek that would establish stocking rates and species and plan for expanding the trout stream portion of the creek.
F	Identify source(s) of *E. coli,* and implement reduction actions.	**1**	Continue to conduct *E. coli* source investigation to evaluate bacteria sources to Brown's Creek and to guide best management practice selection.
G	Facilitate the implementation of the Brown's Creek Total Maximum Daily Load (TMDL) Implementation Plan.	**1**	Hold meetings every three years with member communities to discuss progress toward local surface water management plan implementation, TMDL Implementation Plan goals, other mutual goals, and opportunities for partnerships.
		2	Track performance towards Brown's Creek TMDL goals annually.
H	Achieve and maintain the water quality and ecological integrity of upper Brown's Creek (headwaters to Manning Avenue) to achieve the state's goals.	**1**	Maintain native vegetation, pools, riffles, and woody debris within the stream corridor through protection and restoration projects.
SUB-ISSUE 2:	**Maintenance of Flow and Geomorphology**		
POLICY 1:	**BCWD strives to maintain the hydrology and geomorphology of Brown's Creek and its tributaries required for stream equilibrium and health.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Manage the watershed to mimic natural (pre-settlement) hydrologic conditions.	**1**	*Addressed through administration of BCWD's regulatory standards and criteria.*
		2	Support beaver activity in the watershed, and utilize pond levelers in beaver dams to maintain habitat and flow to prevent flooding of infrastructure and property.
		3	*Addressed through Education and Outreach.*

B	Evaluate system-wide geomorphology on a five-year basis and identify and execute restoration opportunities.	**1**	Monitor geomorphology of Brown's Creek and its tributaries on a five-year basis to understand the creek's response to restoration activities and to detect changes within unrestored reaches.
		2	Implement ecological health projects as identified in the Brown's Creek Management Plan **- SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER BROWN'S CREEK MANAGEMENT PLAN (TABLE 81).**
		3	Implement the recommendations of tributary resource assessment by addressing improvements needed in the Long Lake tributary, which is experiencing channel incision and bank erosion below Boutwell Road. **SEE BROWN'S CREEK MANAGEMENT PLAN (TABLE 81).**

Table 16. Projected Expenditures (in 1,000's) for Stream Management Practices

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr. Total
Continue to implement volunteer stream monitoring program by providing financial support to the Stillwater Area High School science program.	5	5	5	5	5	5	5	5	5	5	50
Reassess the fish and macroinvertebrate community health at representative sites in three portions of Brown's Creek (Headwaters, Central, and Lower Gorge) in September.	5	5	5.5	5.5	6	6	6.5	6.5	7	7	60
Conduct fish sampling on Brown's Creek, if not completed by the Minnesota Department of Natural Resources, to determine the population status and distribution of the rainbow darter in the gorge.	5			5			6			6	22
Implement thermal improvement projects as identified in the Brown's Creek Management Plan - **SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER BROWN'S CREEK MANAGEMENT PLAN (TABLE 81).**	35	80	55	30	50	150	15	70	137.5	142.5	765

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr. Total
Implement TSS implementation projects as identified in the Brown's Creek Management Plan - **SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER BROWN'S CREEK MANAGEMENT PLAN (TABLE 81).**	54.2	182.7			70.7	161.2					469
Continue to conduct E. coli source investigation to evaluate bacteria sources to Brown's Creek and to guide best management practice selection.	*5*	*5*	*5*	*5*	*5*	*5*	*5*	*5*	*5*	*5*	*50*
Hold meetings every three years with member communities to discuss progress toward local surface water management plan implementation, TMDL Implementation Plan goals, other mutual goals and opportunities for partnerships.	8.5			8.5			8.5			8.5	34
Support beaver activity in the watershed, and utilize pond levelers in beaver dams to maintain habitat and flow to prevent flooding of infrastructure and property.	1	1	1	1	1	1	1	1	1	1	10
Monitor geomorphology of Brown's Creek and its tributaries on a five-year basis to understand the creek's response to restoration activities and to detect changes within unrestored reaches.			7.5					9			16.5
Implement ecological health projects as identified in the Brown's Creek Management Plan - **SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER BROWN'S CREEK MANAGEMENT PLAN (TABLE 81).**	5		5		5		5		5		25
Total for Stream Management	**123.7**	**278.7**	**84**	**60**	**142.7**	**328.2**	**52**	**96.5**	**160.5**	**175**	**1,501.5**

Table 17. Stream Management Implementation Activities covered by Administration and/or Project Development

Coordinate with the Minnesota Department of Natural Resources on developing and implementing a fisheries management plan for the creek that would establish stocking rates and species, and plan for expanding the trout stream portion of the creek.

Table 18. Stream Management Implementation Activities covered by Baseline Monitoring Program

Complete annual report on stream flow, water quality, and fisheries and aquatic habitat trends based on monitoring results.
Continue to monitor dissolved oxygen in Brown's Creek, and expand monitoring and evaluation efforts as needed to evaluate changes along the length of the creek.
Monitor sediment load and sediment concentration in Brown's Creek in coordination with municipalities, Washington County, and state agencies as appropriate to evaluate locations of excessive sediment input and to measure progress toward the TSS goal.
Monitor Brown's Creek temperature in coordination with municipalities, Washington County, and state agencies as appropriate.
Track performance towards Brown's Creek TMDL goals annually.

Table 19. Stream Management Implementation Activities covered by Capital Improvement Program

Maintain native vegetation, pools, riffles, and woody debris within the stream corridor through protection and restoration projects.
Implement the recommendations of tributary resource assessment by addressing improvements needed in the Long Lake tributary, which is experiencing channel incision and bank erosion below Boutwell Road.

Stocking rainbow trout in Brown's Creek in 2025 with the Minnesota Department of Natural Resources.

4.4 Lake Management

4.4.1 General Issue Statement

The Brown's Creek watershed is home to a few small, shallow lakes and several large open water wetlands and ponds that are locally regarded as lakes. While lake water quality trends are improving, many continue to face moderate-to-severe algal blooms occurring throughout the summer. Other issues facing the watershed's lakes include drastic fluctuations in water levels, excessive aquatic plant communities, and threats to unique biological resources. Some of the lakes and ponds in the watershed appear to have unique soft water chemistry that provides habitat for rare and uncommon aquatic plants, yet little is understood about the unique chemistry of these lakes and how it shapes their ecology and resilience to changes in the landscape. BCWD is committed to protecting and improving water quality and the biological integrity of its lakes and large ponds and makes a concerted effort to manage these resources through the development and implementation of lake specific management plans.

4.4.2 Relevance to the District

Five of the lakes and large ponds in the watershed are listed as impaired by the Minnesota Pollution Control Agency for nutrient concentration: Long Lake, Benz Lake, Goggins Lake, South School Section Lake, and Lynch Lake. Additionally, Long Lake received a new impairment for chloride in 2022. Impaired lakes do not meet state water quality standards for maintaining "fishable and swimmable" conditions. Other lakes within the watershed are not listed as impaired but have some level of degradation and could benefit from management or restoration actions to improve their water quality. Lakes with higher water quality, such as the recently delisted Plaisted Lake, require protection from impacts that could decrease water quality, fisheries habitat, or recreational enjoyment of the lake. Since the last iteration of the watershed management plan, specific lake management plans have been developed to direct initiatives to maintain or improve these resources.

Many of the lakes in the watershed are categorized as "shallow lakes" (defined as having a depth of less than 15 feet over most of the lake). The ecology of shallow lakes is more dynamic because of more frequent mixing events, complex dissolved oxygen dynamics, and stronger interactions between the biological community. These lakes typically are either dominated by aquatic plants due to their shallow nature or have become over-nutrified and are dominated by algae. Accordingly, shallow lakes are typically referred to as being in either a clear or turbid state. Nutrient management can transition lakes from a turbid algae dominated-state to a clear aquatic plant dominated-state. In its outreach efforts with lakeshore residents and lake users, the district focuses on explaining this phenomenon and its implication on lake management strategies.

4.4.3 Sub-Issue Areas

4.4.3.1 Water Quality Protection and Restoration

Naturally occurring and/or anthropogenic factors can impact lake water quality.

Excess inputs of nutrients, especially phosphorus, can cause accelerated eutrophication with symptoms that include excessive algae growth, decreased water clarity, and decreased levels of dissolved oxygen. These factors change the habitat in the lake and decrease public enjoyment of a lake. There are multiple ways in which phosphorus is added to lakes and ponds. This includes internal and external loading. Internal loading is when phosphorus is released from sediment within a water body. External loading is when phosphorus comes from a source outside of the water body.

Sediment is another common contributor to lake water quality degradation. Excess sediment can cause high turbidity, sediment deltas that cause clog inlets/outlets, changes in lake bottom spawning

and macroinvertebrate habitat, and internal nutrient loading. Sources of excess sediment to lakes include unstable sediments in upstream landscapes, stream bank erosion, and lake shoreline erosion.

Chloride is a pollutant of growing concern as it is very harmful to aquatic ecosystems. Once it is introduced into water resources, there is no economically feasible removal technology. Application of road salt during winter to manage ice, spray treatments on gravel roads during summer to manage dust, and water softener solutions contribute to chloride pollution through stormwater runoff.

Protecting high-quality lakes and restoring lakes that are already being impacted by land-use change is important to BCWD.

4.4.3.2 Lake Level Management

Lakes naturally fluctuate in water level, and this fluctuation is beneficial for the lake and the surrounding upland habitat. However, during drought conditions, water levels could shift the littoral zone, which could be a potential mechanism for increased plant abundance driven by water level changes that host additional plant species. Conversely, extreme flood conditions can impact adjacent trees, structures, and infrastructure (e.g., subsurface sewage treatment systems and roads). Managing excessively high lake levels may be necessary in some cases (e.g., Goggins and South School Section Lakes) but should be conducted in a manner that accounts for the ecological function of the lake and natural lake level fluctuations. Lake level management is expected to become more challenging in the future as precipitation patterns trend toward more extreme wet and dry periods.

4.4.3.3 Lake Functions and Values

Each lake within the watershed is unique in many respects. Thus, each lake provides different functions and is valuable to the community in different ways. Lakes provide aesthetic value, habitat, flood storage and groundwater recharge functions, and recreational value, each to varying degrees. Many of the shallow lakes in the watershed display improving trends, though risks associated with algae domination and excessive aquatic vegetation, including invasive species persist. Several lakes possess unique water chemistry and/or plant communities of high biodiversity value supported by the presence of rare aquatic plants. Evaluating the natural condition of the lake, educating residents about the natural condition, and determining local interests can assist in implementing effective lake management plans.

4.4.4 Policies, Goals, and Implementation Activities

The policies, goals, and implementation activities related to these sub-issue areas are summarized in the following tables.

Table 20. Lake Management Policies, Goals, and Implementation Activities

SUB-ISSUE 1:	**Water Quality Protection and Restoration**		
POLICY 1:	**BCWD is committed to restoring water quality in degraded lakes and to protecting water quality in lakes that meet state water quality standards.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Restore the water quality in watershed lakes and large ponds that do not currently meet state standards or their designated uses.	**1**	Implement watershed improvements in the relevant lake management plans - **SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER LAKE, POND, AND WETLAND MANAGEMENT PLAN (TABLE 82).**
		2	Conduct water quality monitoring of lakes in cooperation with municipalities, Washington County, and state agencies.

B	Protect the water quality in watershed lakes and large ponds that currently meet state standards and their designated uses.	**1**	Implement watershed improvements in the relevant lake management plans - **SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER LAKE, POND, AND WETLAND MANAGEMENT PLAN (TABLE 82).**
		2	Support legislative efforts to reduce chloride contamination, and smart salting initiatives throughout the watershed.
		3	*Addressed through administration of BCWD's regulatory standards and criteria.*
		4	Consider adopting and implementing regulatory provisions to reduce chloride contamination to watershed lakes.
SUB-ISSUE 2:	**Lake Level Management**		
POLICY 1:	**BCWD supports managing lake levels in a way that balances the ecological functions of a lake with flood protection.**		
GOAL		**IMPLEMENTATION ACTIVITIES**	
A	Meet the goals and objectives for water levels identified in BCWD's lake management plans. 	**1**	Continue to conduct lake level monitoring to track lake level trends.
		2	Evaluate options to address high water levels on Long Lake for the existing and projected 100-year rainfall event to provide additional protection for the residences with less than adequate freeboard and for the protection of roads (Mid Oaks, 62nd St, & 72nd St inundated for current 100-year event) [2021 Long Lake Flood Reduction Risk Evaluation].
		3	*Addressed through administration of BCWD's regulatory standards and criteria.*
SUB-ISSUE 3:	**Lake Function and Values**		
POLICY 1:	**BCWD supports establishing ecologically reasonable goals for the functions and values and recreational opportunities of watershed lakes based on the natural condition of each lake.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Establish shoreline vegetation improvement goals for lakes.	**1**	Implement watershed improvements in the relevant lake management plans - **SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER LAKE, POND, AND WETLAND MANAGEMENT PLAN (TABLE 82).**
		2	Highlight shoreline conservation efforts of specific properties, and showcase these through shoreland property outreach materials.
		3	Implement a community science initiative using the Minnesota Department of Natural Resources' "Score Your Shore" tool to gather data and track shoreline health across the district.
B	Achieve clear water state conditions in the watershed's shallow lakes and ponds.	**1**	Implement watershed improvements in the relevant lake management plans - **SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER LAKE, POND, AND WETLAND MANAGEMENT PLAN (TABLE 82).**
C	Increase awareness of unique features of the lakes in the watershed to inform basin-specific management activities.	**1**	Inventory surface and groundwater resources for unique and notable features, identify protection strategies, and integrate findings with community conversations.

D	Increase understanding of the distribution and growth of aquatic plant communities and how to manage them.	**1**	Implement watershed improvements in the relevant lake management plans - **SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER LAKE, POND, AND WETLAND MANAGEMENT PLAN (TABLE 82).**
		2	*Addressed through Education and Outreach.*

Table 21. Projected Expenditures (in 1,000's) for Lake Management Practices

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr. Total
Implement watershed improvements in the relevant lake management plans - **SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER LAKE, POND, AND WETLAND MANAGEMENT PLAN (TABLE 82).**	15	15	66	66	66	66	66	66	66	66	558
Evaluate options to address high water levels on Long Lake for the existing and projected 100-year rainfall event to provide additional protection for the residences with less than adequate freeboard and for the protection of roads (Mid Oaks, 62nd St, & 72nd St inundated for current 100-year event) [2021 Long Lake Flood Reduction Risk Evaluation].	15	20									35
Inventory surface and groundwater resources for unique and notable features, identify protection strategies, and integrate findings with community conversations.	1	1	4	1	1	4	1	1	4	1	19
Total for Lake Management	**31**	**36**	**70**	**67**	**67**	**70**	**67**	**67**	**70**	**67**	**612**

Table 22. Lake Management Implementation Activities covered by Administration and/or Project Development

Support legislative efforts to reduce chloride contamination and smart salting initiatives throughout the watershed.

Table 23. Lake Management Implementation Activities covered by Baseline Monitoring Program

Conduct water quality monitoring of lakes in cooperation with municipalities, Washington County, and state agencies.
Continue to conduct lake level monitoring to track lake level trends.

Table 24. Lake Management Implementation Activities covered by Capital Improvement Program

Implement watershed improvements in the relevant lake management plans

Table 25. Lake Management Implementation Activities covered by Regulatory Program

Consider adopting and implementing regulatory provisions to reduce chloride contamination to watershed lakes.

Table 26. Lake Management Implementation Activities covered by Education and Outreach

Highlight shoreline conservation efforts of specific properties, and showcase these through shoreland property outreach materials.
Implement a community science initiative using the Minnesota Department of Natural Resources' "Score Your Shore" tool to gather data and track shoreline health across the district.

4.5 Wetland Management

4.5.1 General Issue Statement

The watershed contains a diversity of wetland types of varied condition that perform essential functions and values. Although many wetlands are degraded, high-quality wetlands remain due to the many isolated basins and low-intensity development present in portions of the watershed. Several wetlands include plant communities unique to the metropolitan area, located at the southern fringes of their known range (e.g., coniferous and open peatlands, soft water ponds). The Minnesota Department of Natural Resources maintains a record of Rare Natural Communities (RNCs) with special considerations under the Wetland Conservation Act, and it provides guidance on RNCs.

Many wetlands serve as source water for downstream water resources. All the wetlands in the watershed are at risk of encroachment from various land-uses to some degree. They are also at risk of degradation from land-use practices that increase stormwater input and decrease groundwater contributions thereby decreasing wetland water quality, altering hydrologic patterns, and limiting wildlife habitat within and adjacent to wetlands.

4.5.2 Relevance to the District

The Brown's Creek watershed contains numerous wetlands that provide important functions such as filtering and treating runoff, storage and flood attenuation, groundwater recharge, thermoregulation, carbon sequestration, plant diversity, and wildlife, fisheries, and amphibian habitat. Many of the larger, open-water wetlands in the watershed have homes surrounding them and are valued as natural amenities like watershed lakes. Wetland quality is linked to the surrounding environment. Minimizing the effect of land-use changes (including changes in surficial and groundwater hydrology, topography, soils, and land cover) has the potential to maintain or improve the functions and values of a wetland.

4.5.3 Sub-Issue Areas

4.5.3.1 Wetland Functions and Values

BCWD is committed to no net loss of wetland functions and values. The watershed contains a variety of wetland systems that have the potential to be degraded by land-use activities, agricultural practices, hobby farms, recreation, and the proliferation of aquatic invasive species such as common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*), reed canary grass (*Phalaris arundinacea*), and hybrid cattail (*Typha* x *glauca*). For example, increased runoff may alter hydrology and water quality of a wetland with effects on capacity for water quality treatment and flood attenuation, as well as impact plant diversity and habitat quality by favoring invasive species. Altered hydrology can also affect functions such as thermoregulation and carbon sequestration. BCWD needs to protect and enhance these resources' functions and values.

Identification of wetland restoration, enhancement, and preservation opportunities requires a more in-depth understanding of the specific functions and values these wetlands provide. Inventory work to-date provides an indication that the watershed's wetlands possess unique plant communities and water chemistry that is unique to the metropolitan area. Further study would help benefit the district's understanding of these resources and how best to prioritize future investments in restoration, enhancement, and preservation projects.

4.5.4 Policies, Goals, and Implementation Activities

The policies, goals, and implementation activities related to these sub-issue areas are summarized in the following tables.

Table 27. Wetland Management Policies, Goals, and Implementation Activities

SUB-ISSUE 1:	**Wetland Functions and Values**		
POLICY 1:	**BCWD is committed to maintaining the functions and values of high-quality wetlands and improving the functions and values of degraded and drained wetlands in the watershed.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Ensure no net loss of wetland functions and values within the watershed. 	**1**	Maintain the high-level functions and values of the watershed's fen through vegetation management to control the encroachment of invasive vegetation on the wetland and through protection of the fen groundwater recharge area.
		2	**SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER LAKE, POND, AND WETLAND MANAGEMENT PLAN (TABLE 82).**
		3	Evaluate the impact of a proposed rule amendments for additional protection of wetlands with regionally important plant communities (e.g., open bogs, coniferous bogs, sedge mats, calcareous fens).
		4	Select two to five sentinel wetlands[1] to conduct five-year monitoring for land-use and climate change implications, and assess ten different wetlands on a bi-annual basis to expand the function and value assessment.
		5	Evaluate the feasibility of creating a wetland bank in the watershed.
		6	*Addressed through administration of BCWD's regulatory standards and criteria.*
B	Enhance the functions and values of the watershed's degraded wetlands.	**1**	Restore wetland on Mendel Road tributary with landowner collaboration.
		2	Improve the quality of buffers in priority wetlands as identified in the district's wetland functions and values assessment through preservation, restoration, and enhancement projects - **SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER LAKE, POND, AND WETLAND MANAGEMENT PLAN (TABLE 82).**
		3	Utilize the land conservation program to pursue easement opportunities on high-quality wetlands, identified through ongoing wetland function and value inventory updates.
C	Continue to support the Wetland Conservation Act (WCA).	**1**	Continue to serve on the Technical Evaluation Panel for WCA.

[1] Sentinel wetlands refer to wetlands assessed with specific characteristics that make them useful indicators of changes to their environment over time.

D	Protect the quantity and quality of buffers around the wetlands in the watershed.	**1**	Conduct routine evaluations of wetland buffers recorded via the district's regulatory program to ensure the quantity and quality of recorded buffers are being maintained.
		2	*Addressed through administration of BCWD's regulatory standards and criteria.*
E	Contain and reduce the spread of invasive wetland plants, including aquatic invasive species (AIS).	**1**	*Addressed through Ecological Health.*

Table 28. Projected Expenditures (in 1,000's) for Wetland Management Practices

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr. Total
Maintain the high-level functions and values of the watershed's fen through vegetation management to control the encroachment of invasive vegetation on the wetland and through protection of the fen groundwater recharge area.	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	45
Select two to five sentinel wetlands to conduct five-year monitoring for land-use and climate change implications, and assess ten different wetlands on a bi-annual basis to expand the function and value assessment.	*10*		*10*		*10*	*5*	*10*		*10*	*5*	*60*
Evaluate the feasibility of creating a wetland bank in the watershed.			*25*								*25*
Restore wetland on Mendel Road tributary with landowner collaboration.								*50*	*100*	*20*	*170*
Improve the quality of buffers in priority wetlands as identified in the district's wetland functions and values assessment through preservation, restoration, and enhancement projects - **SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER LAKE, POND, AND WETLAND MANAGEMENT PLAN (TABLE 82).**	7.5	7.5	8	8	8	8.5	8.5	8.5	9	9	82.5
Conduct routine evaluations of wetland buffers recorded via the district's regulatory program to ensure the quantity and quality of recorded buffers are being maintained.	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	25
Total for Wetland Management	**24.5**	**14.5**	**50**	**15**	**25**	**20.5**	**25.5**	**65.5**	**126**	**41**	**407.5**

Table 29. Wetland Management Implementation Activities covered by Administration and/or Project Development

Continue to serve on the Technical Evaluation Panel (TEP) for WCA.
Utilize the land conservation program to pursue easement opportunities on high-quality wetlands, identified through ongoing wetland function and value inventory updates.

Table 30. Wetland Management Implementation Activities covered by Regulatory Program

Evaluate the impact of a proposed rule amendments for additional protection of wetlands with regionally important plant communities (e.g., open bogs, coniferous bogs, sedge mats, calcareous fens).

BCWD's consultant biologists conducting a wetland inventory in 2024.

4.6 Floodplain and Flood Management

4.6.1 General Issue Statement

Historically, localized flooding within the watershed has damaged or threatened to damage private properties and public infrastructure. Hydrologic and hydraulic model updates using updated Atlas 14 rainfall data show that there are now properties with inadequate freeboard, putting them at increased risk of flood damage. BCWD recognizes that the risk of flooding now and into the future will increase because of climate trends and events. Flooding can subject properties to damage (including damage that may not be covered by insurance) and pose health risks when flood waters intersect with drinking water wells.

These threats pose unique challenges in the watershed, which contains numerous landlocked basins. The loss of flood storage areas through land and basin alterations can increase the frequency, elevation, and duration of flooding and can result in increased impacts on infrastructure, property, as well as the natural environment.

4.6.2 Relevance to the District

Flooding is a natural occurrence that is vital to the health of many ecosystems. Natural water bodies and constructed stormwater management facilities within the watershed function as flood storage areas. As Minnesota's climate continues to change, there will continue to be an increase in the frequency of flooding. During the next century, spring rainfall and annual precipitation are likely to increase, and severe rainstorms are likely to intensify. These wetter conditions will result in elevated groundwater levels, which limits stormwater infiltration, thereby increasing the rate and volume of runoff traveling downstream. In addition, alterations to the floodplain, outlets of water bodies, or stormwater management facilities can change flooding characteristics and impact properties and natural resources. According to the landlocked basin analysis the district performed in 2025 (using the updated NOAA Atlas 14 Precipitation-Frequency Atlas of the United States), the 108 subwatersheds within the watershed that are landlocked for the 100-year, 10-day event may be at an elevated risk for flooding if changes in adjacent land uses cause increased volumes of runoff to enter the basins. Additionally, existing or proposed structures in and around flood storage areas require protection from damage caused by flooding.

4.6.3 Sub-Issue Areas

4.6.3.1 Flood Prevention

Maintaining the hydrologic balance of the watershed is critical to addressing impacts of flooding. As precipitation patterns change, the management approach must adapt to promote resiliency.

4.6.3.2 Protection of Flood Storage Areas

The natural process of flooding can threaten public safety and damage private property and structures if the areas that naturally store floodwater are filled. Filling flood storage areas (with earthen fill) increases the frequency of flooding and increases the water surface elevation of a flood.

4.6.3.3 Flood Mitigation and Management of Flood-Prone Areas

Areas prone to flooding, as identified in the hydrologic and hydraulic model, such as lands adjacent to lakes, streams, and wetlands or within landlocked basins, should be managed to avoid impacts to infrastructure and structures. Development within these flood-prone areas can remove critical stabilizing features, such as vegetation and shoreline structure. Instability along the shoreline of streams and lakes leads to negative ecological impacts, such as erosion and loss in biodiversity. Structures should be placed where the risk of flooding is low to avoid damage.

4.6.4 Policies, Goals, and Implementation Activities

The policies, goals, and implementation activities related to the sub-issue areas stated above are summarized in the following tables.

BCWD's overarching policy regarding flooding is two-pronged:

The district uses its rules and permitting program to set clear standards for protecting flood-storage capacity throughout the watershed. For example, current rules require new and existing structures to be at least two feet above the 100-year flood level and prohibit loss of storage volume within the floodplain. These standards must be consistently applied by all regulatory entities throughout the watershed.

The district collaborates with private property owners, watershed cities and townships, Washington County, and state agencies to identify flood risks, then undertakes projects and programs to mitigate those risks. This policy recognizes that while the district will continue to strive to be a primary source for flood-risk and climate-change data and analysis in the watershed, it cannot address all current and future flood risks on its own, especially as rain events increase in intensity and duration.

It is important to note that this watershed management plan is intended to support and be consistent with Washington County's All-Hazard Mitigation Plan by identifying and advancing flood risk-reduction strategies that reduce impacts on people, property, infrastructure, and natural resources.

Table 31. Floodplain and Flood Management Policies, Goals, and Implementation Activities

SUB-ISSUE 1:	**Flood Prevention**		
POLICY 1:	**BCWD will collect, analyze and publish watershed flooding and rainfall data, including water elevations and other hydrological information, to serve as a technical resource for district communities.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Operate with the most current data on flooding and climate change impacts to water resources and infrastructure.	**1**	Conduct routine updates to the district's hydrologic and hydraulic model including conducting flood vulnerability assessments for current and future storm forecasts, stormwater design performance, critical infrastructure, and to inform analysis of BCWD's rules. *Cost reflected in Monitoring.*
		2	Develop and implement a community flood reporting campaign that generates documented flood reports for model validation and public awareness.
POLICY 2:	**BCWD recognizes the need to balance flood prevention and mitigation by integrating upstream runoff reduction, floodplain management, and infrastructure improvements. The district will collaborate with property owners, local communities, and state and federal agencies to reduce flood risk under current and future conditions.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Mitigate flood risk in the watershed by partnering with local governments and agencies to implement flood mitigation strategies.	**1**	Increase watershed resilience to flooding by enhancing flood storage and flow management through coordinated implementation of wetland restoration, outlet improvements, and smart outlet technologies.
		2	Acquire properties vulnerable to flooding, subject to technical review demonstrating public benefit provided through the district's action.

B	Ensure the district's rules address future flood impacts under Atlas 15. 	**1**	Continually evaluate the usability, efficacy, and application of BCWD's rules, and evaluate the need to revise the rules every five years.
		2	Implement rate control and volume control standards through the district's rules to minimize the impact of development.
		3	Implement low floor elevation standards for new developments through the district's rules.
C	Encourage resident adoption of adaptation measures that reduce their flood risk.	**1**	*Addressed through Education and Outreach.*
POLICY 3:	**BCWD will plan and implement projects with public and private partners to increase flood resilience in the watershed, providing flood storage and hazard mitigation through regional stormwater management to reduce the impacts of flooding and promote recharge.**		
GOAL		**IMPLEMENTATION ACTIVITIES**	
A	Increase the use of climate-resilient strategies in the watershed contributing to the Lower St Croix *One Watershed, One Plan's* runoff retention goal by increasing flood storage across the watershed by 0.4 inches. 	**1**	Encourage utilizing regional stormwater management provisions in BCWD's rules.
		2	Implement regional stormwater management projects with municipal partners.
		3	Restore flood storage capacity and construct, if feasible, additional flood storage capacity in critical locations with public and private partners.
SUB-ISSUE 2:	**Protection of Flood Storage Areas**		
POLICY 1:	**BCWD is committed to protecting flood storage areas to reduce the impacts of flooding and promote recharge.**		
GOAL		**IMPLEMENTATION ACTIVITIES**	
A	Ensure no net loss of flood storage capability within the watershed. 	**1**	*Addressed through administration of BCWD's regulatory standards and criteria.*
		2	Maintain the flood-risk mitigation functionality of Kismet Basin and the Trout Habitat Preservation Project (THPP) while evaluating and implementing opportunities to enhance storage and/or infiltration capacity where feasible. *Addressed through administration of the Capital Improvement Program Standard Operating Procedures.*
		3	Promote natural asset management by supporting member communities in identifying, valuing, and protecting natural features that provide flood storage and contribute to stormwater management and watershed resilience.
		4	Review and, as necessary, amend BCWD's rules to require no net loss of flood storage from permitting activities. *Costs reflected in Regulations.*

SUB-ISSUE 3:	Flood Mitigation and Management of Flood Prone Areas		
POLICY 1:	**BCWD will continue to protect structures and natural communities from flooding exceeding natural water level fluctuations.**		
GOAL		**IMPLEMENTATION ACTIVITIES**	
A	Assess the potential for flooding properties when evaluating land management activities. 	**1**	*Addressed through administration of BCWD's regulatory standards and criteria.*
		2	Expand mapping of flood intersections with infrastructure beyond the work completed to assess lakes (e.g., at culverts and low points in the landscape).
		3	Continue to monitor lake levels and shallow aquifer groundwater levels to evaluate conditions that may cause impacts to existing structures.
POLICY 2:	**BCWD will collaborate with property owners, watershed communities, and state and federal agencies on structural and non-structural strategies that balance reducing flood risk under current conditions while adapting to increased precipitation intensity and frequency associated with future climate scenarios.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Acquire at-risk properties with opportunities for public co-benefits associated with this plan's goals. 	**1**	Utilize the land conservation program to acquire properties with a floodplain management co-benefit.
B	Support property owners' efforts to manage their flood risk. 	**1**	Provide technical assistance to homeowners experiencing or at risk of flooding.
		2	Develop outreach and guidance materials related to flood-risk management, and conduct community meetings to disseminate flood-risk assessment data and guidance.
		3	Develop a homeowner's packet for at-risk properties.
		4	Develop a request for proposals template for homeowners seeking engineering design and construction services.
		5	Evaluate the impact of a proposed rule change to allow mitigation without exacerbating onsite flood risk.
		6	Explore expansion of BCWD's cost-share program to include water quantity as well as water quality projects.
POLICY 3:	**BCWD will maintain and enhance existing BCWD capital improvement projects that provide storage and hazard mitigation.**		
GOAL		**IMPLEMENTATION ACTIVITIES**	
A	Ensure capital improvement projects are meeting their flood storage design specifications. 	**1**	Evaluate and implement changes to existing BCWD projects that provide opportunities for adaptive management, upscaling retrofits, and use of innovative technology to improve performance under a changing climate.
		2	Conduct a GIS analysis intersecting low-lying areas and areas of high groundwater elevations to identify areas susceptible to groundwater flooding.

Table 32. Projected Expenditures (in 1,000's) for Floodplain and Flood Management Practices

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr. Total
Promote natural asset management by supporting member communities in identifying, valuing, and protecting natural features that provide flood storage and contribute to stormwater management and watershed resilience.	50	75	75	75	75	75	75	75	75	75	725
Conduct a GIS analysis intersecting low-lying areas and areas of high groundwater elevations to identify areas susceptible to groundwater flooding.									10		10
Total for Floodplain and Flood Management	**50**	**75**	**75**	**75**	**75**	**75**	**75**	**75**	**85**	**75**	**735**

Table 33. Floodplain and Flood Management Implementation Activities covered by Administration and/or Project Development

Provide technical assistance to homeowners experiencing or at risk of flooding.
Utilize the land conservation program to acquire properties with a floodplain management co-benefit.

Table 34. Floodplain and Flood Management Implementation Activities covered by Baseline Monitoring Program

Conduct routine updates to the district's hydrologic and model including conducting flood vulnerability assessments for current and future storm forecasts, stormwater design performance, critical infrastructure, and to inform analysis of BCWD's rules.
Continually evaluate the usability, efficacy, and application of BCWD's rules, and evaluate the need to revise the rules every five years.
Continue to monitor lake levels and shallow aquifer groundwater levels to evaluate conditions that may cause impacts to existing structures

Table 35. Floodplain and Flood Management Implementation Activities covered by Regulatory Program

Develop and implement a community flood reporting campaign that generates documented flood reports for model validation and public awareness.
Implement rate control and volume control standards through the district's rules to minimize the impact of development.
Implement low floor elevation standards for new developments through the district's rules.
Encourage utilizing regional stormwater-management provisions in BCWD's rules.
Review and, as necessary, amend BCWD's rules to require no net loss of flood storage from permitting activities.
Expand mapping of flood intersections with infrastructure beyond the work completed to assess lakes.
Evaluate the impact of a proposed rule change to allow mitigation without exacerbating onsite flood risk.

Table 36. Floodplain and Flood Management Implementation Activities covered by Capital Improvement Program

Increase watershed resilience to flooding by enhancing flood storage and flow management through coordinated implementation of wetland restoration, outlet improvements, and smart outlet technologies.
Acquire properties vulnerable to flooding, subject to technical review demonstrating public benefit provided through the district's action.
Implement regional stormwater-management projects with municipal partners.
Restore flood-storage capacity and construct, if feasible, additional flood-storage capacity in critical locations with public and private partners.
Maintain the flood-risk mitigation functionality of Kismet Basin and the Trout Habitat Preservation Project (THPP) while evaluating and implementing opportunities to enhance storage and/or infiltration capacity where feasible. Addressed through administration of the Capital Improvement Program Standard Operating Procedures.
Explore expansion of BCWD's cost-share program to include water quantity as well as water quality projects.
Evaluate and implement changes to existing BCWD projects that provide opportunities for adaptive management, upscaling retrofits, and use of innovative technology to improve performance under a changing climate.

Table 37. Floodplain and Flood Management Implementation Activities covered by Education and Outreach

Develop outreach and guidance materials related to flood-risk management and conduct community meetings to disseminate flood-risk assessment data and guidance.
Develop a homeowner's packet for at-risk properties.
Develop a request for proposals template for homeowners seeking engineering design and construction services.

Goggins Lake in 2025, one of the lakes benefitted by flood prevention in BCWD's first capital improvement project.

4.7 Groundwater Management

4.7.1 General Issue Statement

Land-altering activities and climate change have the potential to impact groundwater resources as well as groundwater-dependent natural resources. Without proper land-use and water resource management, reduced groundwater recharge, reduced groundwater quality, alterations to drinking water supply, potential for groundwater flooding, and alterations to the functions and values of groundwater-dependent natural resources may occur.

Climate change is impacting groundwater. Research suggests climate change will impact groundwater recharge through reduced infiltration during high-intensity precipitation events. Emerging research suggests warmer surface waters infiltrating into groundwater have the potential to raise groundwater temperatures, impacting groundwater-dependent natural resources.

As a regional issue that crosses multiple communities and watershed districts, BCWD recognizes that partnership with the Minnesota Department of Natural Resources, Minnesota Pollution Control Agency, Minnesota Department of Health, Metropolitan Council, and local communities is critical to understanding this complex issue.

4.7.2 Relevance to the District

Brown's Creek Watershed District has been proactively managing its unique groundwater-dependent natural resources since its inception in 1997. While Brown's Creek was the focal point initially, BCWD has come to recognize the value in protecting the other high-quality and highly sensitive groundwater-dependent natural resources in the watershed, including:

- Wetlands
- Fens (rare wetlands with high pH)
- Springs and spring creeks
- Most lakes

The impairment of Brown's Creek, declining groundwater levels, and reduced baseflow in the creek highlight the need to protect, conserve, and utilize the region's groundwater in ways that protect public health, protect groundwater as a source of all the publicly-supplied drinking water in the watershed, support economic growth and development, maintain habitat and ecosystem health, and provide for recreational opportunities. The increasing use and reliance on artificial intelligence systems and the growing need for data centers poses new threats to groundwater management, drinking water supplies, and groundwater-dependent natural resources. The Midwest is an emerging market for data center development with at least 12 technology giants and third-party developers seeking to build data centers in Minnesota in 2025.

Historic high flooding in Kimbro Basin in summer 2020 exposed that there remain significant gaps in our understanding of how groundwater impacts the watershed. Developing a greater understanding of the watershed's groundwater resources plays a key role in monitoring change and providing more informed decision-making on how to manage groundwater and its dependent resources. The Washington County Groundwater Plan (2025-2035) lists several actions that should be addressed by watershed management organizations (WMOs) including BCWD.

4.7.3 Sub-Issue Areas

4.7.3.1 Management of Groundwater Quality

Groundwater supplies all the drinking water within the watershed and Washington County. Pollution prevention is the key to maintaining this vital resource. The cleanup of aquifers is expensive, takes a long time, and is often not even possible with current technology. Ensuring that volume control and infiltration practices installed within the watershed will not lead to contamination of groundwater aquifers is important to the protection of drinking water sources.

4.7.3.2 Management of Groundwater Recharge, Supply, and Groundwater-Dependent Natural Resources

Drinking water supplies and groundwater-dependent natural resources need a sustainable supply of groundwater to remain viable. Impervious surfaces can reduce the amount of water that infiltrates and recharges aquifers. Excessive groundwater withdrawals from wells can alter groundwater flow and limit the availability of groundwater for other purposes. Groundwater sustainability can generally be defined as groundwater withdrawals and natural discharges being equal to groundwater recharge, with no negative impacts to surface water bodies. Groundwater recharge occurs on a large scale throughout the watershed. In fact, some groundwater within the watershed boundaries may be recharged by areas outside the watershed.

BCWD intends to proactively manage groundwater resources in the watershed rather than reactively responding to a crisis. Groundwater elevations and flow are controlled by long-term trends in climate, recharge, and groundwater withdrawal. By the time low groundwater elevations or discharges become a problem, it may be too late to implement a timely solution. BCWD will not only monitor trends in groundwater elevations and water use but also try to recognize and predict when and where issues could arise in the future and implement policies to avoid adverse effects on natural resources and water supplies.

4.7.3.3 Groundwater Flooding

Flooding of groundwater-dependent natural resources represents an emerging concern highlighted by historic flooding in Kimbro Basin in 2020. Managing groundwater flooding is a new area for BCWD to consider as climate change continues to alter the water supply. Understanding future groundwater flooding and monitoring groundwater levels will inform the district's role in protecting properties from flooding and communicating the impacts of this type of flooding to watershed partners.

4.7.4 Policies, Goals, and Implementation

The policies, goals, and implementation activities related to these sub-issue areas are summarized in the following tables.

Table 38. Groundwater Management Policies, Goals, and Implementation Activities

SUB-ISSUE 1:	**Management of Groundwater Quality**		
POLICY 1:	**BCWD supports protecting groundwater quality.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Establish controls to reduce the potential for transport of pollutants into the groundwater.	**1**	Support Washington County and the Minnesota Pollution Control Agency on regional groundwater programs including well-sealing, addressing potential contamination from septic systems, contaminants of emerging concern (e.g., PFAS), and well water testing.

		2	*Addressed through administration of BCWD's regulatory standards and criteria.*
		3	*Addressed through Education and Outreach.*
B	Cooperate with the wellhead protection and source water assessment efforts of municipalities and others.	**1**	Review water appropriation permits for potential impacts to groundwater levels in other wells and groundwater flow to groundwater dependent natural resources to provide input on the Minnesota Department of Natural Resources' review process.
		2	Collaborate with the Minnesota Department of Health to review and resolve differences related to BCWD-identified areas of contamination concern and recharge protection in the drinking water supply management areas (DWSMA) and aquifer vulnerability assessments delineated by Stillwater and Oak Park Heights.
		3	Share relevant data on groundwater resources and resource protection areas with municipalities for use in comprehensive plan updates, wellhead protection plans, and source water assessments.
SUB-ISSUE 2:	**Management of Groundwater Recharge, Supply, and Groundwater-Dependent Natural Resources**		
POLICY 1:	**BCWD is committed to sustaining the quantity of groundwater within the watershed to support its groundwater resources in response to land use and climate change.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Work with state and other local partners to achieve pre-settlement recharge conditions within the watershed. 	**1**	Utilize the land conservation program to identify and protect groundwater recharge areas.
		2	Continue to participate in the North and East Metro Groundwater Management Area Plan Project Advisory Team by attending meetings.
		3	Ensure future rule and policy updates reflect a commitment to "no-net loss" of recharge due to the construction of impervious surfaces.
		4	Address issues related to modern water utility management by leading the development of an integrated water utility roadmap with financial support from district communities. This roadmap will explore opportunities to break down the silos among water, wastewater, and stormwater to create a more sustainable water future. It will establish a framework for member communities so that as opportunities to upgrade or repair systems arise, utilities are not only examining existing needs but making changes to modernize and make systems more resilient.
		5	*Addressed through administration of BCWD's regulatory standards and criteria.*
B	Protect Brown's Creek and other groundwater-dependent natural resources from the negative impacts of groundwater overuse.	**1**	Utilize a cost-share approach to assist businesses, residents, and local governments in reducing their groundwater use and encouraging reuse where feasible (e.g., Stillwater Country Club, Loggers Trail). *Cost reflected in Stormwater Management.*

C	Gather information to support the district's understanding of groundwater quantities and groundwater flow.	**1**	Collect groundwater elevation data from residential wells, monitoring wells, high-capacity wells, and near landlocked basins at least annually. Install data recorders to collect more frequent measurements where possible. Share information with Washington County and the Metropolitan Council.
		2	Work with the Minnesota Department of Natural Resources' observation well program and others to install deep observation wells near Brown's Creek to monitor bedrock aquifers.
		3	Conduct groundwater monitoring and research aligning with the Minnesota Department of Health, Washington County, and Metropolitan Council priorities. Opportunities include but are not limited to: • Groundwater elevation data in Brown's Creek reaches • Chemistry monitoring near groundwater dependent natural resources • Dye tracing • Inventorying seepage points • Pumping tests
SUB-ISSUE 3:	**Groundwater Flooding**		
POLICY 3:	**BCWD is committed to understanding the conditions that can lead to groundwater flooding and communicating this to Washington County, local government units (LGUs), and property owners.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Identify areas susceptible to groundwater flooding. 	**1**	Conduct a GIS analysis intersecting low-lying areas and areas of high groundwater elevations to identify areas susceptible to groundwater flooding. *Cost reflected in Floodplain and Flood Management.*
		2	*Addressed through Floodplain and Flood Management.*
B	Work with private property owners to reduce groundwater-related flooding. 	**1**	Utilize the district's cost-share program to install best management practices that mitigate groundwater flooding.
		2	*Addressed through Education and Outreach.*

Table 39. Projected Expenditures (in 1,000's) for Groundwater Management Practices

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr. Total
Review water appropriation permits for potential impacts to groundwater levels in other wells, and groundwater flow to groundwater dependent natural resources to provide input on the DNR's review process.	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*10*

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr. Total
Collaborate with the Minnesota Department of Health to review and resolve differences related to BCWD-identified areas of contamination concern and recharge protection in the drinking water supply management areas (DWSMA) and aquifer vulnerability assessments delineated by Stillwater and Oak Park Heights.	1	1	1	1	1	1	1	1	1	1	10
Continue to participate in the North and East Metro Groundwater Management Area Plan Project Advisory Team by attending meetings.	2	2	2	2	2	2	2	2	2	2	20
Address issues related to modern water utility management by leading the development of an integrated water utility roadmap with financial support from district communities. This roadmap will explore opportunities to break down the silos among water, wastewater, and stormwater to create a more sustainable water future. It will establish a framework for member communities so that as opportunities to upgrade or repair systems arise, utilities are not only examining existing needs but making changes to modernize and make systems more resilient.	*10*	*10*									*20*
Collect groundwater elevation data from residential wells, monitoring wells, high-capacity wells, and near landlocked basins at least annually. Install data recorders to collect more frequent measurements where possible. Share information with Washington County and the Metropolitan Council.	5	5	5	5	5	5	5	5	5	5	50
Work with the Minnesota Department of Natural Resources' observation well program and others to install deep observation wells near Brown's Creek to monitor bedrock aquifers.	1	1	1	1	1						5

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr. Total
Conduct groundwater monitoring and research aligning with the Minnesota Department of Health, Washington County, and Metropolitan Council priorities. Opportunities include but are not limited to: • *Groundwater elevation data in Brown's Creek reaches* • *Chemistry monitoring near groundwater dependent natural resources* • *Dye tracing* • *Inventorying seepage points* • *Pumping tests*	*12.5*	*12.5*	*12.5*	*12.5*	*12.5*	*12.5*	*12.5*	*12.5*	*12.5*	*12.5*	*125*
Total for Groundwater Management	**32.5**	**32.5**	**22.5**	**22.5**	**22.5**	**21.5**	**21.5**	**21.5**	**21.5**	**21.5**	**240**

Table 40. Groundwater Management Implementation Activities covered by Administration and/or Project Development

Support Washington County and the Minnesota Pollution Control Agency on regional groundwater programs including well-sealing, addressing potential contamination from septic systems, contaminants of emerging concern (e.g., PFAS), and well water testing.
Share relevant data on groundwater resources and resource protection areas with municipalities for use in comprehensive plan updates, wellhead protection plans, and source water assessments.
Utilize the land conservation program to identify and protect groundwater recharge areas.

Table 41. Groundwater Management Implementation Activities covered by Regulatory Program

Ensure future rule and policy updates reflect a commitment to "no-net loss" of recharge due to the construction of impervious surfaces.

Table 42. Groundwater Management Implementation Activities covered by Capital Improvement Program

Utilize the cost-share program to assist businesses, residents, and local governments in reducing their groundwater use and encouraging reuse where feasible (e.g., Stillwater Country Club, Loggers Trail). *Cost reflected in Stormwater Management.*
Utilize the district's cost-share program to install best management practices that mitigate groundwater flooding.

Marsh marigolds growing in a groundwater seepage area near Brown's Creek in 2026.

4.8 Ecological Health

4.8.1 General Issue Statement

Restoring and protecting the district's surface water resources requires a healthy watershed where natural land cover supports hydrologic and geomorphic processes; there is habitat of sufficient size and quality to support native upland, aquatic, and riparian species; and there is water quality that supports healthy biological communities. Native plants provide important benefits: their deep roots help control runoff, reduce erosion, and reduce flooding; they provide shelter and food for wildlife, including pollinators; they require little-to-no fertilizer, which keeps nutrients out of the water system; and they are generally well-adapted to local climate conditions. BCWD shares discoveries of unique and sensitive plants and animals to increase awareness of the value of protecting healthy watersheds and to improve understanding of management actions needed to avoid adverse impacts to rare species.

4.8.2 Relevance to the District

BCWD is home to several unique ecosystems which provide habitat for rare and sensitive plant and animal communities. Despite the rate at which land-use changes have occurred in the eastern part of the Twin Cities Metropolitan Area, the watershed still has several high-quality resources which warrant protection. To date, BCWD has focused a significant amount of effort on protecting and restoring Brown's Creek. Given its designation as a cold-water fishery, Brown's Creek has been actively managed by the Minnesota Department of Natural Resources as a trout stream, with a focus on the trout population of the creek. In addition to trout, the Brown's Creek corridor supports a variety of unique and rare species such as lesser purple fringed orchid (*Platanthera psycodes*), lance-leaved violet (*Viola lanceolata)*, rainbow darter (*Etheostoma caeruleum*), Blanding's turtle (*Emydoidea blandingii*), and cold-water-dependent macroinvertebrates. The steep topography, geologic setting, and high-quality vegetation of the Brown's Creek gorge supports walking fern (*Asplenium rhizophyllum*), butternut (*Juglans cinerea*), kittentails (*Besseya bullii*), and foraging and nesting habitat for the state-listed Louisiana waterthrush (*Parkesia motacilla*).

More recently, BCWD has been focusing on its lakes, ponds, wetlands, and associated upland areas. Lake management activities have resulted in the discovery of snailseed pondweed (*Potamogeton bicupulatus*), an endangered aquatic plant, in addition to other unique aquatic plants typically found farther north and east. These aquatic plants specialize in lakes with soft water chemistry and indicate the need to better understand the water chemistry of these lakes and the management activities needed to sustain these sensitive species. Similarly, a wetland inventory conducted in 2024 resulted in the discovery of a cranberry bog (northern shrub shore fen) which is home to carnivorous round-leaved sundew (*Drosera rotundifolia*), bog cranberry (*Vaccinium oxycoccos*), and a continuous carpet of sphagnum moss. Recent upland species discovered include hooded warbler (*Setophaga citrina*) and northern groundcedar (*Diphasiastrum complanatum*). The presence of these uncommon species and plant communities is an indication of the watershed's health and the need for protection by BCWD as well as private landowners.

4.8.3 Sub-Issue Areas

4.8.3.1 Sustaining Healthy Ecosystems

Identifying and protecting healthy ecosystems is a cost-effective approach to sustainable watershed management. The watershed is home to numerous high-quality ecosystems that provide a range of services, including climate regulation, flood regulation, groundwater recharge, water purification, pollination, recreation, aesthetic value, and wildlife habitat. By protecting the quality and quantity of these systems, BCWD is maintaining the services they provide for future generations.

4.8.3.2 Protect and Restore the Function of Upland Areas

The watershed is home to several plant and animal species that are sensitive and valuable from an ecological standpoint. These plant and animal species are indicators of a healthy watershed which reflects the land-use that supports them. BCWD intends to protect and enhance the upland areas to maximize the ecosystem services (e.g., soil health, infiltration, groundwater recharge, drinking water protection, wildlife habitat, rate control) provided by the landscape.

4.8.3.3 Invasive Species Management

Invasive species continue to spread throughout the region. Some invasive species pose direct risks to water resources within lakes and wetlands, while others pose impacts to upland areas where they negatively affect native vegetation, land cover, and soil health. For example, common buckthorn *(Rhamunus cathartica)* negatively impacts the understory, which results in soil erosion and increased nutrient and sediment load inputs to downstream resources. Managing species that negatively impact water resources plays an important role in maintaining the ecological integrity of the watershed.

4.8.3.4 Aquatic Plant Management

Aquatic vegetation plays a critical role in healthy lakes. The BCWD Board of Managers adopted an aquatic plant management policy in December 2025, which informs goals and implementation activities in several subsections of the plan:

- **Goal 4.4.D Lake Functions and Values:** Increase understanding of the distribution and growth of aquatic plant communities and how to manage them.
- **Goal 4.5 A Wetland Functions and Values:** Ensure no net loss of wetland functions and values within the watershed.
- **Goal 4.5 E Wetland Functions and Values:** Contain and reduce the spread of invasive wetland plants, including aquatic invasive species.
- **Goal 4.8 A Invasive Species Management:** Initiate and support AIS-management projects on private and public lands to improve water quality.

Generally, BCWD takes a holistic approach to aquatic plant management that aims to improve water quality and support growth of native vegetation that can effectively compete with invasive aquatic plants. BCWD does not manage native or invasive aquatic plants for recreational or aesthetic purposes. Management of aquatic vegetation in public waters is regulated by the Minnesota Department of Natural Resources, and generally, BCWD manages aquatic plants in the watershed in close collaboration with the agency, lakeshore property owners, and other stakeholders. BCWD's Aquatic Plant Management Policy is included in Appendix D.

4.8.4 Policies, Goals, and Implementation Activities

The policies, goals, and implementation activities related to these sub-issue areas are summarized in the following tables.

Table 43. Ecological Health Policies, Goals, and Implementation Activities

SUB-ISSUE 1:	**Sustaining Healthy Ecosystems**		
POLICY 1:	**BCWD will manage its surface waters, groundwater, wetlands, and associated upland areas with consideration for their ecological functions including increased biodiversity and wildlife habitat.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Continue to develop and refine the unique species inventory by identifying and mapping plants and animals in the watershed.	**1**	Create and maintain a unique species database using shared observation tools that allow community scientists, BCWD, the Minnesota Department of Natural Resources, and other volunteers to pool their observations. Regularly publish updates of the unique species inventory and incorporate findings into educational and outreach materials.
		2	Continue surveys for mussels in the lower gorge, particularly upstream of the 2015 unique species inventory survey area. Many riffles in the lower gorge have not been surveyed.
B	Use the unique species inventory to evaluate impacts on watershed management.	**1**	Review updated data on unique species with the CAC every four years, and provide recommendations to the board to inform policies, projects, and programs. Share outcomes with member communities to inform land use planning.
		2	Conduct fish barrier assessment of Brown's Creek through the first creek walkthrough of this plan to identify barriers and develop projects. *Cost reflected in Erosion and Sediment Control stream walkthrough*.
C	Promote the conservation of beavers as a keystone species that supports healthy, resilient ecosystems, and encourage coexistence with beavers where compatible with public safety, infrastructure, and land-use needs.	**1**	Develop a beaver management plan to inform how the district can maintain habitat and flow while preventing flooding of infrastructure and property.
SUB-ISSUE 2:	**Protect and Restore the Function of Upland Areas**		
POLICY 1:	**BCWD is committed to maintaining the ecological integrity and connectivity of intact ecosystems.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Reduce non-native plant cover, and replace it with high-value and functional native landscaping. 	**1**	Implement native plant community preservation and restoration projects (e.g., kittentail restoration work with Washington County and Mendel Wetland restoration).
		2	Enhance the management of the watershed's ecosystem services by implementing pollinator conservation strategies (e.g., recognize and support exemplar projects which restore and enhance habitat for pollinator species, work with road authorities to control invasives and promote establishment of pollinator species, work with county and municipalities to develop mowing plans and schedules that is more conducive to stormwater management and pollinator species).
		3	Lead a tour of high-quality rural wetland, pond, and lake ecological resources with the Minnesota Department of Natural Resources, Washington County, Washington Conservation District, communities (including staff and city councilors and officials), and other stakeholders to increase support for these features in regional planning and conservation activities.

		4	Work with the City of Stillwater and area residents to develop a plan and conduct on-going monitoring and maintenance of the oak forest found on the west side of Long Lake (identified as a rare feature) to evaluate its quality and if any management activities are needed to ensure its sustainability.
		5	Coordinate with the Minnesota Department of Natural Resources on future Minnesota Biological Survey assessments to share unique systems for data gathering and sharing. For example, addressing the under-ranked Minnesota Biological Survey site in Grant.
		6	Connect landowners with forestry-related technical assistance and implementation support from the Washington Conservation District.
		7	Work with landowners to diversify their land through woodland, grassland, and wetland management plans to help reduce the impacts of climate change (such as flooding, heat islands, and soil erosion) through the promotion of ecosystem services.
		8	Develop an incentive program to assist property owners with the conversion of non-native to native species.
		9	Work with homeowners' associations to pilot native species planting in their landscape management processes.
		10	Update the district's rules to provide greater incentive to incorporate and maintain native plantings as a condition of obtaining a permit.
		11	Collaborate with EMWREP on turf conversion public education and outreach.
B	Improve soil health through less intensive stewardship practices.	**1**	Partner with city parks departments to pilot rotational livestock grazing (by sheep, goats, or similar) of public parks to maintain turf areas.
SUB-ISSUE 3:	**Invasive Species Management**		
POLICY 1:	**The district takes an active role in preventing the spread of invasive species through education, partnerships, monitoring, and invasive species management projects.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Initiate and support aquatic invasive species (AIS) management projects on private and public lands when connected to water quality management and/or co-benefit towards other beneficial goals.	**1**	Conduct point-intercept surveys at each lake/pond > 20 acres in size every five to ten years with flexibility to buffer for management action and more frequent surveys as needed.
		2	Support initiatives by the county and other regional partners on AIS management.
		3	Record the location of invasive species, and implement control measures.
		4	Address aquatic invasive species management by providing education and outreach to residents and individuals recreating in the watershed. (e.g., bait disposal and discouraging pet release).

		5	Utilize the cost-share program to assist with invasive species management.
B	Initiate and support terrestrial invasive species management projects on private and public lands when connected to water quality management and/or co-benefit towards other beneficial goals.	**1**	Conduct on-going vegetation surveys (every five years) to evaluate community quality and invasive species to provide a more robust dataset that can be used to evaluate trends in plant community composition. A minimum of five wetland and five upland plots should be established for long-term monitoring.
		2	Provide public and private landowners with guidance, tools, and resources needed to manage existing habitat, improve species diversity, and protect against invasive species, erosion, and overuse (LSCR1W1P).

Table 44. Projected Expenditures (in 1,000's) for Ecological Health

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr. Total
Create and maintain a unique species database using shared observation tools that allows community scientists, BCWD, the Minnesota Department of Natural Resources, and other volunteers to pool their observations. Regularly publish updates of the unique species Inventory and incorporate findings into educational and outreach materials.	9	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	13.5
Continue surveys for mussels in the lower gorge, particularly upstream of the 2015 unique species inventory survey area. Many riffles in the lower gorge have not been surveyed.			4					4			8
Review updated data on unique species with the CAC every four years and provide recommendations to the board to inform policies, projects, and programs. Shared outcomes with member communities to inform land use planning				7.5				7.5			15
Develop a beaver management plan to inform how the district can maintain habitat and flow while preventing flooding of infrastructure and property.		5	10								15
Implement native plant community preservation and restoration projects (e.g., kittentail restoration work with Washington County, Mendel Wetland restoration).	7	3			7	3					20

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr. Total
Lead a tour of high-quality rural wetland, pond, and lake ecological resources with the Minnesota Department of Natural Resources, Washington County, Washington Conservation District, communities (including staff and city councilors), and other stakeholders to increase support for these features in regional planning and conservation activities.	*6*										*6*
Work with the City of Stillwater and area residents to develop a plan and conduct on-going monitoring and maintenance of the oak forest found on the west side of Long Lake (identified as a rare feature) to evaluate its quality and if any management activities are needed to ensure its sustainability.	1.5	10		1.5			1.5			1.5	16
Coordinate with the Minnesota Department of Natural Resources on future Minnesota Biological Survey assessments to share unique systems for data gathering and sharing. For example, addressing the under-ranked Minnesota Biological Survey site in Grant.	1.5										1.5
Support initiatives by the county and other regional partners on AIS management.	5	3	1	1	1	1	1	1	1	1	16
Conduct ongoing vegetation surveys (every five years) to evaluate community quality and invasive species to provide a more robust dataset that can be used to evaluate trends in plant community composition. A minimum of five wetland and five upland plots should be established for long-term monitoring.			6					6			12
Total for Ecological Health	**30**	**21.5**	**21.5**	**10.5**	**8.5**	**4.5**	**3**	**19**	**1.5**	**3**	**123**

Table 45. Ecological Health Implementation Activities covered by Administration and/or Project Development

Enhance the management of the watershed's ecosystem services by implementing pollinator conservation strategies (e.g., recognize and support exemplar projects which restore and enhance habitat for pollinator species, work with road authorities to control invasives and promote establishment of pollinator species, work with county and municipalities to develop mowing plans and schedules that is more conducive to stormwater management and pollinator species).

Table 46. Ecological Health Implementation Activities covered by Baseline Monitoring Program

Conduct point-intercept surveys at each lake/pond > 20 acres in size every five to ten years with flexibility to buffer for management action and more frequent surveys as needed.
Record the location of invasive species, and implement control measures.

Table 47. Ecological Health Implementation Activities covered by Education and Outreach

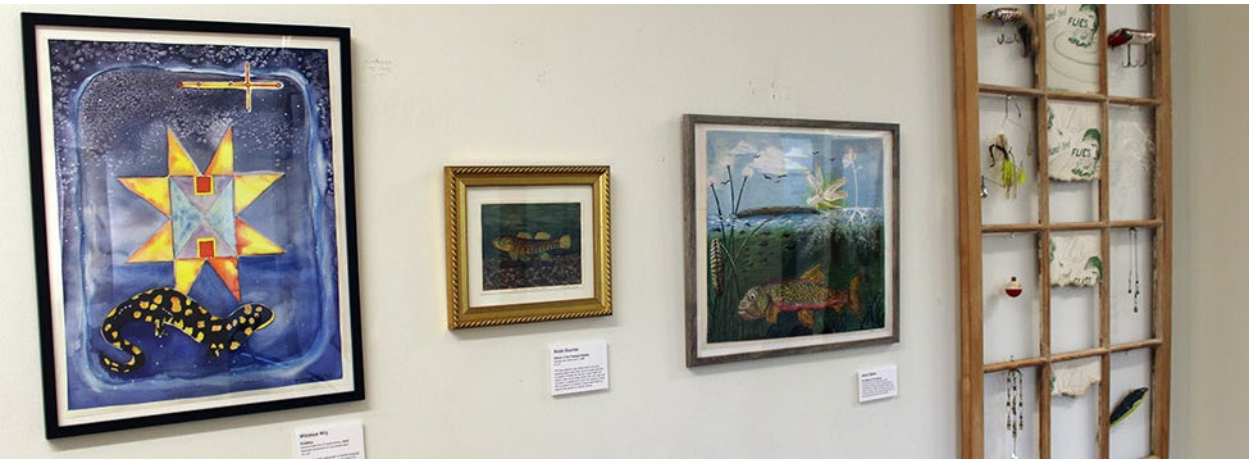
Connect landowners with forestry-related technical assistance and implementation support from the Washington Conservation District.
Collaborate with EMWREP on turf conversion public education and outreach
Address aquatic invasive species management by providing education and outreach to residents and individuals recreating in the watershed (e.g., bait disposal and discouraging pet release).
Provide public and private landowners with guidance, tools, and resources needed to manage existing habitat, improve species diversity, and protect against invasive species, erosion, and overuse (LSCR1W1P).

Table 48. Ecological Health Implementation Activities covered by Regulatory Program

Update the district's rules to provide greater incentive to incorporate and maintain native plantings as a condition of obtaining a permit.

Table 49. Ecological Health Implementation Activities covered by Capital Improvement Program

Work with landowners to diversify their land through woodland, grassland, and wetland management plans to help reduce the impacts of climate change (such as flooding, heat islands, and soil erosion) through the promotion of ecosystem services.
Develop an incentive program to assist property owners with the conversion of non-native to native species.
Work with homeowners' associations to pilot native species planting in their landscape management.
Partner with city parks departments to pilot rotational livestock grazing (by sheep, goats, or similar) of public parks to maintain turf areas.
Utilize the cost-share program to assist with invasive species management.



Artwork on display in 2026 of some of the rare species in the watershed as part of BCWD's "The Water Where We Live" exhibit in partnership with A House Unbuilt.

4.9 Monitoring and Data Collection

4.9.1 General Issue Statement

Monitoring and research data are needed to understand the watershed, evaluate issues, and determine appropriate watershed management approaches within the watershed. In addition, long-term monitoring provides the district with the data needed to demonstrate performance towards meeting the goals and objectives of the watershed management plan as well as the Brown's Creek TMDL Implementation Plan. BCWD should ensure that collected data and assessments are in a format that is understandable to the public.

4.9.2 Relevance to the District

BCWD has an extensive monitoring program that it conducts in partnership with the Metropolitan Council, Minnesota Department of Natural Resources, Washington Conservation District, Stillwater Area High School, and local volunteers. The monitoring data help determine the type and quantity of pollutants discharged to surface waters of the watershed as well as fluctuations in flow, lake levels, and groundwater levels. This baseline data can be used to assess progress towards management goals. As best management practices are implemented, it is important to measure their effectiveness in managing and treating stormwater runoff. Monitoring data should be used to guide future management decisions and to calibrate the district's hydrologic, hydraulic, and water quality loading models. The monitoring program also serves as a useful tool to help tell the story of change in the watershed by communicating how resources are responding to management activities facilitated by BCWD and its partners.

BCWD's monitoring program is described in detail in Appendix F. Monitoring reports are published annually on the BCWD website under the Monitoring and Data Collection page

4.9.3 Sub-Issue Areas

4.9.3.1 Monitoring Needs

Ongoing monitoring and research data are needed to understand the watershed, evaluate issues and concerns, determine watershed management needs, and track performance towards meeting goals.

4.9.3.2 Accessibility of Monitoring and Research Data

Monitoring and research data are difficult for the public to access and understand. The district needs to improve the way in which information is delivered to the public by making monitoring data available in user-friendly formats.

4.9.4 Policies, Goals, and Implementation Activities

The policies, goals, and implementation activities related to these sub-issue areas are summarized in the following tables.

Table 50. Monitoring and Data Collection Policies, Goals, and Implementation Activities

SUB-ISSUE 1:	**Monitoring Needs**		
POLICY 1:	**BCWD prioritizes cost-effective monitoring and research that measures the progress made towards achieving the district goals to conserve, protect, and restore natural resources.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Collect and analyze valuable information about the watershed's water resources and natural resources including climate change impacts to implement adaptive changes as needed. *Aligning with the LSCR1W1P: "Monitoring is completed to evaluate the condition of resources, target implementation and calibration of models, and evaluate our progress towards goals."* 	**1**	Continue to implement the Brown's Creek and lake baseline monitoring program at existing monitoring stations to track changes in the watershed and provide baseline data for modeling and other uses. Continue to collect data on water quality, continuous discharge, thermal monitoring, and local climatology. Includes costs for equipment, maintenance and upgrades.
		2	Develop comprehensive database for storm sewer and structures located in the watershed by compiling what has been surveyed to date, coordinating with member communities, and evaluating the need to supplement with future structure inventory surveys. Require, as a condition of permitted projects, the submittal of as-built electronic GIS files to keep the database up to date with new development.
		3	Conduct biennial drone flights (every other year) of the Brown's Creek corridor upstream of Highway 96 to monitor beaver dams and changes to the system. *Cost reflected in Erosion and Sediment Control.*
B	Conduct an assessment of the monitoring data to evaluate water quality trends and determine any necessary changes to the baseline monitoring program.	**1**	*Addressed through administration of the BCWD Baseline Monitoring Program.*
		2	Update the watershed conditions report every five years to assess the impact of BCWD programs on water quality, evaluate trends in watershed conditions (including impacts related to climate change and groundwater-dependent natural resources), and evaluate the need to make course corrections in strategy including updating the frequency of data collection where appropriate in the interest of cost effectiveness for resource monitoring.
C	Develop, maintain, and support the use of hydrologic, hydraulic, and water quality modeling tools that enhance understanding of the watershed's drainage systems and water quality dynamics, and provide member communities with reliable data to inform planning, project development, and decision-making. 	**1**	Conduct biennial updates to the district's hydrologic and hydraulic model to reflect new development activity and incorporate any new information collected by the district and/or member communities (e.g., structure inventories).
		2	Develop BATHTUB models for district monitored lakes to characterize internal and external pollutant loads (cost reflects one lake/year). **SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER LAKE, POND, AND WETLAND MANAGEMENT PLAN (TABLE 82).**

D	Monitor and understand the behaviors, practices, and perceptions of residents, businesses, developers, and communities within the watershed to identify opportunities to strengthen community stewardship, inform targeted outreach efforts, and guide the development and implementation of effective conservation and stormwater management projects.	**1**	Conduct surveys and field observations every three years to assess residents and businesses in watershed-friendly practices (e.g., raingardens, fertilizer use, shoreline management).
		2	Continue evaluating business and community chloride use, and identify salt use reduction strategies to limit chloride loading.
		3	Continue identifying cooperative opportunities with landowners to implement stream shading projects through site assessments, landowner outreach, and preparing project development materials.
		4	Continue implementing the enhanced stakeholder engagement process.
SUB-ISSUE 2:	**Accessibility of Monitoring and Research Data**		
POLICY 1:	**BCWD values information sharing among agencies and stakeholder groups and will make format and content of its data resources accessible.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Continue to monitor stormwater management facilities to evaluate long-term performance and obtain design information on infiltration rates, suspended solids removal rates, and phosphorus removal rates as appropriate to the facility. 	**1**	*Addressed through administration of the BCWD Capital Improvement Program.*
B	Make district best management practice information, collected data, and analysis available to everyone to inform greater adoption and evaluate long-term performance.	**1**	Provide district collected data and analysis through the BCWD website, EQUIS database, annual report, newsletter, and partnerships with EMWREP and St. Anthony Falls Laboratory.
		2	Share district collected data and analysis through events such as tours, advisory events, conferences, and the Washington County Water Consortium.
		3	Publish a plain-language watershed story update every five years aligning with the update to the watershed conditions report.
C	Meet Web Content Accessibility Guidelines (WCAG) 2.1 AA by April 26, 2028.	**1**	Audit and make necessary updates to the BCWD website to meet accessibility compliance guidelines.

Table 51. Projected Expenditures (in 1,000's) for Monitoring and Data Collection

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr Total
Continue to implement the Brown's Creek and lake baseline monitoring program at existing monitoring stations to track changes in the watershed and provide baseline data for modeling and other uses. Continue to collect data on water quality, continuous discharge data thermal monitoring, and local climatology data. Includes costs for equipment, maintenance and upgrades.	200	200	200	200	200	200	200	200	200	200	2,000

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr Total
Develop comprehensive database for storm sewer and structures located in the watershed by compiling what has been surveyed to date, coordinating with member communities and evaluating the need to supplement with future structure inventory surveys. Require, as a condition of permitted projects, the submittal of as-built electronic GIS files to keep the database up to date with new development.	*8*	*8*	*8*	*8*	*20*	*8*	*8*	*8*	*8*	*20*	*104*
Update the watershed conditions report every five years to assess the impact of BCWD programs on water quality, evaluate trends in watershed conditions (including impacts related to climate change and groundwater dependent natural resources), and evaluate the need to make course corrections in strategy.				15					15		30
Conduct biennial updates to district's hydrologic and hydraulic model to reflect new development activity annually and incorporate any new information collected by the district and/or member communities (e.g., structure inventories) before the next plan update.	7	7	7	7	7	7	7	120	7	7	183
Continue identifying cooperative opportunities with landowners to implement stream shading projects through site assessments, landowner outreach, and preparing project development materials.	1			1			1			1	4
Publish a plain-language watershed story update every five years aligning with the update to the watershed conditions report.					6.5					6.5	13
Total for Monitoring and Data Collection	**216**	**215**	**215**	**231**	**233.5**	**215**	**216**	**328**	**230**	**234.5**	**2,334**

Table 52. Monitoring and Data Collection Implementation Activities covered by Education and Outreach

Conduct surveys and field observations every three years to assess residents and businesses in watershed-friendly practices (e.g., raingardens, fertilizer use, shoreline management).
Continue to evaluate business and community chloride use and identify salt use reduction strategies to limit chloride loading.
Continue implementing the enhanced stakeholder engagement process.
Provide district collected data and analysis through the BCWD website, EQUIS database, annual report, newsletter, and partnerships with EMWREP and St. Anthony Falls Laboratory.
Share district collected data and analysis through events such as tours, advisory events, conferences, and the Washington County Water Consortium.
Audit and make necessary updates to the BCWD website to meet accessibility compliance guidelines.

Table 53. Monitoring and Data Collection Implementation Activities covered by Lake Management

Develop BATHTUB models for district monitored lakes to characterize internal and external pollutant loads (cost reflects one lake/year). **SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER LAKE, POND, AND WETLAND MANAGEMENT PLAN (TABLE 82).**

Brown's Creek, one of the primary water bodies monitored, flowing north of Brown's Creek Park in 2026.

4.10 Regulations

4.10.1 General Issue Statement

Under Minnesota Statutes section 103D.341, subdivision 1, watershed districts must adopt rules "to accomplish the purposes of [the watershed act] and to implement the powers of the managers." These purposes include conserving water for public use; controlling erosion and siltation of lakes, streams, and wetlands; and protecting water quality in these water bodies. Presenting rules in a clear, understandable fashion facilitates compliance by permit applicants. Coordination with district partners on regulatory issues is needed for more efficient and effective stormwater regulation across the watershed.

4.10.2 Relevance to the District

The district's current rules were adopted March 11, 2020, and were effective April 1 of the same year. The rules address stormwater management; erosion control; lake, stream, and wetland buffers; shoreline and streambank alterations; watercourse and basin crossings; and floodplain and drainage alterations. The district's permitting program is structured to provide clear guidance on requirements to a broad audience including developers, property owners, the design community, and residents. Regular inspections of construction activity ensure compliance and prevent impacts on downstream resources. While BCWD has always been interested in establishing partnerships to streamline watershed management (e.g., EMWREP), recent legislation promoting a *One Watershed, One Plan* approach to the management of surface water and groundwater resources has heightened the evaluation of other opportunities to make watershed management more efficient and cost-effective. For example, the district's standards, which are developed to mimic the natural hydrology of the landscape, will be examined to determine whether they can be effectively modified or amended to more closely align with those of adjacent watershed districts.

The district held two meetings with its member communities, regulatory agencies, development community, and homeowners' associations during the watershed management plan update process as a check-in on its rules ahead of a formal rule update process. These meetings identified several considerations for the rule update process including improving transparency, developing permittee resources, exploring innovative approaches, and creating greater consistency across municipalities in the watershed.

Anticipated evolution of the rules may seek to address the following topics through further discussion:

- Defining contributing area to groundwater-dependent natural resources.
- Reviewing development triggers.
- Applying water quality and volume management requirements to on-site stormwater flow alterations.
- Exemptions for routine agricultural activities.
- Language to address installation of geothermal practices.
- Maintenance standards.
- Assessing whether current stormwater management rules and regulations remain effective and resilient under projected future climate conditions, with the goal of identifying necessary updates to protect infrastructure, water quality, and natural resources.
- Providing credit toward compliance for the establishment of native vegetation.

BCWD's current rules are included in Appendix E.

4.10.3 Sub-Issue Areas

4.10.3.1 Coordination

BCWD will work closely with community planners, property owners, and the development community to get involved earlier in the plan development process and to make sure rules are properly understood.

4.10.3.2 Permit Program

The district intends to routinely evaluate its permitting program and to make improvements to the permitting, inspection, and permit closure process.

4.10.3.3 Rule Language

Rule thresholds, standards, and criteria will be revised to provide a consistent level of protection of water resources from risks presented by redevelopment projects.

4.10.4 Policies, Goals, and Implementation Activities

The policies, goals, and implementation activities related to these sub-issue areas are summarized in the following tables.

Table 54. Regulations Policies, Goals, and Implementation Activities

SUB-ISSUE 1:	**Coordination**		
POLICY 1:	**BCWD will coordinate its rules with other local, state, and federal regulatory requirements.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Coordinate with district partners early in the permit application stage.	**1**	Work with developers and municipalities to coordinate permit applications early in the design stage.
		2	Utilize local water management plan review and approval process to ensure implementation of water resource protection standards consistent with or more protective than district standards.
		3	Evaluate options for regional solutions with the development community and municipalities, with whom BCWD must coordinate for both construction of infrastructure (e.g., stormwater management facilities) and planning, zoning, and permitting. *Cost reflected in Floodplain and Flood Management.*
		4	Develop practical, non-technical guidance materials for the development and design communities and municipalities that support the design and implementation of stormwater management facilities - including green infrastructure - clarifying the permitting process and permit application submittal requirements. Guidance materials may include reference to adaptation necessary for projected climate conditions, with the aim to enhance system resilience, protect water quality, and support sustainable development across the watershed.
B	Ensure consistency of rules and use in partnership with surrounding watershed management organizations and interested parties.	**1**	Meet with the Washington County Water Consortium prior to rule revisions to discuss opportunities to streamline watershed management by partnering on programs and activities and by minimizing inconsistencies among regulatory programs.

C	Educate residents and landowners about BCWD's rules and other municipal/agency regulatory programs. 	**1**	Work with member municipalities to incorporate links to permit requirements of BCWD and other watershed districts and watershed management organizations in their jurisdiction on their planning/economic development pages.
		2	Share plain-language information and frequently asked questions about the rules through the district's website, annual reports, and partnership with EMWREP.
SUB-ISSUE 2:	**Permit Program**		
POLICY 1:	**BCWD strives to maintain a clear and effective permit program.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Conduct five-year evaluations of the district's permitting program.	**1**	Conduct a regulatory program evaluation by hosting workshops with local partners, surrounding watershed management organizations, developers, and the engineering design community.
B	Make improvements to the permit program that enhance the permittees' experience and streamline the permit approval process. 	**1**	Implement an online application portal and electronic payment process.
		2	Review permit fee structure every five years to ensure fees are clearly communicated and equitable.
		3	Conduct, as necessary, boundary review and revision with Rice Creek Watershed District, Carnelian Marine St. Croix Watershed District, Valley Branch Watershed District, and Middle St. Croix Watershed Management Organization by 2030 to ensure consistent application of water resource protections.
C	Provide technical and non-technical guidance to developers, the design community, and homeowners' associations to streamline the permitting process.	**1**	Administer BCWD's permit program. including activities such as: • Assisting applicants with permits and conducting a single consultation meeting that is free-of-charge early in the project-development process to identify which rules are triggered by the development activity and to discuss permit submittal and applicable regulatory requirements. • Conducting steep slope analysis for those permits that will trigger buffer requirements applicable to such landscapes.
D	Collaborate with partners to ensure that proper best management practice construction, and erosion and sediment control techniques are being implemented.	**1**	Maintain best management practice inspection database and permit inspection database.
E	Collaborate with district partners to improve the enforcement process for noncompliance with BCWD rules.	**1**	Meet with district partners to review current enforcement practices and explore collaborative approaches to achieve the most effective outcomes for protecting water resources.

SUB-ISSUE 3:	Rule Language		
POLICY 1:	BCWD will focus on keeping rules clear and up to date with revisions as needed.		
GOAL		IMPLEMENTATION ACTIVITIES	
A	Review the rules every five years to identify the need for revisions.	1	Continually track recommendations for improved usability, efficacy, and application of BCWD's rules, and evaluate the need to revise the rules every five years.
B	Regulate to provide a consistent level of resource protection for redevelopment projects by 2027 and revisit in 2032. 	1	Conduct a review and revision of BCWD's rules (adopted in 2020) in accordance with Minnesota Statutes section 103D.341. Further evaluate the need to develop and adopt rule language regulating to a simplified performance goal like the Minimal Impact Design Standard.

Table 55. Projected Expenditures (in 1,000's) for Regulatory Program

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr Total
Utilize local water management plan review and approval process to ensure implementation of water resource protection standards consistent with or more protective than district standards.	2	2	2	2							8
Develop practical, non-technical guidance materials for the development and design communities and municipalities that support the design and implementation of stormwater management facilities - including green infrastructure - clarifying the permitting process and permit application submittal requirements. Guidance materials may include reference to adaptation necessary for projected climate conditions, with the aim to enhance system resilience, protect water quality, and support sustainable development across the watershed.		20	20								40
Work with member municipalities to incorporate links to permit requirements of BCWD and other watershed districts and watershed management organizations in their jurisdiction on their planning/economic development pages.				15					15		30

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr Total
Conduct a regulatory program evaluation by hosting workshops with local partners, surrounding watershed management organizations, developers, and the engineering design community.				15					15		30
Implement the online application portal and electronic payment process.	5	5	5	5	5	5	5	5	5	5	50
Review permit fee structure every five years to ensure they are clearly communicated and equitable.				3					3		6
Administer BCWD's permit program, including activities such as: • Assisting applicants with permits and conducting a single consultation meeting that is free-of-charge early in the project-development process to identify which rules are triggered by the development activity and to discuss permit submittal and applicable regulatory requirements. • Conducting steep slope analysis for those permits that will trigger buffer requirements applicable to such landscapes.	100	100	100	100	100	100	100	100	100	100	1,000
Conduct a review and revision of BCWD's rules (adopted in 2020) in accordance with Minnesota Statutes section 103D.341. Further evaluate the need to develop and adopt rule language regulating to a simplified performance goal like the Minimal Impact Design Standard.	30					30					60
Total for Regulatory Program	**137**	**127**	**127**	**140**	**105**	**135**	**105**	**105**	**138**	**105**	**1,224**

Table 56. Regulations Implementation Activities covered by Regulatory Program

Work with the developers and municipalities to coordinate permit applications early in the design stage.
Conduct, as necessary, boundary review and revision with Rice Creek Watershed District, Carnelian Marine St. Croix Watershed District, Valley Branch Watershed District, and Middle St. Croix Watershed Management Organization by 2030 to ensure consistent application of water resource protections.
Maintain best management practice inspection database and permit inspection database.
Continually track recommendations for improved usability, efficacy, and application of the BCWD rules, and evaluate the need to revise the rules every five years.

Table 57. Regulations Implementation Activities covered by Education and Outreach

Share plain-language information and frequently asked questions about the rules through the district's website, annual reports, and partnership with EMWREP.
Meet with district partners to review current enforcement practices and explore collaborative approaches to achieve the most effective outcomes for protecting water resources.
Meet with the Washington County Water Consortium prior to rule revisions to discuss opportunities to streamline watershed management by partnering on programs and activities and by minimizing inconsistencies among regulatory programs.

Table 58. Regulations Implementation Activities covered by Floodplain and Flood Management

Evaluate options for regional solutions with the development community and municipalities.

A permitted construction project in the watershed in 2025 using erosion control best management practices.

4.11 Recreation

4.11.1 General Issue Statement

The Brown's Creek corridor and other natural areas within the watershed provide opportunities for fishing, wildlife viewing, and outdoor learning. As the district implements projects that provide more opportunities for people to engage with resources like Brown's Creek, ongoing monitoring is critical to ensure these resources are protected from overuse.

4.11.2 Relevance to the District

Recreational and tourism activities are two primary ecosystem services provided by the natural environment. The Brown's Creek corridor has an appealing aesthetic and has the potential to attract more frequent fishing, birdwatching, and environmental education or eco-tourism programs. Existing trails (e.g., Gateway Trail, Brown's Creek Trail, and roadside trails) and associated public access areas within the Brown's Creek corridor and the recent acquisition of the Brown's Creek Conservation Area property provides the necessary infrastructure to support increased outdoor recreation.

As greater public access to naturalized green spaces occurs, ensuring natural resources are enjoyed responsibly is critical to protecting the investments made by the district to improve watershed health. Greater access may increase the public's appreciation and desire to care for natural areas, helping supplement the district's existing and future efforts to protect and restore natural resources. BCWD's role should focus on the recreational co-benefits that can come from watershed resource improvement, and coordination with local units of government and state agencies on their public recreational resources.

4.11.3 Sub-Issue Areas

4.11.3.1 Recreational Opportunities

The watershed has several resources designated for recreational use, and there is interest in greater recreation opportunities throughout it. Improving water quality and enhancing wildlife habitat will increase the recreational value of the resources for the public's use.

To provide greater connectivity to certain resources, the district may need to be more flexible with its rules to permit the creation of new trails or sidewalks to formalize access.

Additionally, access to high-quality naturalized green spaces has well-documented benefits to peoples' physical and mental health. Improving access to opportunities to interact with improved natural resources presents the opportunity to achieve indirect co-benefits such as improved health outcomes and greater care for the resources they have access to.

4.11.3.2 Responsible Use

As opportunities to recreate in the watershed increase, individuals utilizing the resources for fishing, canoeing, biking, etc. need to do so responsibly.

By fostering opportunities to access improved natural resources, through areas such as the Brown's Creek Conservation Area, people are exposed to what healthy ecosystems look like, which may spark behavioral change to support the district's work.

4.11.4 Policies, Goals, and Implementation Activities

The policies, goals, and implementation activities related to these sub-issue areas are summarized in the following tables.

Table 59. Recreation Policies, Goals, and Implementation Activities

SUB-ISSUE 1:	**Recreational Opportunities**		
POLICY 1:	**BCWD supports access to natural areas for a diversity of outdoor recreation activities throughout the watershed for all its residents and visitors.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Enhance passive recreation opportunities through improvements to water resources.	**1**	Implement best management practices, shoreline improvements, and other management recommendations found in lake management plans. **SEE IMPLEMENTATION ACTIVITIES IN THE LAKE, POND, AND WETLAND MANAGEMENT PLAN (TABLE 82).**
B	Develop and leverage partnerships which increase awareness and access to natural resources recreation in the watershed.	**1**	*Addressed through administration of the East Metro Water Resource Education Program (EMWREP).*
		2	Develop a mapped inventory of current and desired recreation activities and locations with watershed partners.
SUB-ISSUE 2:	**Responsible Use**		
POLICY 1:	**BCWD is committed to playing a strong leadership role in creating a culture that encourages environmental stewardship.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Improve public knowledge and appreciation for the watershed's water resources through an increase in passive and active voluntary stewardship activities.	**1**	*Addressed through administration of the East Metro Water Resource Education Program (EMWREP).*
		2	Utilize the cost-share program to assist residents in best management practice installation.
B	Protect areas of investment from recreation-related degradation.	**1**	Monitor public access and use of Brown's Creek and evaluate the need to provide formal dedicated access points and the need to mitigate new impacts (e.g., erosion from foot traffic). *Cost reflected in Erosion Prevention and Sediment Control stream walkthrough.*
		2	Meet every three years with municipalities to review recreation-related issues to understand impacts and develop responses to emerging issues. *Costs identified in Stream Management.*
		3	Prioritize projects/watershed resources which add the co-benefit of improving resources in areas of the watershed not previously served by improvements.

Table 60. Projected Expenditures (in 1,000's) for Recreation Activities

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr Total
Develop a mapped inventory of current and desired recreation activities and locations with watershed partners.			15								15
Total for Recreation			**15**								**15**

Table 61. Recreation Implementation Activities covered by Administration and/or Project Development

Prioritize projects/watershed resources which add the co-benefit of improving resources in areas of the watershed not previously served by improvements.

Table 62 Recreation Implementation Activities covered by Capital Improvement Program

Implement best management practices, shoreline improvements, and other management recommendations found in lake management plans.
Utilize the cost-share program to assist residents in best management practice installation.

Community members using the ADA path and fishing platform constructed in 2025 near Neal Avenue and the Brown's Creek State Trail.

4.12 Education, Outreach, and Stewardship

4.12.1 General Issue Statement

Successful efforts to achieve BCWD's goals will require the involvement of residents, businesses, and municipalities. These groups will be most interested in active participation in district projects, or in water and natural resource protection in general, if they understand and relate to the issues and the benefits of water resource management. Engagement and outreach resonates with individuals and communities that experience the impacts of environmental degradation and subsequent conservation directly. Finding creative and relevant connections for audiences indirectly impacted and "upstream" of impacts serves an important role in positioning watershed stewardship as a shared responsibility. BCWD continues its efforts to broaden relationships to work with communities throughout the watershed, so they understand the district's responsibilities and roles in their communities. In particular, BCWD continues to think about who is being served by its work and the co-benefits this work can generate.

4.12.2 Relevance to the District

Since BCWD's inception, public involvement and public information efforts have played a strong role in directing project implementation. BCWD has a history of community participation in watershed management planning and implementation. Renewed engagement with watershed partners continues to develop relationships with existing organizations and connect BCWD to new audiences through education, stewardship, and volunteerism.

4.12.3 Sub-Issue Areas

4.12.3.1 Municipality and Developer/Construction Contractor Education and Outreach

Municipalities, as the land-use authority, have great potential to impact and improve water resources. They also own and operate roads, stormwater management facilities, and other stormwater infrastructure in the watershed. Additionally, municipalities are often the first point of contact for residents, businesses, and developers interested in local water resource management. Developers and contractors, as the individuals conducting the change in land-use, can directly impact and improve water resources through, among others, development planning and construction techniques. Educating municipal officials can lead to better planning, zoning, and ordinances, as well as changes to operations and maintenance policies and programs. Training municipal staff allows them to more effectively install and maintain stormwater systems and best management practices, reduce impacts on water resources from other operations and maintenance activities (e.g., road and park maintenance), and more effectively interface with the development community.

4.12.3.2 Business Community Education and Outreach

Historically, BCWD has had a weaker relationship with the local business community, including maintenance and operations (e.g., private contractors doing maintenance). These watershed partners play an important role in maintenance practices tied to their properties and operations. Greater collaboration with the business community can create opportunities to involve these watershed partners in initiatives targeting BCWD priorities, such as chloride management and water capture and reuse, by establishing clearer connections between the business community's operational practices and watershed impacts. Ensuring that proposed operational opportunities emphasize cost impacts will be key to making these alternatives resonate with the business community.

4.12.3.3 Homeowners' Association and Property Manager Education and Outreach

Growing communities across the watershed have led to the establishment of more homeowners' associations (HOAs). These associations are responsible for the management and maintenance of the stormwater management practices of their development; however, these responsibilities are susceptible to neglect or improper maintenance. Ensuring long-term maintenance of stormwater best management practices through enforcement has been challenging to achieve compliance. The presence of many HOAs makes identifying a point of contact, combined with management turnover, challenging to maintain and develop deeper relationships with HOAs. Opportunities exist to reciprocate information sharing to better understand interest in natural resource management, share strategies to conduct more efficient management of resources in their care, and develop a network of organizations capable of learning and supporting each other.

4.12.3.4 Public-Focused Education, Outreach, and Project Assistance

The public at large is the largest group of constituents of BCWD comprising of people who live, work, and play within the watershed. They make everyday decisions about their relationship to the landscape that impact the quality of resources. They can protect and enhance water resources through stewardship in their communities and everyday management decisions. The public also acts to influence the policies of BCWD, state agencies, and municipalities. BCWD can serve as a valuable resource for its residents by ensuring its role continues building relationships through shared priorities. Connections to the broader public should be pursued through community organizations and non-profit organizations who have existing reach into the community.

4.12.3.5 Youth Education and Outreach

BCWD improves the water resources of the watershed so they can be managed sustainably for the benefit of future generations. As future stewards of this landscape, supporting the involvement of young people in efforts to care for these resources plays an important role in nurturing the next generation of advocates, volunteers, and stewards.

4.12.3.6 BCWD Board of Managers

Ensuring the board is aware of new issues, concerns, opportunities, and ways of thinking about watershed resources is vital to their role as decision-makers for the district.

4.12.4 Policies, Goals, and Implementation Activities

The policies, goals, and implementation activities related to these sub-issue areas are summarized in the following tables.

Table 63. Education, Outreach, and Stewardship Policies, Goals, and Implementation Activities

SUB-ISSUE 1:	**Municipality and Developer/Contractor Education and Outreach**		
POLICY 1:	**BCWD is committed to providing education and outreach services to municipalities in the watershed to promote good stewardship of water and natural resources.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Increase municipal official and staff capacity for and use of development techniques and regulatory strategies that protect natural resources and benefit water quality.	**1**	Coordinate BCWD education and outreach efforts with those of municipalities and other local watershed organizations by continuing to support the East Metro Water Resource Education Program (EMWREP).

		2	Encourage attendance at training sessions regarding ordinances, development planning strategies, and development techniques that protect natural resources and benefit water quality by providing stipends so that two people from each district community can attend once every three years.
		3	Promote the Minnesota Pollution Control Agency's Smart Salt training for winter maintenance professionals to promote chloride reduction activities.
B	Increase municipal official and staff capacity for regular maintenance of stormwater management and infiltration practices and increase the implementation of maintenance practices. 	**1**	Encourage attendance at training sessions regarding stormwater management facility maintenance schedules and procedures and the relation to water quality improvement (e.g., best practices to reduce impacts to water resources from parks and road maintenance activities - road salt application, fertilizer use, irrigation practices) by providing stipends so that two people from each district community can attend once every three years.
		2	Work with municipalities to develop operation and maintenance plans for stormwater management facilities.
C	Increase municipal official and municipal staff awareness of the BCWD and the assistance it can provide to municipalities.	**1**	Develop demonstration projects to highlight best management practices and stewardship.
		2	Recognize municipal programs or projects and/or developer and contractor programs or projects that exemplify water and natural resource stewardship (e.g., newsletter, social media).
		3	Educate municipalities about the district's rules.
		4	Create a packet of information that summarizes the impacts related to climate change for each community including impacts to surface waters, groundwater, and natural systems.
		5	Work with member communities to make sure contracting includes requirements for smart salting certification.
		6	Help communities adopt dust suppressant practices that minimize water-quality impacts, such as: • Application timing (avoid rain events to prevent immediate runoff). • Proper dosage (prevent over-application). • Identifying road sections near wetlands, streams, or shallow groundwater where alternatives or setbacks should be used. • Promoting improved gravel road structures that reduce dust at the source (e.g., fines content, proper crown, drainage improvements).
POLICY 2:	**BCWD promotes good stewardship of water and natural resources through education and outreach opportunities for developers and managers conducting work within the watershed to promote good stewardship of water and natural resources.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Increase developers' and contractors' awareness and use of development techniques that protect natural resources and benefit water quality.	**1**	Conduct workshops targeted to developers and realtors about marketing lakeshore properties based on BCWD analysis of lake functions and values.

		2	Educate developers regarding the value of biodiverse and resilient landscapes which can achieve multiple co-benefits (e.g., habitat, stormwater management, aesthetics, improved water quality).
B	Increase developers' and contractors' awareness of the importance of construction, installation, and maintenance techniques on the long-term functionality of stormwater management practices, and increase the implementation of these techniques.	**1**	Promote training sessions on stormwater management practice construction and installation techniques and the relationship to the continued functionality of the practice.
		2	Educate the development community and watershed communities about the risks and consequences of groundwater overuse and degradation and the importance of maintaining recharge.
		3	*Addressed through the implementation of the BCWD permitting process through meetings, on-site inspection engagement and timely inspection reports.*
C	Increase developer and contractor awareness of BCWD and the assistance it can provide.	**1**	Educate developers and the local design community about the district's rules.
		2	Increase outreach opportunities with the development community by hosting a bi-annual developers meeting/focus group.
		3	Present on the district rules at the American Public Works Association (APWA) Conference and/or City Engineers Association Conference.
SUB-ISSUE 2:	**Business Community Education and Outreach**		
POLICY 1:	**BCWD is committed to working with businesses to make informed decisions about their responsibilities related to operations and maintenance that can reduce impacts to water resources.**		
GOAL		**IMPLEMENTATION ACTIVITIES**	
A	Increase the business community's awareness of the importance of construction, installation, and maintenance techniques on the long-term functionality of stormwater management practices, and increase the implementation of these techniques.	**1**	Educate lawn care companies, golf courses, kennel operations, and county and local community public works departments on how to use best management practices to minimize the effects on groundwater caused by the use and storage of fertilizers, pesticides, dust suppressants, and road salt, while properly maintaining their properties.
		2	Provide targeted educational messages to local businesses, local organizations, and areas experiencing specific challenges (e.g., chloride impairment in Long Lake).
SUB-ISSUE 3:	**Homeowners' Association (HOA) and Property Manager Education and Outreach**		
POLICY 1:	**BCWD is committed to helping HOAs and property managers make informed decisions about their responsibilities to promote good stewardship of water and natural resources.**		
GOAL		**IMPLEMENTATION ACTIVITIES**	
A	Increase homeowners' associations' and property managers' awareness of the importance of construction, installation, and maintenance techniques on the long-term functionality of stormwater management practices, and increase the implementation of these techniques.	**1**	Provide HOAs with stormwater management maintenance resources when a development is completed, and follow-up at five-year intervals to better inform maintenance approaches.
		2	Educate HOAs regarding the value of biodiverse and resilient landscapes which can achieve multiple co-benefits (e.g., habitat, stormwater management, aesthetics, improved water quality).

		3	Improve "hand-off" from developers to HOAs by providing HOA guidance on the website, including more information on obligations, processes, and resources.
SUB-ISSUE 4:	**Public-Focused Education, Outreach, and Project Assistance**		
POLICY 1:	**BCWD will provide clear and accessible information highlighting existing efforts to share the story of watershed accomplishments that compel public involvement in watershed management planning and implementation contributing to good stewardship of water and natural resources.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Increase public awareness of surface water, groundwater, and natural resource protection, restoration, and stewardship. 	**1**	Annually promote BCWD's events and accomplishments through multiple communication channels (e.g., mailings, newsletters, social media) to reach audiences, and share information about topics such as groundwater recharge, wetland and lake aesthetics and natural condition, home and yard care practices, and shoreline and wetland stewardship.
		2	Engage non-profits and community organizations to partner in events and conservation efforts (e.g., buckthorn removal).
		3	Provide education to residents on the importance of groundwater issues including: the interaction between groundwater and surface water, risks associated with overuse and degradation, the value of and need to protect groundwater recharge areas and wetlands, and implementation of best management practices and low impact development and redevelopment strategies to protect groundwater resources.
		4	Host information sessions on education topics of interest (e.g., estate planning).
		5	Maintain an updated list of partners and event participants – update the list annually to reflect new information on partners and participants.
		6	Establish one permanent information kiosk with permanent and rotating information that is geographically relevant to resources near the kiosk (e.g., chloride impairment in Long Lake).
		7	Pilot an artist in residency program to creatively engage the public in conversations about their watershed.
		8	Educate residents regarding the value of biodiverse and resilient landscapes which can achieve multiple co-benefits (e.g., habitat, stormwater management, aesthetics, improved water quality).
		9	Provide homeowner education on the proper use and maintenance of septic systems to preserve their function and reduce water quality impacts.
		10	Host an annual event celebrating a watershed resource (e.g., BCWD on the Lake could provide an opportunity for small watercraft to explore a lake and learn about improvements and challenges facing the resource).

		11	Conduct best management practice installation and implementation training workshops to provide residents with the knowledge to install and implement best management practices on their properties. Programs could include workshops on topics such as rain barrels, rain gardens, shoreline restoration, fertilizer use, and native vegetation buffer establishment and maintenance.
B	Increase volunteer education and participation to aid in the delivery of education and community projects. 	**1**	Provide educational support to volunteers (e.g., communication, training, branded materials) so they can serve as ambassador stewards of the watershed's mission.
		2	Engage volunteers to assist in implementation of education and outreach work.
		3	Collaborate with the CAC to assist in the implementation of education and outreach work.
C	Promote public-led efforts in water and natural resource restoration, protection, and stewardship. 	**1**	Recognize resident efforts in water resource and natural resource protection every two years.
		2	Conduct a survey of best management practice implementation and knowledge in partnership with EMWREP every five years.
		3	Utilize the cost-share program to assist residents in best management practice installation.
		4	Develop demonstration projects to highlight stormwater management practices, natural resource protection methods, and resource stewardship.
D	Increase public awareness of BCWD, its role, and the functions and assistance it provides.	**1**	Update the district website and social media pages to include easy-to-use information on resource protection and stewardship.
		2	Educate residents about the district's permitting program.
		3	Host an annual community watershed event and smaller events to highlight local projects and to engage residents in scientific and recreational activities.
E	Stay informed on the topic of pollutants of emerging concern in lakes, streams, and groundwater by monitoring future studies completed by the Minnesota Pollution Control Agency and sharing information with the public.	**1**	Educate the public about the effects of pollutants of concern on surface and groundwater resources, pathways for these pollutants to enter the water system, and methods to prevent contamination of the water system. Specific pollutants being targeted include: • Pharmaceuticals • Cosmetic products • PFAS • Microplastics • Chlorides • Pet waste • Household hazardous waste

SUB-ISSUE 5:	Youth Education and Outreach		
POLICY 1:	**BCWD will support the work of its partners in furthering opportunities for youth to learn about watershed resources and get involved in stewardship.**		
GOAL		**IMPLEMENTATION ACTIVITIES**	
A	Support watershed partners specializing in youth education that encourage stewardship and increase awareness of the interconnected nature of land, surface water, and groundwater. 	**1**	Partner with Belwin Conservancy to provide educational content for grade school lessons in the classroom in Stillwater schools.
		2	Partner with Trout Unlimited to provide education content for grade school Trout in the Classroom sessions.
		3	Partner with Stillwater Area High School to conduct volunteer stream monitoring. *Cost reflected in Stream Management.*
		4	Participate in school community education events (e.g., DaVinci Fest).
		5	Promote the annual community event at public and private schools.
SUB-ISSUE 6:	**BCWD Board of Manager Education**		
POLICY 1:	**The BCWD will provide its Board of Managers with opportunities to further their understanding of emerging topics to help inform decision-making.**		
GOAL		**IMPLEMENTATION ACTIVITIES**	
A	Provide continuous learning opportunities for the board to further their understanding of current and emerging watershed issues.	**1**	Develop a board training plan annually, identifying training opportunities and ongoing learning.
		2	Collaborate with Washington County on new board member orientation.
		3	Support attendance at external trainings (e.g., Water Consortium, Minnesota Association of Watershed Districts, EMWREP, Lower St. Croix Partnership).

Table 64. Projected Expenditures (in 1,000's) for Education, Outreach, and Stewardship Activities

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr Total
Administrative contribution to Education and Outreach	65	65	65	65	65	65	65	65	65	65	650
Coordinate BCWD education and outreach efforts with those of municipalities and other local watershed organizations by continuing to support the East Metro Water Resource Education Program (EMWREP).	32	32	35	35	35	38	38	38	41	41	365

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr Total
Encourage attendance at training sessions regarding ordinances, development planning strategies, and development techniques that protect natural resources and benefit water quality by providing stipends so that two people from each district community can attend once every three years.			2			2			2		6
Encourage attendance at training sessions regarding stormwater management facility maintenance schedules and procedures and the relation to water quality improvement (e.g., best practices to reduce impacts to water resources from parks and road maintenance activities - road salt application, fertilizer use, irrigation practices) by providing stipends so that two people from each district community can attend once every three years.		2			2			2			6
Increase outreach opportunities with the development community by hosting a bi-annual developers' meeting/focus group.		2		2		2		2		2	10
Annually promote BCWD's events and accomplishments through multiple communication channels (e.g., mailings, newsletters, social media) to reach audiences, and share information about topics such as groundwater recharge, wetland and lake aesthetics and natural condition, home and yard care practices, and shoreline and wetland stewardship.	10	10	10	10	10	10	10	10	10	10	100
Host information sessions on education topics of interest (e.g., estate planning).	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	15
Establish one permanent information kiosk with permanent and rotating information that is geographically relevant to resources near the kiosk (e.g., chloride impairment in Long Lake).					40	0.5	0.5	0.5	0.5	0.5	42.5

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr Total
Pilot an artist in residency program to creatively engage the public in conversations about their watershed.	15	15	15	15	15	15	15	15	15	15	150
Host an annual event celebrating a watershed resource. (e.g., BCWD on the Lake could provide an opportunity for small watercraft to explore a lake and learn about improvements and challenges facing the resource).	4	4	4	4	4	4	4	4	4	4	40
Recognize resident efforts in water resource and natural resource protection every two years.	0.5		0.5		0.5		0.5		0.5		2.5
Host an annual community watershed event and smaller events to highlight local projects and to engage residents in scientific and recreational activities.	3	3	3	3	3	3	3	3	3	3	30
Partner with Belwin Conservancy to provide educational content for grade school lessons in the classroom in Stillwater schools.	5	5	5	5	5	5	5	5	5	5	50
Partner with Trout Unlimited to provide education content for grade school Trout in the Classroom sessions.	1	1	1	1	1	1	1	1	1	1	10
Participate in school community education events (e.g., DaVinci Fest).	1	1	1	1	1	1	1	1	1	1	10
Develop a board training plan annually, identifying training opportunities and ongoing learning.	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5
Support attendance at external trainings (e.g., Water Consortium, Minnesota Watersheds, EMWREP, Lower St. Croix Partnership).	1	1	1	1	1	1	1	1	1	1	10
Total for Education	**139.5**	**143**	**144.5**	**144**	**184.5**	**149.5**	**146**	**149.5**	**151**	**150.5**	**1,502**

Table 65. Education, Outreach, and Stewardship Implementation Activities covered by Administration and/or Project Development

Maintain an updated list of partners and event participants – update the list annually to reflect new information on partners and participants.
Provide educational support to volunteers (e.g., communication, training, branded materials) so they can serve as ambassador stewards of the watershed's mission.
Engage volunteers to assist in implementation of education and outreach work.
Collaborate with the CAC to assist in the implementation of education and outreach work.
Update the district website and social media pages to include easy-to-use information on resource protection and stewardship.
Promote the annual community event at public and private schools.
Collaborate with Washington County on new board member orientation.
Create a packet of information that summarizes the impacts related to climate change for each community including impacts to surface waters, groundwater, and natural systems.
Work with member communities to make sure contracting includes requirements for smart salting certification.
Help communities adopt dust suppressant practices that minimize water-quality impacts, such as: • Application timing (avoid rain events to prevent immediate runoff). • Proper dosage (prevent over-application). • Identifying road sections near wetlands, streams, or shallow groundwater where alternatives or setbacks should be used. • Promoting improved gravel road structures that reduce dust at the source (e.g., fines content, proper crown, drainage improvements).
Present on the district rules at the American Public Works Association conference and/or City Engineers Association conference.
Engage non-profits and community organizations to partner in events and conservation efforts (e.g. Buckthorn removal).
Develop demonstration projects to highlight best management practices and stewardship.

Table 66 Education, Outreach, and Stewardship Implementation Activities covered by Capital Improvement Program

Utilize the cost-share program to assist residents in best management practice installation.

Table 67. Education, Outreach, and Stewardship Implementation Activities covered by Regulatory Program

Work with municipalities to develop operation and maintenance plans for stormwater management facilities.
Recognize municipal programs or projects and/or developer and contractor programs or projects that exemplify water and natural resource stewardship (e.g., newsletter, social media).
Educate municipalities about the district's rules.
Educate developers and the local design community about the district's rules.
Educate residents about the district's permitting program.
Improve "hand-off" from developers and HOAs by providing HOA guidance on the website, including more information on obligations, processes, and resources.

Table 68 Education, Outreach, and Stewardship Implementation Activities covered by East Metro Water Resource Education Program

Promote the Minnesota Pollution Control Agency's Smart Salt training for winter maintenance professionals to promote chloride reduction activities.
Conduct workshops targeted to developers and realtors about marketing lakeshore properties based on BCWD analysis of lake functions and values.
Educate developers regarding the value of biodiverse and resilient landscapes which can achieve multiple co-benefits (e.g., habitat, stormwater management, aesthetics, improved water quality).
Promote training sessions on stormwater management practice construction and installation techniques and the relationship to the continued functionality of the practice.
Educate the development community and watershed communities about the risks and consequences of groundwater overuse and degradation, and the importance of maintaining recharge.
Educate lawn care companies, golf courses, kennel operations, and county and community public works departments on how to use best management practices to minimize the effects on groundwater caused by the use and storage of fertilizers, pesticides, dust suppressant, and road salt, while properly maintaining their properties.
Provide targeted educational messages to local businesses, local organizations, and areas experiencing specific challenges (e.g., chloride impairment in Long Lake).
Provide HOAs with stormwater management maintenance resources when a development is completed and follow-up at five-year intervals to better inform maintenance approaches.
Educate HOAs regarding the value of biodiverse and resilient landscapes which can achieve multiple co-benefits (e.g., habitat, stormwater management, aesthetics, improved water quality).
Provide education to residents on the importance of groundwater issues including: the interaction between groundwater and surface water, risks associated with overuse and degradation, the value of and need to protect groundwater recharge areas and wetlands, and implementation of BMPs and LID and redevelopment strategies to protect groundwater resources.
Educate residents regarding the value of biodiverse and resilient landscapes which can achieve multiple co-benefits (e.g., habitat, stormwater management, aesthetics, improved water quality).
Provide homeowner education on the proper use and maintenance of septic systems to preserve their function and reduce water quality impacts.
Conduct best management practice installation and implementation training workshops to provide residents with the knowledge to install and implement best management practices on their properties. Programs could include workshops on topics such as rain barrels, raingardens, shoreline restoration, fertilizer use, and native vegetation buffer establishment and maintenance.
Conduct a survey of best management practice implementation and knowledge in partnership with EMWREP every five years.
Educate the public about the effects of pollutants of concern on surface and groundwater resources, pathways for these pollutants to enter the water system, and methods to prevent contamination of the water system. Specific pollutants being targeted include: • Pharmaceuticals • Cosmetic products • PFAS • Microplastics • Chlorides • Pet waste • Household hazardous waste

4.13 Land Conservation

4.13.1 General Issue Statement

Changes in land-use threaten to degrade the quality of water resources and limit wildlife habitat. Land-use practices can reduce the area of land covered with native vegetation, increase erosion and stormwater runoff, and break wildlife habitat into small, disconnected areas unable to support high-quality, diverse populations. The development of a land conservation program allows entities to set aside critical parts of the landscape for the protection and restoration of downstream waterbodies.

4.13.2 Relevance to the District

Land-use changes in the watershed are often made adjacent to and encroaching on water resources and natural areas. Proper management of stormwater runoff and erosion will limit the water quality and quantity impacts to surface and groundwater resources but will not fully maintain the ecological quality or function and value of the resources if adjacent lands are managed in a way that does not maintain native vegetative communities and wildlife habitat. In 2017, BCWD acquired a parcel of land so that it may be protected by a conservation easement. This acquisition adds a new role for the BCWD Board of Managers as they consider the management needs and potential uses for this property.

4.13.3 Sub-Issue Areas

4.13.3.1 Preservation of Natural Areas, Connections Between Natural Areas, and Groundwater Recharge Zones

While the impacts of development can be managed, key natural resources can be lost in the process. Conservation of groundwater recharge zones, surface water resources, and natural resources can be effectively accomplished through preservation of key natural areas. Land conservation can preserve and restore resource quality, provide stormwater benefits, protect groundwater recharge, ensure the sustainability of wildlife habitat connections, and create spaces that allow people access to natural spaces they do not have access to otherwise.

4.13.4 Policies, Goals, and Implementation Activities

The policies, goals, and implementation activities related to these sub-issue areas are summarized in the following tables.

Table 69. Land Conservation Policies, Goals, and Implementation Activities

SUB-ISSUE 1:		**Protection of natural areas, connections between natural areas, and groundwater recharge zones**	
POLICY 1:		**BCWD will work with communities, agencies, homeowners' associations, developers, residents, and non-profits, as appropriate, to protect land throughout the watershed to preserve and restore the resource quality, stormwater benefits, groundwater recharge, wildlife habitat connection, and access to natural spaces provided by key upland and lowland areas.**	
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Identify and pursue opportunities to preserve and restore land within the watershed that protects and restores high-quality native plant communities and/or connect critical habitat areas. 	**1**	Review and revise land protection corridors and priorities to reflect current resource protection needs (e.g., recharge areas, unique resources, headwaters of Brown's Creek, and land adjacent to the watershed's resources).
		2	Work with member communities during the comprehensive planning process to evaluate protection strategies near and within priority land conservation areas.

		3	Purchase property or easements as land conservation opportunities arise within priority areas.
		4	Partner with EMWREP on workshops. (e.g., estate planning workshops connecting interested residents to land trusts). *Cost identified under Education and Outreach.*
		5	Lead a tour of high-quality wetland, pond, and lake ecological resources with the Department of Natural Resources, Washington County, Washington Conservation District, and other stakeholders to support these features in regional planning and conservation activities.
B	Preserve and restore district-owned easements to achieve a condition that maintains ecological health and native biodiversity.	**1**	Restore the Brown's Creek Conservation Area by implementing the activities identified in the management plan.
		2	Develop and implement management plans for new district-owned easements.
		3	Work with adjacent landowners to create additional buffer to the district easements.
C	Utilize district-owned easements for public engagement/outreach. 	**1**	Share and educate the public about the restoration activities and unique species.

Table 70. Projected Expenditures (in 1,000's) for Land Conservation

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr Total
Review and revise land protection corridors and priorities to reflect current resource protection needs (e.g., recharge areas, unique resources, headwaters of Brown's Creek, and land adjacent to the watershed's resources).						20					20
Work with member communities during the comprehensive planning process to evaluate protection strategies near and within priority land conservation areas.	2.5	2.5									5
Purchase property or easements as land conservation opportunities arise within priority areas.	50	50	50	50	50	50	50	50	50	50	500
Restore the Brown's Creek Conservation Area by implementing the activities identified in the management plan.	25	25	25	25	25	25	25	25	25	25	250
Develop and implement management plans for new district-owned easements.										20	20
Total for Land Conservation	**77.5**	**77.5**	**75**	**75**	**75**	**95**	**75**	**75**	**75**	**95**	**795**

Table 71. Land Conservation Implementation Activities covered by Administration and/or Project Development

Work with adjacent landowners to create additional buffer to the district easements.

Table 72. Land Conservation Implementation Activities covered by Education and Outreach

Partner with EMWREP on workshops. (e.g., estate planning workshops connecting interested residents to land trusts)
Lead a tour of high-quality wetland, pond, and lake ecological resources with the Minnesota Department of Natural Resources, Washington County, Washington Conservation District, and other stakeholders to promote support of these features in regional planning and conservation activities.
Share and educate the public about the restoration activities and unique species.

Brown's Creek flowing through the Brown's Creek Conservation Area off of 110th St in 2026.

4.14 Funding

4.14.1 General Issue Statement

Funding is necessary to operate the programs and to complete the projects that protect and improve the resources of Brown's Creek Watershed District.

4.14.2 Relevance to the District

Watershed districts are primarily funded through tax dollars. To keep the burden on the individual watershed taxpayer as low as possible, resource management goals need to be prioritized: it is not always possible to address a particular resource-restoration need within the timeframe of the plan. While BCWD intends to look for additional sources of funding (e.g., county, state, federal, and private grant programs) to supplement its budget, it recognizes the financial limitations to protecting and/or restoring local and regional resources on a 10-year time scale. Additionally, BCWD recognizes the efforts of other entities with common environmental protection, stewardship, and education goals. Leveraging partnerships with these entities will result in more innovative and cost-effective management.

4.14.3 Sub-Issue Areas

4.14.3.1 Funding

Brown's Creek Watershed District strives to maintain a low tax rate while providing adequate protection and improvements to the resources of the watershed. To do this, unique funding solutions may be necessary.

4.14.3.2 Leveraging Partnerships

The district recognizes that there are untapped opportunities to leverage partnerships to help BCWD accomplish its mission.

4.14.4 Policies, Goals, and Implementation Activities

The policies, goals, and implementation activities related to these sub-issue areas are summarized in the following tables.

Table 73. Funding Policies, Goals, and Implementation Activities

SUB-ISSUE 1:	**Funding**		
POLICY 1:	**BCWD strives to maintain a tax levy that is adequate to conduct the activities of the district but minimizes the impact on taxpayers by supplementing the levy through other funding sources.**		
GOAL		**IMPLEMENTATION ACTIVITIES**	
A	Actively seek and acquire alternate sources of funding as possible for BCWD studies, projects, and capital improvements.	**1**	Actively seek and acquire, as possible, alternate sources of funding for district studies, projects, and capital improvements through grants and other outside monies.
		2	Evaluate progress on goals and implementation activities, including the capital improvement program, to determine if amendments to the implementation plan are necessary.
		3	Cost-share with municipalities and other agencies or use subwatershed or special assessment taxation as applicable to certain studies, projects, and capital improvements.
		4	Explore options to get property owners to provide additional stormwater treatment on site through retrofits outside of the site redevelopment process.

SUB-ISSUE 2:	Leveraging Partnerships		
POLICY 1:	**BCWD seeks to leverage partnerships with entities that share common goals to achieve more innovative and cost-effective management.**		
GOALS		**IMPLEMENTATION ACTIVITIES**	
A	Develop partnerships to leverage activities currently being performed by other entities in the watershed	**1**	*Addressed through Education and Outreach.*
B	Continue to coordinate with local and regional entities to achieve water quality protection and restoration goals.	**1**	Hold meetings every two years with member communities to discuss progress toward local surface water management plan implementation, TMDL Implementation Plan goals, other mutual goals and opportunities for partnerships.

Table 74. Projected Expenditures (in 1,000's) for Funding Activities

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr Total
Actively seek and acquire, as possible, alternate sources of funding for district studies, projects, and capital improvements through grants and other outside monies.	5	5	5	5	5	5	5	5	5	5	50
Evaluate progress on goals and implementation activities, including the capital improvement program, to determine if amendments to implementation plan are necessary.			2.5		10			2.5			15
Total for Funding	**5**	**5**	**7.5**	**5**	**15**	**5**	**5**	**7.5**	**5**	**5**	**65**

Table 75. Funding Implementation Activities covered by Administration and/or Project Development

Cost-share with municipalities and other agencies or use subwatershed or special assessment taxation as applicable to fund certain studies, projects, and capital improvements.
Explore options to get property owners to provide additional stormwater treatment on site through retrofits outside of the site redevelopment process.
Hold meetings with member communities to discuss progress toward local surface water management plan implementation, TMDL Implementation Plan goals, other mutual goals, and opportunities for partnerships.

4.15 Pollutants of Emerging Concern

4.15.1 General Issue Statement

Pollutants of emerging concern refer to a variety of chemical and biological substances that have been detected in the environment but are not commonly monitored or regulated, and their potential effects on human health and ecosystems are not yet fully understood. These pollutants are often introduced into the environment through human activities and can accumulate in the landscape. Pollutants of emerging concern affect the quality of our water resources, which poses challenges for watershed management. Major pollutants of emerging concern in BCWD include per- and polyfluoroalkyl substances (PFAS), microplastics, 6PPD-Quinone, and polycyclic aromatic hydrocarbons.

4.15.2 Relevance to the District

Per- and polyfluoroalkyl substances (PFAS), previously called perfluorochemicals or PFCs, are a large family of chemicals that are widely present in the environment. Over the last 20 years, PFAS have been considered important "contaminants of emerging concern," and actions have been taken around the world to study them. Minnesota was one of the first states to identify PFAS pollution when these "forever chemicals" reached the groundwater aquifers serving east metro communities and has been a leader in studying their health effects and in responding to contamination. Lake Elmo, Stillwater, and Oak Park Heights have drinking water wells with varying levels of PFAS. It is important to note that PFAS is present throughout the environment and in thousands of products including food packaging, stain resistant fabrics, water resistant clothing, cleaning products, non-stick cookware, personal care products and cosmetics, paints, varnishes and sealants, fire-fighting foam, and industrial processes.

Microplastics constitute a wide variety of small plastic particles that are intentionally or unintentionally produced and released into the ecosystem. They are primarily transported through the atmosphere, runoff, wastewater treatment, and land application. Ultimately, these particles settle in sediments and soils or are ingested by wildlife. Microplastics pose risks related to toxicity in both animals and humans.

6PPD-Quinone is a substance released through the environment through car tire wear releasing particles that are washed into water resources by runoff. Research on impacts and mitigation practices is in its infancy, however studies have shown this substance is lethal to salmon, making its impacts on other fishery populations a concern.

Polycyclic aromatic hydrocarbons (PAHs) are substances originating from diesel fuel, motor/crude oil, lubricants, and sealants that can become deposited in waterbodies, especially stormwater ponds, through the flow of water. This deposition impacts operations and maintenance of stormwater ponds as dredged material must be tested to conform with disposal requirements, adding cost to this process.

4.15.3 Sub-Issue Areas

4.15.3.1 Improving Understanding of Emerging Pollutants

Research on these pollutants is in its infancy with federal and state agencies, and researchers continually advancing the state of science on the origins, pathways, and impacts of these pollutants. Preparing a response to these pollutants and their impacts will require BCWD to be informed to the best of its ability to take actions that are appropriate for the district's scale and level of responsibility.

4.15.3.2 Collaborating with Partners

The complexity and scale of pollutants of emerging concern extends far beyond the boundaries of BCWD's jurisdiction and therefore puts federal agencies such as the Environmental Protection Agency, and state agencies such as the Minnesota Pollution Control Agency and the Minnesota Department

of Health in more optimal position to spearhead addressing these pollutants through comprehensive strategies and regulations. Collaboration with these partners through information sharing, involvement in regulatory and legislative updates, and where appropriate implementation of local improvement projects.

4.15.4 Policies, Goals, and Implementation Activities

The policies, goals, and implementation activities related to these sub-issue areas are summarized in the following tables.

Table 76. Pollutants of Emerging Concern Policies, Goals, and Implementation Activities

SUB-ISSUE 1:	**Improving Understanding of Pollutants of Emerging Concern**		
POLICY 1:	**BCWD will monitor the work being done by state agencies and support research on the effects of pollutants of emerging concern on human health and ecosystems.**		
GOAL		**IMPLEMENTATION ACTIVITIES**	
A	Stay informed about pollutants of emerging concern (PECs) to assess the district's role in monitoring, mitigating, and managing their impact on water quality and ecosystem health.	**1**	Provide a bi-annual update summary on the state of science on pollutants of emerging concern to the board (e.g., report on updates to Minnesota's PFAS Blueprint).
		2	Evaluate the district's role in monitoring, mitigating, and managing the impact of PECs every five years.
SUB-ISSUE 2:	**Collaboration with Partners**		
POLICY 1:	**BCWD will collaborate with state agencies.**		
GOAL		**IMPLEMENTATION ACTIVITIES**	
A	Contribute monitoring data to partners.	**1**	Incorporate PFAS sampling into stream and lake monitoring program. *Cost included in Baseline Monitoring Program.*
		2	Conduct a PFAS trend analysis after five years of data has been collected.

Table 77. Projected Expenditures (in 1,000's) for Pollutants of Emerging Concern

Implementation Activities	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Yr Total
Evaluate the district's role in monitoring, mitigating, and managing the impact of PECs every five years.					2.5					2.5	5
Conduct a PFAS trend analysis after five years of data has been collected.					2.5					2.5	5
Total for PECs					**5**					**5**	**10**

Table 78. Pollutants of Emerging Concern Implementation Activities covered by Administration and/or Project Development

Provide a bi-annual update summary on the state of science on pollutants of emerging concern to the board (e.g., report on updates to Minnesota's PFAS Blueprint).

Table 79. Pollutants of Emerging Concern Implementation Activities covered by Baseline Monitoring Program

Incorporate PFAS sampling into stream and lake monitoring program.

5 IMPLEMENTATION

This section describes the actions Brown's Creek Watershed District will take to implement the plan over the next ten years, including the programs, projects, and collaborations it will pursue to address its identified priorities and goals. This section is critical because it both charts BCWD's path for the coming decade and allows watershed cities and townships to confidently plan for water resource management, knowing BCWD's detailed plans for providing comprehensive and diligent protection and improvement of those resources. Since the cities, townships, and several agencies have jurisdiction over water resources within the watershed, their roles and responsibilities relevant to the management of water resources are briefly discussed in this section.

5.1 BCWD Roles and Responsibilities

BCWD serves many water resource management roles in fulfilling the purposes articulated in Minnesota Statutes chapters 103B and 103D. BCWD has assumed many specific responsibilities as detailed in this plan. Primary responsibilities of BCWD include:

- Establishing resource-protection and flood risk-mitigation standards and contributing to implementation of such standards in BCWD rules through its permitting program.
- Developing lake management plans and implementing programs and projects to fulfill goals established in such plans.
- Managing nutrient loads to lakes to achieve state water-quality standards.
- Contributing to the development and implementation of total maximum daily load studies and implementation plans.
- Performing studies to better understand resource protection needs and to inform the development of cost-effective solutions.
- Constructing capital improvement projects to protect and improve water quality and the ecological health of water resources and to provide flood storage.
- Supporting local units of government and watershed residents with planning and design related to resource protection needs and promoting resiliency of infrastructure to withstand changes in climate such as rainfall events of increasing intensity and volatility.
- Reporting and evaluation to inform local units of government, state agencies, and watershed residents of the district's activities and current health of the resources.
- Monitoring to collect baseline data about the quality of resources and to measure improvements resulting from management activities.
- Protecting and restoring the ecological health of upland areas in support of water quality goals through land conservation.
- Providing education about the impacts of non-point source pollution on local lakes, rivers, streams, wetlands, and groundwater resources to address homeowner contributions to watershed health.
- Collaborating with the other members of the Lower St. Croix Watershed Partnership in the implementation of the Lower St. Croix Comprehensive Watershed Management Plan.

While BCWD takes organizational responsibility for these initiatives, in almost every specific instance BCWD looks for opportunities to form partnerships with its cities, townships, and residents; county, state, and federal agencies; and other entities to achieve its goals.

5.2 Prioritization of Programs and Projects

As BCWD's Board of Managers evaluated the implementation activities identified during the plan development process, they applied the following criteria (listed by order of importance to them) to determine which activities should be eliminated, implemented first, or implemented later in the 10-year timeframe of the plan and which should be implemented if additional funding sources become available:

- **Maximizes Opportunities for Partnership:** Can the activity be done in conjunction with other projects and/or initiatives (e.g., municipal capital improvement projects, projects or programs of adjacent watershed management organizations or nonprofit organizations)?
- **Suitable Entity:** Is BCWD the most appropriate entity to implement the activity in question or is another entity more appropriate (e.g., Washington County might be better situated for a project addressing a regional issue)?
- **Maximizes Co-Benefits:** How does the project or program generate additional benefits that help the district achieve other goals or actions?
- **Increases Climate Change Resilience:** How does the action better inform decision-making or increase the resilience of resources projected to be impacted by future climate conditions?
- **Funding:** What are BCWD's goals for its total annual budget over the 10-year timeframe of the plan and levy amounts? These decisions establish the total amount of money available for the district's various programs and projects.
- **Measurable Water Quality Improvement (Restoration) Impact:** Has the activity been identified in an existing water resource plan? Does it significantly reduce nutrients to the water resource?
- **Flood Reduction/Mitigation:** How does the activity contribute to flood reduction or mitigation?
- **Addresses a Gap in the Knowledge Base:** Does the activity enhance the district's understanding of the resource protection and/or restoration needs, thereby allowing BCWD to make more effective management decisions?
- **Allocation of Resources:** Related to funding, the BCWD Board of Managers prioritized the distribution of the annual budget to its various programs, dedicating approximately 35% of the budget to "shovel-ready" water quality improvement projects.
- **Protection Activities Related to Conservation:** Is the activity best accomplished through acquisition of easements, and are there other entities that could assist BCWD in acquiring them for the restoration and/or protection of resources?
- **Recommendation from the Civic Engagement Process:** Was the activity recommended by member communities or residents of the watershed involved in the plan-development process?
- **Equity:** How does the activity serve a community or communities that have been excluded or harmed by past decision-making? Does it help address injustices?

As BCWD moves forward with the implementation of the 2027-2036 Watershed Management Plan, the board will have to make decisions about which projects to implement from the Capital Improvement Program, TMDL Implementation Plan, lake management plans, Brown's Creek thermal study, BCWD sediment source assessment, and/or assessments which have not yet been conducted. In addition to using the criteria identified above, BCWD will consider the following:

- Costs and benefits of conducting a project after a completed feasibility analysis
- Landowner willingness
- Alternative sources of funding available (e.g., grants, Washington County Land Conservation Program, Minnesota Land Trust)
- Innovative approaches that could advance stormwater management
- Best management practices that provide stacked functions and/or multiple benefits

5.3 Implementation Plan

The implementation plan includes both structural (capital improvement) and programmatic elements. Including an activity in the implementation plan is a statement of intent by BCWD. Implementation rests on further board decisions to budget for and fund the activity, which will be made in keeping with the priorities described in section 5.2 *Prioritization of Programs and Projects* and in response to BCWD's regular analysis of the results of its work. In some cases, project implementation may require further legal procedure and/or the participation of other parties.

Similarly, as priorities evolve, new concerns emerge, or new approaches are developed over the period of ten years, the board may choose to undertake an activity not included in the implementation plan. The listing of activities in the implementation plan is not intended to exclude other activities consistent with the issues, goals, and policies identified in section 4. In such cases, undertaking an activity not in the implementation plan may require first amending the plan or other procedures.

Table 80 is BCWD's 2027-3036 Implementation Plan. It includes the activities identified as a high priority through the plan development process and reflects what BCWD plans to accomplish within the 10-year timeframe of the plan. Capital improvement projects specific to Brown's Creek and the lakes for which management plans have been developed are referenced in Table 80 but identified more specifically in Table 81 and Table 82.

Table 84 is BCWD's lower priority implementation plan. It includes activities that are considered lower priority relative to the implementation activities included in Table 80. These activities will be reviewed on an annual basis, reprioritized as needed, and completed as time and resources allow.

Artwork of the rose-breasted grosbeak created in 2025 as part of BCWD's "The Water Where We Live" exhibit in partnership with A House Unbuilt.

5.4 Programs and Projects

5.4.1 Capital Improvement Program

BCWD implements capital improvement projects to address issues such as water quality and quantity as identified in its watershed management plan. For projects led by BCWD, the first step is to perform studies to identify capital projects that are most likely to address the identified concern and achieve the relevant goals. The Implementation Plan (Table 80), Brown's Creek Management Plan (Table 81), and Lake, Pond, and Wetland Management Plans (Table 82) identify the studies and capital projects BCWD intends to implement to address the priority issues and goals identified in this plan.

When BCWD leads the implementation of a capital project, a detailed engineering feasibility study will be completed to ascertain the viability of the project. The study will identify the most cost-effective and efficient configuration of constructed best management practices and/or facilities to achieve the stated goal. The board of managers will then review the study findings and engineers' recommendations to determine whether to further develop the project for implementation. If so, the managers will direct the administrator to take the steps required by Minnesota Statutes section 103B.251 to complete the public-input process, including conducting a public hearing (usually as part of a regular meeting of the managers). After receiving input from local government representatives, watershed property owners, and other stakeholders, the managers must determine if the project will be conducive to public health, promote general welfare, and comply with the Metropolitan Surface Water Management Act. If so, they will order design and construction.

As part of BCWD's regular progress review and annual budgeting, the managers will review the status of all capital projects. Based on the results achieved to date, they will allocate funds and adjust the priority of and schedule for capital projects.

5.4.1.1 Cost-Share Projects

The plan identifies cost-share projects as an option for BCWD to make cost-effective progress toward its watershed goals. BCWD has and will continue to provide funding and technical support to watershed landowners for projects and programs that demonstrate progressive resource stewardship. This funding's primary purposes are education and engagement – to show others that effective resource management and attractive landscaping can go hand-in-hand and to encourage wider adoption of land-use practices and management that align with BCWD goals. (Section 5.4.5 describes this stewardship program in more detail.)

Beyond these efforts, BCWD is interested in leveraging its technical and financial resources to support private and public partners' capital projects that contribute to the district's water-resource protection, flood-risk mitigation, and – when they align with watershed district purposes and powers – ecological health and public health goals. The contribution of land-use rights by cities and townships in the watershed has long been a critical collaboration for implementing district capital projects. For many capital projects in this plan, BCWD will lead the implementation (e.g., conducting feasibility studies, developing plans and specifications, and contracting for the work), and the work will follow Minnesota Statutes section 103B.251's standard capital improvement implementation structure and related public-contracting law.

BCWD also intends to expand its established partnerships and form new ones to incorporate flexible cost-sharing strategies into implementing capital projects led by another entity. For some projects, BCWD engagement will not constitute capital work and may only require district resources such as:

- Assessing options for or feasibility of options to address a water-resources management or flood-risk mitigation issue.
- Contributing district staff and/or BCWD engineer expertise.
- Contributing funding for completing a scope of work.
- Providing access to BCWD data.

For such projects, the partner would lead the contracting and oversee project completion. Watershed cities are the most likely partners, but Washington County, state agencies, and even private property owners could have project plans that serve as an appropriate venue for expanding BCWD's capacity to improve water resources, mitigate flood-risk, or improve ecological health.

In other cases, BCWD engagement will constitute capital work, and the district will pursue such projects under one of two procedures designed to ensure congruence with its purposes and powers:

5.4.1.1.1 Programmatic Cost-Share Projects

For small contributions of BCWD fiscal resources (either actual funding or in-kind technical support), the district will establish by board action program criteria for participation based on an assessment of the district engineer showing specific need for water-resources, flood-risk mitigation, or ecological health improvements that align with watershed district purposes and powers, and specific benefits that will be achieved by projects to be supported by BCWD. For example, an analysis by the BCWD engineer that shows an increased risk of flooding around a particular water body such that mitigation measures undertaken by property owners proximate to the resource will contribute to diminishing the risk. Such support programs will be established only after a duly-noticed hearing before the board and comment period. Such programs will be included in the annual budget and will provide no more than $25,000 in funding for any one specific project or $100,000 in total annually for a program.

5.4.1.1.2 Major Cost-Share Projects

For larger individual cost-share projects (contributions of BCWD funding greater than $25,000), the board will make a record determination that the project implements a capital improvement already in its plan or will authorize the pursuit of the minor plan-amendment process consistent with Minnesota Rules 8410.0140 to add the project. Either decision will be based on a record determination by the BCWD engineer that the project has the potential to contribute to the achievement of BCWD goals. From there, the project will be the subject of a hearing conducted in accordance with Minnesota Statutes section 103B.251 prior to ordering by board of managers and supported by a feasibility assessment by the engineer. After ordering by the board of managers, major cost-share projects will be conducted in accordance with a cooperative agreement among the partners that outlines the roles and responsibilities of each as they relate to the district-funded work. Long-term maintenance of structural best management practices and vegetative improvements will be provided for in the cooperative agreement, and for work on privately owned property, a maintenance declaration will be recorded on the title.

BCWD will budget funding and staff and engineering time annually for special cost-share projects. Projects that require resources exceeding a given budget cycle's available funding will be multiyear endeavors, for which specific budget and resource allocations will be made after initial development under the baseline annual program. This structure reflects the fact that projects requiring greater resources will also have longer planning timelines, allowing the district to budget accordingly.

The structure outlined here will be carefully followed to ensure BCWD's expenditure of levied funds is consistent with the Public Purposes Doctrine established in article 10, section 1 of the Minnesota Constitution, which requires that such expenditures demonstrably accrue to the public benefit and proceed under the authorities provided to watershed district by the Legislature (most importantly, the capital-project ordering requirements in Minnesota Statutes section 103B.251). Under no circumstances will BCWD contribute funds to capital work required by application of BCWD regulatory requirements or the requirements of another regulatory entity.

5.4.1.2 Maintenance

BCWD maintains a *Capital Improvement Program Standard Operating Procedures Manual* for projects that it owns, operates, and/or maintains. The manual consolidates key project information in a single location, enabling staff to efficiently track and manage the activities required for proper operation and maintenance. The manual includes:

- **Project Information**: Location, description, background, and funding
- **Maintenance and Inspection**: Requirements and responsible parties
- **Cooperative Agreements**
- **Maintenance Records and Reporting**
- **Emergency Plans and Operating Procedures**
- **Appendices**: Record drawings and other relevant project information

To date, BCWD provides operation and maintenance activities on 20 projects. The *Capital Improvement Program Standard Operating Procedures Manual* can be found on BCWD's website.

5.4.2 Information and Education Program

BCWD has been a partner in the East Metro Water Resource Education Program (EMWREP), a shared educator program, since its inception in 2006. EMWREP is a partnership of 29 local units of government, hosted by the Washinton Conservation District. The program's goal is to educate community residents, businesses, staff, and decision-makers about issues affecting local lakes, rivers, streams, wetlands, and groundwater resources and to engage people in projects to protect and improve their health.

BCWD also implements its own education through BCWD events, tabling at local partner events, creating and sharing BCWD-specific education and outreach materials, and giving presentations to community groups and organizations.

5.4.3 Data Collection Programs

BCWD will continue to monitor water quantity and quality of water bodies within the watershed, focusing on high-priority waterbodies. BCWD's water quality, streamflow, water level, and groundwater monitoring programs are described in the Land and Water Resource Inventory (Appendix F). BCWD submits quality-controlled and -assured monitoring data to the following state agency databases annually: Metropolitan Council Environmental Services' Environmental Information Management System (EIMS), Minnesota Pollution Control Agency's Environmental Quality Information System (EQuIS), Minnesota Department of Natural Resources' LakeFinder database (lake elevations), and the Minnesota Climatology Working Group (precipitation). BCWD submits weather station data to the WCD annually and to partners on an as-requested basis. BCWD submits groundwater data to partners including the Minnesota Department of Health, Metropolitan Council, and member communities on an as-requested basis.

5.4.4 Regulatory Program

To fulfill Minnesota Statutes section 103D.341, BCWD has developed and adopted rules and associated procedures to review and permit activities that present a potential risk to water resources. Any development activity that meets certain thresholds ("triggers") must receive a permit from BCWD prior to project implementation. BCWD's rules (2020) (to be updated during this plan's implementation) specify the requirements and performance standards applicable to these activities. BCWD works in collaboration with city and township representatives to encourage communication early in the project development process to provide potential applicants with guidance on which BCWD rules may apply to a given activity and how plans can be designed to achieve the applicable standards and criteria. When applicable, BCWD coordinates its review with other agencies or watershed districts. The procedures for permit application and complete submittal requirements are included in BCWD's rules (2020).

Continued rigorous and effective administration of the BCWD regulatory program will be central to BCWD's efforts to address the priorities and achieve the goals articulated in the plan. In conjunction with finalization of the plan, BCWD facilitated partner meetings to gain feedback on the current BCWD regulatory program and recommendations for the BCWD Board of Managers to consider when developing the updated (2027-2036) Watershed Management Plan and future initiatives of the regulatory program. Participants were asked to consider the three components of the regulatory program: rules, processes, and outreach and information. The following themes emerged from these partner discussions:

- **Theme 1**: The BCWD regulatory program should be transparent, efficient, equitable, consistent, and not unduly complicated.
- **Theme 2**: The BCWD regulatory program should protect and improve the resources and properties in the district, and there should be accountability.
- **Theme 3**: Communication is critical, should be consistent, and should lead to improved engagement and understanding with the public, partners, permittees, and other specific audiences including engineers representing permittees and the business community.
- **Theme 4**: BCWD should collaborate with other entities including neighboring watershed districts, cities, counties, and private partners to improve its programs.

Specific recommendations from these partner discussions have either been implemented by district staff or have been included as actions in the implementation plan. The BCWD Regulatory Review: Report and Recommendations can be found in the appendices.

Minnesota Statutes section 103B.211, subdivision 1(a)(3), provides the framework for watershed cities to determine whether to authorize BCWD to exercise the regulatory authority necessary to achieve the water resource protections provided by the thresholds, standards and criteria of the BCWD rules. Under any circumstances, BCWD will continue to exercise regulatory authority for permitting under those rules that apply to activities affecting water resources in more than one city and/or township.

Partners gathered in 2024 for a facilitated discussion about BCWD's Regulatory Program.

5.4.5 Incentive Programs

Beyond the cost-share structure described above for BCWD support for capital improvements undertaken by others, BCWD has established and will continue to utilize cost-share programs to incentivize the implementation of projects aimed at promoting stewardship.

The **Stewardship Program** enables landowners (including residents, churches, schools, communities, and businesses) to identify and implement projects that improve water quality, reduce runoff, and improve habitat in the watershed. Eligible applicants receive up to a $500 reimbursement for materials used for projects including native plant/pollinator gardens, small buffer strips, turf alternatives, waterspout gardens, rain barrels, or targeted water education, information, or outreach activities. After project completion, the landowner must maintain the project for a minimum of five years and be willing to share information and photos on the project for BCWD's education and outreach. The program is designed to encourage property owners to demonstrate best practices for land use and resource improvement rather than to achieve specific resource improvements or flood-storage enhancement. Funding amounts and qualifying criteria for the program will be modified by action of the board of managers over the course of implementation of the plan to best serve program goals considering community interests and capacity.

5.4.6 Waters Restoration and Protection Program

Several water bodies in the watershed are included in the Minnesota Pollution Control Agency (MPCA)'s impaired water 303(d) list (see the Land and Water Resource Inventory in Appendix F). To address impairments and restore resources so they can provide designated uses, the MPCA completes a total maximum daily load (TMDL) analysis. In recent years, the MPCA has also shared guidance for developing and implementing watershed restoration and protection strategies (WRAPS) to address impairments and protect waters not currently listed as impaired. Specific projects and programs to improve and/or protect the water quality of assessed waterbodies can be found in the implementation plan as a result of TMDLs and WRAPS. In 2010, BCWD completed the Brown's Creek Impaired Biota TMDL, which was approved by the Environmental Protection Agency (EPA) on December 21, 2010. The Minnesota Pollution Control Agency approved the Brown's Creek TMDL Implementation Plan in February of 2012. [2]

BCWD has also developed a few lake management plans that assess the quality of the resources relative to the state's water quality standards and identify the required activities to meet the state's water quality standards. To date, lake management plans have been developed for Bass Lake East, Bass Lake West, Benz Lake, Goggins Lake, Kismet Basin, Long Lake, Lynch Lake North, Lynch Lake South, Lake Masterman, Lake McKusick, North School Section Lake, Pat Lake, Plaisted Lake, South School Section Lake, and Wood Pile Lake. BCWD is in the process of developing a targeted subwatershed improvement plan for Brewer's Pond.

Because Brown's Creek discharges to the St. Croix River, the watershed has been assigned a load reduction in the implementation plan for the Lake St. Croix nutrient total maximum daily load (848 lbs./TP/yr.), which was revised in February of 2013. Projects BCWD undertakes to reduce sediment and nutrient loading to Brown's Creek will contribute to efforts to reduce such loading to downstream Lake St. Croix.

[2] BCWD is not a Municipal Separate Storm Sewer System (MS4) owner or operator and therefore is not required to hold a permit under the Clean Water Act. BCWD has led the development and implementation of the Brown's Creek TMDL voluntarily, in keeping with its statutory water resources protection and improvement purposes.

This plan's development has been informed and directed by the TMDL implementation plans and lake management plans. Each plan contains a prioritized list of potential projects that could be undertaken to address the resource-specific water quality issue(s). BCWD has integrated a number of these projects – as well as nonstructural programmatic efforts – into Table 80. Before undertaking these capital projects, BCWD will conduct a more detailed feasibility study to evaluate the cost-effectiveness of each. If the board of managers determines, after gathering input from stakeholders and conducting a public hearing, that a project will be conducive to public health, promote the general welfare, and comply with the Metropolitan Surface Water Management Act in Minnesota Statutes chapter 103B and the plan, it will order the project to be designed and constructed.

As BCWD continues to gather data on and assess threats to water resource health in the watershed, it may undertake or participate in developing new lake or subwatershed management plans. As such plans are completed and implementation items identified, BCWD will consider expanding its programs and adding capital improvement projects to its implementation plan.

Finally, BCWD's regulatory program provides a baseline level of protection and contributes to restoration of water resources by ensuring that development and redevelopment in the watershed does not degrade water quality, allowing capital investments to fully accrue to the restoration benefits.

5.5 Funding of District Activities

BCWD obtains most of its revenues for water resource programs and projects from taxes assessed to real property in the watershed. Other sources of revenue include grants or cost-share participation from other governmental bodies, expenditures by program or project partners, and permit fees, which are used to cover the cost of administering permits by the district.

Minnesota Statutes section 103D.905 specifies funds a watershed district in Minnesota may maintain, along with limits on the amount of tax a district may levy for that fund, how frequently it may levy, and other requirements. BCWD also utilizes the funding mechanisms in chapter 103B of Minnesota law to ensure a balanced and transparent approach to funding the implementation of its plan.

The fund for basic BCWD operations is the general fund, for which BCWD may levy up to 0.096 percent of taxable market value of real property in the watershed or $500,000 annually – whichever is less. This fund is used "for general administrative expenses and for the construction or implementation and maintenance of projects of common benefit to the watershed district." BCWD levies annually under this authority to fund administrative staff, consultant retainers, office space and equipment, insurance, manager per diems, and similar basic administrative expenses.

In addition, for BCWD and other metropolitan watershed districts, Minnesota Statutes section 103B.241 provides authority to "levy a tax to pay the increased costs of preparing a plan and for projects identified in an approved and adopted plan necessary to implement the purposes of [chapter 103B]." This levy authority is not subject to a structural limitation, and funds may be accumulated to pay for projects and programs. Section 103B.251, subdivision 9, authorizes a separate levy for maintenance of constructed projects. It has been BCWD's practice to provide that the public or private entity that contributes the necessary property for a project takes ownership of the project when complete. Nonetheless, BCWD has retained maintenance responsibility in many cases, and its ability to fund such work via the 103B.251 levy is a resource BCWD may contribute, via the cooperative agreement among the participating entities for the project, to implementation of a project. While BCWD has not utilized this authority to date, it may do so in the future as it continues to add to the roster of completed facilities.

This levy authority highlights the importance of the plan for BCWD activities because it defines the programs and projects for which BCWD may exercise its taxing authority. While implementing this plan,

the district will consider consolidating its levy under the authority in Minnesota Statutes section 103B.241, as other watersheds in the metro area do, rather than levying under both 103D.905 and 103B.241. The board will coordinate closely with Washington County to ensure that such a consolidated approach will retain transparency for the public and achieve administrative efficiencies.

A subwatershed assessment is another capacity BCWD has not used to date but could deploy as stormwater management infrastructure in the watershed ages and maintenance needs intensify. BCWD retains a watershed-wide view of its resource protection and improvement role and funds its work accordingly. The board's judgment has been that BCWD's programs and projects are directed toward watershed-wide goals in which all watershed residents have a stake, and that over time, any localized benefits of specific BCWD actions tend to distribute themselves roughly equally among residents. However, the interests of fairness may press for imposing a subwatershed-based stormwater utility as provided in Minnesota Statutes sections 103D.729-.730 and 444.075. This levy may be appropriate, for example, where a BCWD expense relates predominantly to certain properties within the watershed or the benefits of a program or project will fall disproportionately on certain properties.

The board of managers must approve a budget and certify it to Washington County by September 15 each year. This levy may decrease before it is finalized in December. The county then includes BCWD's levy in its tax statement, collects the levy, and distributes the proceeds to BCWD, half the following July and half the January thereafter. (See Washington County Financial and Budget Policy #2403).

If BCWD unexpectedly requires funds outside of the levy cycle, it may obtain loans from Washington County or a commercial lender on negotiated terms. County loans were instrumental in the first two years of BCWD's existence but were paid off before their due date and have not been required since.

BCWD also pursues grants, in-kind services, and/or participation by other government units or agencies. BCWD has had tremendous and fortunate success in securing $1.9 million since 2016 in grant funds from the Minnesota Board of Water and Soil Resources, the Minnesota Pollution Control Agency, Washington County, and the Metropolitan Council; sharing project responsibility with the Cities of Stillwater and Oak Park Heights; and securing low- or no-cost easements needed for capital projects from public and private property owners. While BCWD cannot plan for such success going forward, it will continue to explore these types of funding opportunities as it implements this plan.

Additionally, BCWD is a member of the Lower St. Croix Watershed Partnership. As a planning partner, it may use *One Watershed, One Plan* (1W1P) implementation funding to carry out activities included in the LSCWP's implementation program if they align with the watershed capital improvements program. The state provides 1W1P implementation funds biennially, and they are allocated by the LSCW partnership.

Finally, watershed law section 103D.345 authorizes watershed districts to recover processing, inspection, and enforcement costs from watershed permittees. This has allowed BCWD to recover a substantial portion of its permit program implementation cost. BCWD has established an actual-cost recovery schedule, ensuring that permittees pay exactly and only the costs incurred by BCWD in reviewing application materials, issuing the permit, and inspecting permitted work. A permit fee is submitted at the time of application, held in escrow by BCWD, and applied to the cost of permit review. Upon permit approval, the permittee must replenish the deposit to the original required amount before the permit will be issued, to facilitate BCWD's recovery of the actual costs it incurs to monitor the work and address any permit non-compliance. When the work has been completed, the escrow balance is returned to the permittee. If BCWD has incurred costs exceeding the escrow deposit, the permittee is billed for the additional amount. This intensive management approach is consistent with BCWD's commitment to a transparent and equitable financial management structure.

5.6 Plan Administration and Coordination

5.6.1 Decision-making and Staffing

BCWD contracts with the Washington Conservation District for full-time administrative services. The district administrator acts exclusively at the discretion and direction of the BCWD Board of Managers in implementing BCWD's mission, goals, and priorities and is supported by a full-time communications and project assistant.

5.6.2 Advisory Committees

5.6.2.1 Community Advisory Committee

To fulfill Minnesota Statutes section 103D.331, BCWD has an advisory committee to advise and assist the board of managers on all matters affecting the interests of the watershed and to make recommendations to the managers on all projects, programs, and activities. BCWD's Community Advisory Committee meets six times per year (in even months) and helps host events throughout the year. The group was called on more often and intensively during the development of this plan and provided invaluable input, as described in section 3.3 *Stakeholder and Public Involvement.* Community Advisory Committee members support BCWD by supporting monitoring efforts, assisting with community outreach and networking, and advising the district of noteworthy change in the watershed. Interested parties may visit the district website to find information on the current Community Advisory Committee and how to become a member. Information is available in the "Get Involved" section of the website.

5.6.2.2 Technical Advisory Committee

To fulfill Minnesota Statutes section 103D.337, BCWD's Technical Advisory Committee (TAC) includes representatives of its cities and townships, Washington County, state agencies, and the Washington Conservation District. The entire TAC is rarely called together outside of plan development but will be engaged in the development of draft regulatory updates and improvements. The BCWD administrator also works closely with colleagues representing the various TAC member entities, especially as relates to construction and maintenance of specific capital projects (cities, townships, the Minnesota Department of Natural Resources); ongoing regulatory, project-development, and monitoring efforts (the Washington Conservation District); and regarding groundwater-protection and restoration work (Washington County).

5.6.3 Identification and Coordination of Shared Services

To increase efficiency and gain effectiveness, BCWD strives to identify opportunities to achieve its goals without the need to independently develop the expertise, services, or programs. Shared services that BCWD utilizes include:

- A shared educator through partnership in the East Metro Water Resource Education Program (EMWREP)
- A shared educator and program support through the Lower St. Croix Watershed Partnership
- A youth education program in partnership with Stillwater Area Public Schools and Belwin Conservancy
- Administrative services, technical assistance, water monitoring services, and project maintenance through contracts with the Washington Conservation District

5.6.4 Work Planning

The BCWD Board of Managers has set an annual budget target. Each year, BCWD will review the prior year's performance against the budget (including success in obtaining grants) and adjust, in its annual budgeting process, in accordance with the priorities identified in section 3 of the plan. The annual budget sets the general framework for the activities that will occur in the upcoming year to address BCWD's priorities and may be adjusted as additional monitoring and assessment is completed.

5.6.5 Assessment and Evaluation

5.6.5.1 Implementation Accomplishment

This annual evaluation includes reviewing the implementation plan and confirming which activities have been accomplished. This information is used to develop BCWD's annual budget, annual report, and biennial evaluation.

5.6.5.2 Annual Reporting

Each year, BCWD evaluates its progress towards achieving its goals and performing the activities identified in the implementation plan (Table 80). One step BCWD takes is to meet with its member communities to discuss progress towards implementing local surface water management plans and TMDL implementation plans, achieving other mutual goals, and partnership opportunities.

BCWD documents its progress in achieving its goals in an annual report which is published on the district's website. As required in Minnesota Rules 8410, BCWD must submit an activity report for the previous calendar year within the first 120 days of the calendar year. BCWD must also submit an audit report for the previous fiscal year within 180 days of the end of its fiscal year.

The BCWD annual report and financial statement reports on the following categories:

- **Administration:** budget management, income and expenditures for the previous year, board meetings, and contact information.
- **Monitoring and Data Analysis:** lake water quality report card and stream monitoring data.
- **Annual Accomplishment Highlights:** management plans, capital improvement projects, feasibility studies, inventories and assessments, BMP cost-share programs, and education and outreach activities.
- **Planned Projects for the Upcoming Year:** management plans, capital improvement projects, feasibility studies, inventories and assessments, BMP cost-share programs, and education and outreach activities**.**

5.6.5.3 Biennial Evaluation

BCWD will conduct a biennial evaluation of the previous years' work to assess performance in meeting its goals. This evaluation will assess the need to make changes in the district's work plan due to new information, landowner willingness to participate in projects, new opportunities to apply for grant funding, and other significant new developments. BCWD will evaluate implementation of 2027-2036 Watershed Management Plan activities by assessing the following categories:

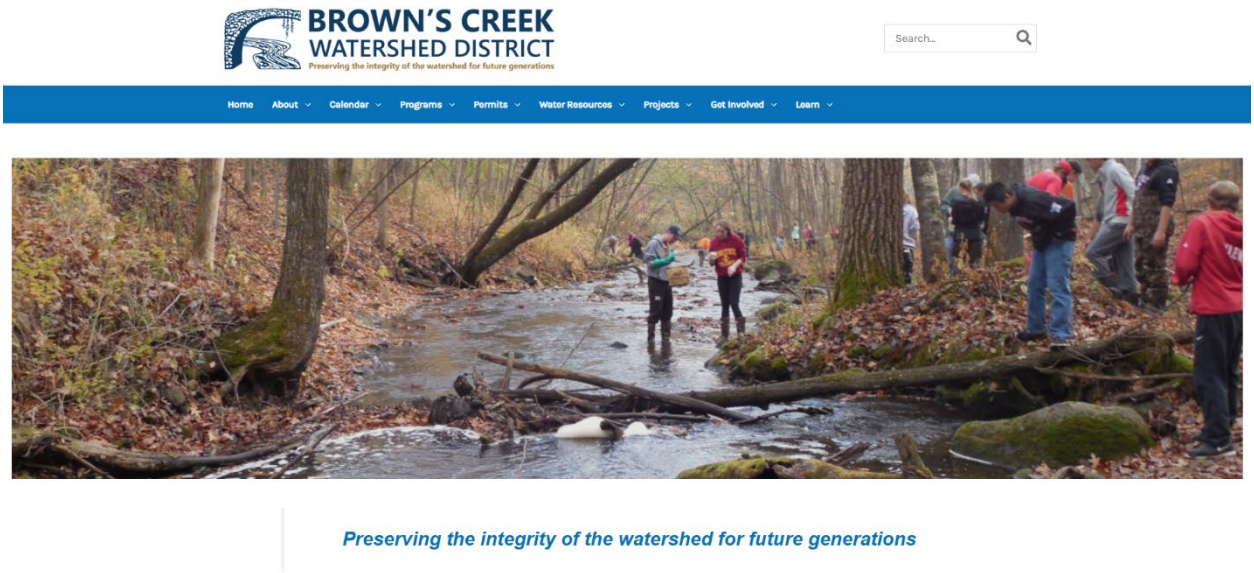
- **Staff functions:** Covering many of the same activities as the annual report and financial statement, this evaluates each of BCWD's issue categories, including progress toward implementing policies and achieving goals. It includes metrics associated with ongoing programs (e.g., number of best management practices installed via BCWD's stewardship or cost-share programs and/or the efficiency of BCWD's permitting program) and an evaluation of data about funding leveraged from outside sources (e.g., grant funding and/or partner contributions).

- **Pollutant reductions:** Actions taken under the Brown's Creek Management Plan (Table 81) and Lake, Pond, and Wetland Management Plans (Table 82) and completed during the reporting year will include pollutant-reduction estimates based on commonly accepted pollutant-reduction calculators. BCWD also intends to update the watershed conditions report every five years. This report will assess the impact of district's programs on water quality, evaluate trends in watershed conditions, and evaluate the need to make course corrections in watershed management strategy. Biennial evaluations that fall on or just after these years (2030 and 2035) will take a closer look at the trend analysis, adaptive management strategies, and the need to perform a plan amendment to include new restoration and/or protection projects.
- **New initiatives:** Actions taken to develop, implement, and measure new programs, projects, and initiatives will be evaluated in terms of process, participation, and outcomes.

5.6.5.4 BCWD Website

BCWD will continue to maintain its website with current information, including the location, time, agenda, and minutes for organization meetings; the current watershed management plan; annual activity reports; rules and regulations; a list of the BCWD Board of Managers and designated officers; and a list of staff including contact information. BCWD is in the process of ensuring the website meets the Americans with Disabilities Act (ADA) Title II requirements by April 26, 2028.

BCWD hosts many other resources on its website. The website provides information and direct access to management plans; programs related to funding, education, and district monitoring reports; and direction to information hosted by other related agencies. The district, in providing these materials, hopes the website serves as a resource for businesses looking for pre-development permitting guidance and residents seeking to remain educated on district news, assist the district in outreach efforts, or help protect and improve water resources the watershed. The website is located at: http://bcwd.org/.



Screenshot of the BCWD's website home page.

5.7 Impacts on Local Government

BCWD's watershed management plan includes many strategies and programs that the district may pursue to fulfill its water resource mission that will involve local government participation. Examples include:

- Establishing and implementing standards for water-resource protection and flood-risk mitigation
- Inventorying of local stormwater-control standards
- Reviewing land-use ordinances for water resource impacts
- Implementing education and outreach programs
- Implementing monitoring and data acquisition programs

Most of the programs identified in the plan do not compel local government involvement. Rather, in pursuing a specific activity under the plan, the district will typically seek to develop a partnership with affected local governments, allowing each entity to contribute as befits its interests, capacities, and objectives that can be cost-effectively pursued in partnership with BCWD. To facilitate these partnerships, BCWD will ensure that a manager will be appointed to be a community liaison. Current managers and their liaison appointments can be found at bcwd.org/contact-us/.

5.7.1 Local Water Management Plan Schedule

Minnesota Rules chapter 8410 establishes the relationship between the schedule for cities' and towns' local water management plan updates and their comprehensive-planning process, mandating updates to local water plans within two years of the corresponding comprehensive plan. Prior to adoption, a municipality must prepare its local water plan, distribute it for comment, and have it approved by the organizations with jurisdiction in the municipality. Updated local comprehensive plans are due December 31, 2028. As a result, all cities and townships in BCWD must complete and adopt their local water plan between January 1, 2027, and December 31, 2028.

5.7.2 Local Water Management Plan Requirements and BCWD Review

Minnesota Rules 8410.0105 requires that the plan provides a procedure to evaluate the implementation of local water plans and procedures to address a local government unity failing to implement all or part of its local water plan. As noted, cities and townships in the Brown's Creek watershed must complete and adopt a local water management plan between January 1, 2027, and December 31, 2028. Under Minnesota Statutes section 103B.235, draft local water management plans must be submitted to BCWD for review and approval. (Local water management plans must also be submitted to the Metropolitan Council and, because it has a state-approval groundwater management plan, Washington County at the same time they are submitted to BCWD). A city or township may, at its discretion, choose to adopt the 2027-2036 Watershed Management Plan in whole or part to satisfy its statutory local water management plan requirement.

After BCWD reviews and approves a local water management plan, the city or township must adopt and implement the plan within 120 days and determine whether to amend its official controls (ordinances) and policies to provide protection of water resources at least as effective as provided by the BCWD rules or defer exercise of sole regulatory authority to BCWD. If a watershed city or township elects to update its ordinances and implement water-resources protections via its land-use regulatory program, the city or township and BCWD will enter into a memorandum of understanding (MOU) detailing the scope of each entity's exercise of regulatory authority (i.e., who will regulate what). Such an MOU would also establish a process and schedule for exchanging progress reports and describe procedures and a timeline for BCWD's reengagement of its regulatory authority if the city or township is found to have not adopted the necessary controls or not implemented a complete and effective regulatory program.

Consistent with this regulatory framework, BCWD will require as a condition of approval that the local water management plan state that the city or township will update its ordinances to maintain conformity to the BCWD rules or defer exercise of regulatory authority for the work covered by the revised rule within one year after BCWD provides notice that it has significantly revised a rule.

With each city or township, BCWD will discuss the option that best addresses its circumstances, and the parties will collaboratively determine the most practical approach to meeting the requirements of this plan and Minnesota Rules chapter 8410. BCWD understands the need to be sensitive to consistency and coordination with its adjacent watershed districts and water management organizations in the implementation of watershed standards and projects while pursuing BCWD's goals. BCWD will work closely with cities and townships as requested in their preparation of an updated local water management plan and wishes to take a collaborative approach to review and implementation as well. BCWD will rely on its close working relationship with cities, townships, and other local government units to collaborate on solutions and the resolution of any conflict. There are no implementation activities in the 2027-2036 Watershed Management Plan that depend solely on local units of government implementing their local water plans for implementation.

Regarding the state Wetland Conservation Act (WCA) and implementing rules in chapter 8420: Presently BCWD does not administer WCA in any portion of its jurisdiction and expects that each city and township will continue to serve as the WCA local governmental unit (LGU) in its jurisdiction. BCWD has been and remains amenable to serving as LGU at a city or township's request but would prefer to serve as the LGU throughout the watershed if asked to do so rather than taking on administration in only one or a couple of areas. (Note that BCWD's regulatory requirements pertinent to wetland protection continue to apply even when BCWD is not the WCA LGU for a particular property or project.) Under any circumstances, the Washington Conservation District will continue to serve as a key source of expertise and assistance with wetland management and improvement efforts.

5.7.3 Plans and Water-Related Agreements

There are county and state agency plans that identify policies and initiatives that will impact local government units. Where these policies and initiatives overlap with BCWD's watershed management policies and goals, they have been included in the plan as a goal, implementation activity, project partner, or source of funding. The main planning documents reviewed during the development of this plan include:

- Minnesota's Climate Action Framework - Draft (Draft 2025)
- Lower St. Croix Comprehensive Watershed Management Plan (adopted October 28, 2020; Amended August 2025)
- Washington County 2025-2035 Groundwater Plan
- Metropolitan Council's Imagine 2050 (adopted February 12, 2025)
- Metropolitan Council's 2050 Water Plan (adopted February 12, 2025)
- Lower St. Croix River Watershed Groundwater Restoration and Protection Strategies Report (June 2018)
- MNDNR North & East Metro Groundwater Management Area (November 2015)

BCWD also has two water-related agreements with its member communities: one with the City of Stillwater and one with the City of Oak Park Heights. These agreements have implications for stormwater management as explained below.

5.7.3.1 Cooperative Agreement for a Project to Manage Stormwater and Protect Water Quality in the Brown's Creek Watershed

The City of Stillwater completed an alternative urban areawide review (AUAR) in May 1997. The AUAR evaluated potential environmental impacts from development of an area west of the city that was proposed to be annexed, and proposed a mitigation plan to avoid, minimize, and/or mitigate for these impacts. The AUAR indicated that several important regional natural resources are potentially affected by proposed development in the area: Brown's Creek, the Brown's Creek ravine, Sinnet's Pond, and the St. Croix River. Other resources of local significance such as Long Lake and Lake McKusick were also identified as areas that might be affected by proposed development.

The Stillwater AUAR Mitigation Plan, completed in July 1997, specifies measures or procedures that will be used to protect the environment and natural resources from the potential impacts of development in the annexation area. The cornerstone of the mitigation plan is the diversion of stormwater flowing from Long Lake and other portions of the annexation area to Lake McKusick and from there through a constructed outlet to the St. Croix River. The goals of the Lake McKusick diversion are to: (1) preserve and enhance the integrity of Brown's Creek, (2) improve the water quality and quantity conditions in Long Lake, and (3) allow the City of Stillwater to proceed with the development as proposed in the city's comprehensive plan. One of the implications of the cooperative agreement among Stillwater, Oak Park Heights, and BCWD is that the diversion structure constructed to serve as a regional treatment facility was deemed sufficient to meet the stormwater management requirements of BCWD's rules. The agreement stated that the diversion structure provided runoff volume control sufficient to meet the standard in the BCWD stormwater management rule for land-disturbing activity in the contributing drainage area.

In the course of implementing its 2017-2027 plan and updating its rules according, BCWD reached an understanding with Stillwater and Oak Park Heights that the agreement's carve-out for the diversion structure subwatershed was no longer sufficient to meet resource-protection goals, and that the revised rules' new Minimal Impact Design Standards-based volume standard should apply to land-disturbing activities that triggered BCWD rules in the subwatershed.

5.7.3.2 Cooperative Agreement between BCWD and the City of Oak Park Heights

The City of Oak Park Heights has a cooperative agreement with BCWD for a regional stormwater facility that provides stormwater management for the Kern Center drainage area (a 92-acre area bound by Highway 5 on the east and Highway 36 to the north). A copy of this cooperative agreement can be found in Appendix G of the plan.

The performance of Kern Center facility will be assessed against the updates to the BCWD stormwater management rule as the amendments to the rule are developed. The BCWD engineer anticipates that the design and function of the facility – which significantly post-dates the Long Lake diversion structure – continues to provide necessary infiltration and treatment.

5.7.3.3 Lower St. Croix Watershed Partnership

Additionally, BCWD is a member of the Lower St. Croix Watershed Partnership. From 2017-2020, 15 local government partners worked to create a collaborative and comprehensive plan to guide the protection and restoration of priority natural resources in the Lower St. Croix Watershed. This *One Watershed, One Plan (1W1P)* process was part of a statewide program led by the Minnesota Board of Water and Soil Resources. The 10-year comprehensive watershed management plan was approved on Oct. 28, 2020, and partners are now working to implement the plan's priority projects and programs. In this capacity, BCWD coordinates with the partnership to implement projects in pursuit of shared goals, leveraging 1W1P planning area funding, as applicable.

5.8 Plan Revision and Amendment

This plan, as may be amended, will guide BCWD activities through 2036, when it will be superseded by approval and adoption of a subsequent plan pursuant to Minnesota Statutes chapter 103B and Minnesota Rules chapter 8410. In the meantime, significant changes to goals, policies, standards, administrative procedures, or capital improvements as described in the plan will be undertaken in accordance with the process provided in Minnesota Rules 8410.0140.

5.8.1 General Amendment Procedure

All amendments to a plan will be initiated only by action of the board of managers acting as a body, but BCWD anticipates that any amendments needed will involve only the addition of detail on projects and programs, and the addition of specific projects to fulfill goals already established in the plan. (BCWD intends to specify criteria for entering into cost-share projects with public and private partners through adoption of resolutions that fulfill goals and purposes established in the plan, i.e., without amending the plan.) As such, BCWD anticipates that any amendments needed will be subject to the "minor amendment" process provided in Minnesota Rules 8410.0140, subpart 2. That said, BCWD will not shrink from a major change to the plan if circumstances and developments on the ground and in the waters mandate it. In such instance, BCWD will amend the plan in accordance with the procedures prescribed by Minnesota Statutes section 103B.231, subdivision 11.

5.8.2 Amendment Format and Distribution

Unless the entire document is reprinted, all amendments proposed by BCWD will be distributed in ~~strikeout~~/underline form of replacement pages for the plan. Draft amendments will be distributed electronically to the list of agencies and individuals who are either required to receive amendments or who have asked for same. If a recipient requests, BCWD will distribute proposed amendments as hard copy, but in the first instance BCWD will distribute amendments and receive comments electronically. BCWD's plan is available on its website – http://bcwd.org – and will post draft amendments whenever such changes are proposed.

5.8.3 Local Water Management Plan Amendment

Local water management plans should be amended in accordance with Minnesota Statutes section 103B.235, subdivision 5, and Minnesota Rules 8410.0160, subpart 4. Amendments will be timely-reviewed and, in accordance with applicable requirements of state law, approved on a determination by BCWD that the amendment ensures that the local water plan remains consistent with BCWD's plan.

Community members gathered in 2025 for a tour led by the Community Advisory Committee.

Canoeing through the lily pads for an aquatic plant survey on Long Lake in 2025.

Table 80. Implementation Plan – Higher Priority

Implementation Activity	Schedule and Estimated Cost											Potential Funding Sources / Authority	Partners								Measurable Outcomes
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Year Total		Non-Profit/Community Groups /Volunteers	U of M Extension	Businesses/Landowners	School District	Cities/Townships	Counties/SWCDs	Adjacent WMOs	State/Federal Agencies	
Administration - Internal Services	**250,000**	**250,000**	**250,000**	**250,000**	**250,000**	**250,000**	**250,000**	**250,000**	**250,000**	**250,000**	**2,500,000**										
Annual administration costs include manager per diems and expenses, secretarial services, dues and subscriptions, bonding and insurance, postage and delivery, printing and notices, accounting, Washington Conservation District administration, conference registrations, legal fees, and staff engineer fees	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	2,500,000	BCWD ad valorem									
Project Development	**230,000**	**230,000**	**230,000**	**230,000**	**230,000**	**230,000**	**230,000**	**230,000**	**230,000**	**230,000**	**2,300,000**										
Washington Conservation District, legal, and staff engineer	230,000	230,000	230,000	230,000	230,000	230,000	230,000	230,000	230,000	230,000	2,300,000	BCWD ad valorem									
Watershed Management Plan						**40,000**	**40,000**	**40,000**	**40,000**	**40,000**	**200,000**										
Allocate funds in anticipation of the 2037-2046 watershed management plan update.						40,000	40,000	40,000	40,000	40,000	200,000	BCWD ad valorem									Funds set aside for the development of the 2037-2046 watershed management plan.
Stormwater Runoff Management	**281,000**	**381,000**	**235,000**	**385,000**	**275,000**	**225,000**	**375,000**	**225,000**	**225,000**	**325,000**	**2,932,000**										
Utilize the district's stewardship and cost-share programs to assist residents in installing water quality improvement projects (including thermal best management practices) and water quantity (e.g., volume control) practices.	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	500,000	BCWD ad valorem	√		√	√					Conduct two to ten projects per year assuming $25,000 cap and 10-12 hours of Washington Conservation District technical assistance per project.
Revisit sampling at the Long Lake inlet, and three locations within the Zephyr tributary for six to eight rain events to evaluate possible sources of phosphorus and recent data trends.	6,000	6,000									12,000	BCWD ad valorem					√			√	Report summarizing sampling results and trend analysis.
Investigate more opportunities for erosion control or sediment remediation in the north branch, west branches one and two, and the direct drainage to the diversion structure to further improve phosphorus loading to Lake McKusick.				60,000							60,000	BCWD ad valorem					√	√			Report recommending opportunities for erosion control.
Partner with local businesses (e.g., golf courses like Stillwater Country Club and/or Logger's Trail) to implement stormwater capture and reuse, where safe and feasible for human health.		150,000					50,000				200,000	BCWD ad valorem			√						Reuse projects completed.

Implementation Activity	Schedule and Estimated Cost											Potential Funding Sources / Authority	Partners								Measurable Outcomes
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Year Total		Non-Profit/Community Groups /Volunteers	U of M Extension	Businesses/Landowners	School District	Cities/Townships	Counties/SWCDs	Adjacent WMOs	State/Federal Agencies	
Maintain BCWD-owned stormwater management facilities identified in the *BCWD Capital Improvement Project Standard Operating Procedures Manual*. Evaluate performance as needed including: • Observe facilities chosen for monitoring during construction to evaluate any conditions that would affect infiltration or removal rates. • Evaluate long-term performance and obtain design information on infiltration rates, suspended solids removal rates, phosphorus removal rates, and chloride concentrations as appropriate to the facility. • Monitor the iron enhanced sand filter medium after replacement. • Update the *BCWD CIP Standard Operating Procedures Manual*. • Develop and follow an operations and maintenance plan for stormwater management facilities operated by BCWD.	200,000	150,000	150,000	150,000	200,000	150,000	150,000	150,000	150,000	150,000	1,600,000	BCWD ad valorem						√		√	Report best management practice performance for evaluation criteria.
Establish a cost-share program that will allow BCWD to partner with the business/development community on best management practices that help a site go above and beyond the rule requirements.			10,000	100,000			100,000			100,000	310,000	BCWD ad valorem			√						Conduct four to ten projects assuming $25,000 cap and 10-12 hours of Washington Conservation District technical assistance per project.
Establish a cost-share program that will allow BCWD to partner with its member communities to implement water quality improvement/retrofit projects.	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	250,000	BCWD ad valorem					√				Conduct five to ten projects per year assuming $5,000 cap and 10-12 hours of Washington Conservation District technical assistance per project.
Erosion Prevention & Sediment Control	**15,000**	**7,500**	**7,500**	**22,5000**		**7,500**	**15,000**	**15,000**		**22,5000**	**112,500**										
Identify shoreline restoration opportunities. For example, using the Minnesota Department of Natural Resources' "Score Your Shore" tool.	15,000			15,000			15,000			15,000	60,000	BCWD ad valorem	√					√	√	√	Number of future shoreline restoration opportunities and shoreline restoration opportunities where work has been completed. Distance of restored shoreline.

Implementation Activity	Schedule and Estimated Cost											Potential Funding Sources / Authority	Partners								Measurable Outcomes
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Year Total		Non-Profit/Community Groups /Volunteers	U of M Extension	Businesses/Landowners	School District	Cities/Townships	Counties/SWCDs	Adjacent WMOs	State/Federal Agencies	
Conduct stream channel assessments from the headwaters to the St. Croix River to identify in-stream or near channel instabilities and active headcutting. Conduct biennial drone flights (every other year) upstream of Manning Avenue where large wetland complexes occur, and biennial foot surveys downstream of Manning Avenue, including the three tributaries south of Brown's Creek State Trail (South Central, Zephyr, and Long Lake tributaries). Conduct additional observations during walk throughs including: • Fish barrier assessment (see Ecological Health) • Footpath formation (see Recreation)		7,500		7,500		7,500		7,500		7,500	37,500	BCWD ad valorem								√	Report documenting findings of assessment and corrective actions if needed.
Support the Minnesota Department of Natural Resources in addressing Brown's Creek bluff instability projects and five-year assessment.			7,500					7,500			15,000	BCWD ad valorem								√	Report documenting assessment of bluff conditions and improvements from bluff stabilization projects.
Stream Management	**118,750**	**273,750**	**79,000**	**55,000**	**137,750**	**323,250**	**470,00**	**91,500**	**155,500**	**170,000**	**1,451,500**										
Continue to implement volunteer stream monitoring program by providing financial support to the Stillwater Area High School science program.	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	50,000	BCWD ad valorem				√					Annual presentation to the BCWD Board of Managers on the results of the macroinvertebrate survey.
Reassess the fish and macroinvertebrate community health at representative sites in three portions of Brown's Creek (Headwaters, Central, and Lower Gorge) in September.	5,000	5,000	5,500	5,500	6,000	6,000	6,500	6,500	7,000	7,000	60,000	BCWD ad valorem								√	Results will be used to evaluate stream health. Cost estimates assume that the Minnesota Pollution Control Agency will be conducting assessments of both fish and macroinvertebrates in2027 as part of its reassessment.
Conduct fish sampling on Brown's Creek, if not completed by the Minnesota Department of Natural Resources, to determine the population status and distribution of the rainbow darter in the gorge.	5,000			5,000			6,000			6,000	22,000	BCWD ad valorem								√	Improved population status and distribution in the gorge compared to previous samplings.

Implementation Activity	Schedule and Estimated Cost											Potential Funding Sources / Authority	Partners								Measurable Outcomes
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Year Total		Non-Profit/Community Groups /Volunteers	U of M Extension	Businesses/Landowners	School District	Cities/Townships	Counties/SWCDs	Adjacent WMOs	State/Federal Agencies	
Implement thermal improvement projects as identified in the Brown's Creek Management Plan - **SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER BROWN'S CREEK MANAGEMENT PLAN (TABLE 81).**	35,000	80,000	55,000	30,000	50,000	150,000	15,000	70,000	137,500	142,500	765,000	BCWD ad valorem					√	√			Improved biological community in Brown's Creek as determined by the IBI (Index of Biological Integrity) scores.
Implement TSS implementation projects as identified in the Brown's Creek Management Plan - **SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER BROWN'S CREEK MANAGEMENT PLAN (TABLE 81).**	54,250	182,750			70,750	161,250					469,000	BCWD ad valorem						√		√	Reduced thermal load to the creek.
Hold meetings every three years with member communities to discuss progress toward local surface water management plan implementation, TMDL Implementation Plan goals, other mutual goals and opportunities for partnerships.	8,500			8,500			8,500			8,500	34,000	BCWD ad valorem					√	√	√	√	Annual meeting minutes.
Support beaver activity in the watershed, and utilize pond levelers in beaver dams to maintain habitat and flow to prevent flooding of infrastructure and property.	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	10,000	BCWD ad valorem		√				√	√		Instances of pond levelers and other management practices utilized to support beaver activity while preventing negative flood impacts.
Monitor geomorphology of Brown's Creek and its tributaries on a five-year basis to understand the creek's response to restoration activities and to detect changes within unrestored reaches.			7,500					9,000			16,500	BCWD ad valorem						√		√	Report documenting comparative response of restored and unrestored reaches.
Implement ecological health projects as identified in the Brown's Creek Management Plan - **SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER BROWN'S CREEK MANAGEMENT PLAN (TABLE 81).**	5,000		5,000		5,000		5,000		5,000		25,000	BCWD ad valorem					√	√			Fish barrier removal projects identified and implemented

Implementation Activity	Schedule and Estimated Cost											Potential Funding Sources / Authority	Partners								Measurable Outcomes
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Year Total		Non-Profit/Community Groups /Volunteers	U of M Extension	Businesses/Landowners	School District	Cities/Townships	Counties/SWCDs	Adjacent WMOs	State/Federal Agencies	
Lake Management	**31,000**	**36,000**	**70,000**	**67,000**	**67,000**	**70,000**	**67,000**	**67,000**	**70,000**	**67,000**	**612,000**										
Implement watershed improvements in the relevant lake management plans - **SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER LAKE, POND, AND WETLAND MANAGEMENT PLAN (TABLE 82).**	15,000	15,000	66,000	66,000	66,000	66,000	66,000	66,000	66,000	66,000	558,000	BCWD ad valorem			√		√	√		√	Improved water quality in Long Lake as determined by long-term trend analysis of BCWD's annual water quality monitoring data. Specifically, in-lake phosphorus concentrations will decrease, there will be less frequent nuisance algal blooms, and the transparency of the lake water will increase as determined by secchi depth measurements.
Evaluate options to address high water levels on Long Lake for the existing and projected 100-year rainfall event to provide additional protection for residences with less than adequate freeboard and for the protection of roads (Mid Oaks, 62nd St, & 72nd St inundated for current 100-year event) [2021 Long Lake Flood Reduction Risk Evaluation].	15,000	20,000									35,000	BCWD ad valorem	√				√	√		√	Evaluation report
Inventory surface and groundwater resources for unique and notable features, protection strategies, and integrated findings with community conversations.	1,000	1,000	4,000	1,000	1,000	4,000	1,000	1,000	4,000	1,000	19,000	BCWD ad valorem	√					√		√	Surface and groundwater inventories.
Wetland Management	**14,500**	**14,500**	**15,000**	**15,000**	**15,000**	**15,500**	**15,500**	**15,500**	**16,000**	**16,000**	**152,500**										
Maintain the high-level functions and values of the watershed's fen by managing the vegetation to control the encroachment of invasive vegetation on the wetland and protecting the fen groundwater recharge area.	4,500	4,500	4,500	4,500	4,500	4,500	4,500	4,500	4,500	4,500	45,000	BCWD ad valorem			√	√		√		√	Control of the invasive species within the fen.
Improve the quality of buffers in priority wetlands as identified in the district's wetland functions and values assessment through preservation, restoration, and enhancement projects. - **SEE IMPLEMENTATION ACTIVITIES IDENTIFIED UNDER LAKE, POND, AND WETLAND MANAGEMENT PLAN (TABLE 82).**	7,500	7,500	8,000	8,000	8,000	8,500	8,500	8,500	9,000	9,000	82,500	BCWD ad valorem			√		√	√		√	Improvement in buffer quality.

Implementation Activity	Schedule and Estimated Cost											Potential Funding Sources / Authority	Partners								Measurable Outcomes
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Year Total		Non-Profit/Community Groups /Volunteers	U of M Extension	Businesses/Landowners	School District	Cities/Townships	Counties/SWCDs	Adjacent WMOs	State/Federal Agencies	
Conduct routine evaluations of wetland buffers recorded via the district's regulatory program to ensure the quantity and quality of recorded buffers are being maintained.	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	25,000	BCWD ad valorem					√	√		√	Quantity and quality of recorded buffers remain the same or improve.
Floodplain & Flood Management	**50,000**	**75,000**	**75,000**	**75,000**	**75,000**	**75,000**	**75,000**	**75,000**	**85,000**	**75,000**	**735,000**										
Promote natural asset management by supporting member communities in identifying, valuing, and protecting natural features that provide flood storage and contribute to stormwater management and watershed resilience.	50,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	725,000	BCWD ad valorem			√		√	√	√		Implementation of projects identified by communities/in the Flooding and Floodplain Management Plan (Table 83)
Conduct a GIS analysis intersecting low-lying areas and areas of high groundwater elevations to identify areas susceptible to groundwater flooding.									10,000		10,000	BCWD					√	√	√		Identification of areas susceptible to groundwater flooding
Groundwater Management	**9,000**	**9,000**	**9,000**	**9,000**	**9,000**	**8,000**	**8,000**	**8,000**	**8,000**	**8,000**	**85,000**										
Collaborate with the Minnesota Department of Health to review and resolve differences related to BCWD-identified areas of contamination concern and recharge protection in the Drinking Water Supply Management Areas (DWSMA) and aquifer vulnerability assessments delineated by Stillwater and Oak Park Heights.	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	10,000	BCWD ad valorem								√	Resolution of areas of contamination differences
Continue to participate in the North and East Metro Groundwater Management Area Plan Project Advisory Team by attending meetings.	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	20,000	BCWD ad valorem						√	√	√	Attendance at Advisory Committee meetings and updates to BCWD Board and staff.
Collect groundwater elevation data from residential wells, monitoring wells, high-capacity wells, and near landlocked basins at least annually. Install data recorders to collect more frequent measurements where possible. Share information with Washington County and the Metropolitan Council.	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	50,000	BCWD ad valorem						√	√	√	Annual report on water level trends.
Work with the Minnesota Department of Natural Resources' Observation Well program and others to install deep observation wells near Brown's Creek to monitor bedrock aquifers.	1,000	1,000	1,000	1,000	1,000						5,000	BCWD ad valorem								√	Long-term observation wells.

Implementation Activity	Schedule and Estimated Cost											Potential Funding Sources / Authority	Partners								Measurable Outcomes
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Year Total		Non-Profit/Community Groups /Volunteers	U of M Extension	Businesses/Landowners	School District	Cities/Townships	Counties/SWCDs	Adjacent WMOs	State/Federal Agencies	
Ecological Health	**24,000**	**21,500**	**21,500**	**10,500**	**8,500**	**4,500**	**3,000**	**19,000**	**1,500**	**3,000**	**117,000**										
Create and maintain a unique species database by using shared observation tools that allow community scientists, BCWD, the Minnesota Department of Natural Resources, and other volunteers to pool their observations. Regularly publish updates of the unique species inventory and incorporate findings into education and outreach materials.	9,000	500	500	500	500	500	500	500	500	500	13,500	BCWD ad valorem	√	√		√					Number of unique species and sightings added to the inventory.
Continue surveys for mussels in the lower gorge, particularly upstream of the 2015 unique species inventory survey area. Many riffles in the lower gorge have not been surveyed.			4,000							4,000	8,000	BCWD ad valorem				√					Determine presence of mussels, potential monitoring of mussel population
Review updated data on unique species with the Community Advisory Committee every four years, and provide recommendations to the Board to inform policies, projects, and programs. Share outcomes with member communities to inform land use planning.				7,500				7,500			15,000	BCWD ad valorem					√	√	√		Report to the board on unique species.
Develop a beaver management plan to inform how BCWD can maintain habitat and flow while preventing flooding of infrastructure and property.		5,000	10,000								15,000	BCWD ad valorem	√		√					√	Develop a plan.
Implement native plant community preservation and restoration projects (e.g., Kittentail restoration work with Washington County, Mendel Wetland restoration).	7,000	3,000			7,000	3,000					20,000	BMP Cost Share Program and Ad Valorem	√		√			√			Coordinate volunteer planting days or terrestrial invasive species removal projects including the coordination of disposal activities.
Work with the City of Stillwater and area residents to develop a plan and conduct ongoing monitoring and maintenance of the oak forest found on the west side of Long Lake (identified as a Rare Feature) to evaluate its quality, and if any management activities are needed to ensure its sustainability.	1,500	10,000		1,500			1,500			1,500	16,000	BCWD ad valorem					√	√		√	Develop a plan and report monitoring.

Implementation Activity	Schedule and Estimated Cost											Potential Funding Sources / Authority	Partners								Measurable Outcomes
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Year Total		Non-Profit/Community Groups /Volunteers	U of M Extension	Businesses/Landowners	School District	Cities/Townships	Counties/SWCDs	Adjacent WMOs	State/Federal Agencies	
Coordinate with the Minnesota Department of Natural Resources on future Minnesota Biological Survey (MBS) assessments to share unique systems for data gathering and sharing. For example, addressing the under-ranked MBS site in Grant.	1,500										1,500	BCWD ad valorem								√	Data shared with DNR
Support initiatives by the county and other regional partners on aquatic invasive species (AIS) management.	5,000	3,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	16,000	BCWD ad valorem						√	√	√	Staff support of county and regional partner AIS management initiatives
Conduct ongoing vegetation surveys (every five years) to evaluate community quality and invasive species to provide a more robust dataset that can be used to evaluate trends in plant community composition. A minimum of five wetland and five upland plots should be established for long-term monitoring.			6,000					6,000			12,000	BCWD ad valorem	√								Establish minimum 10 vegetation plots, monitoring reports.
Monitoring & Data Collection	**208,000**	**207,000**	**207,000**	**223,000**	**213,500**	**207,000**	**208,000**	**320,000**	**222,000**	**214,500**	**2,230,000**										
Continue to implement the Brown's Creek and lake baseline monitoring program at existing monitoring stations to track changes in the watershed and provide baseline data for modeling and other uses. Continue to collect data on water quality, continuous discharge data thermal monitoring, and local climatology data. Includes costs for equipment, maintenance and upgrades.	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	2,000,000	BCWD ad valorem						√		√	Board approved annual monitoring reports.
Update the watershed conditions report every five years to assess the impact of BCWD programs on water quality, evaluate trends in watershed conditions (including impacts related to climate change and groundwater-dependent natural resources), and evaluate the need to make course corrections in strategy.				15,000					15,000		30,000	BCWD ad valorem						√			Data and summation of results incorporated into board approved monitoring report.

Implementation Activity	Schedule and Estimated Cost											Potential Funding Sources / Authority	Partners								Measurable Outcomes
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Year Total		Non-Profit/Community Groups /Volunteers	U of M Extension	Businesses/Landowners	School District	Cities/Townships	Counties/SWCDs	Adjacent WMOs	State/Federal Agencies	
Conduct updates to BCWD's hydrologic and hydraulic model to reflect new development activity annually, and incorporate any new information collected by BCWD and/or member communities (e.g., structure inventories) before the next plan update.	7,000	7,000	7,000	7,000	7,000	7,000	7,000	120,000	7,000	7,000	183,000	BCWD ad valorem			√		√				Updated hydrologic and hydraulic model with improved functionality.
Continue identifying cooperative opportunities with landowners to implement stream shading projects through site assessments, landowner outreach, and preparing project development materials.	1,000			1,000			1,000			1,000	4,000	BCWD ad valorem			√						Inventory of outreach and cooperative opportunities
Publish a plain-language watershed story update every five years aligning with the update to the watershed conditions report.					6,500					6,500	13,000	BCWD ad valorem	√								Publication of the watershed story update.
Regulations	**137,000**	**127,000**	**127,000**	**140,000**	**105,000**	**135,000**	**105,000**	**105,000**	**138,000**	**105,000**	**1,224,000**										
Utilize local water management plan review and approval process to ensure implementation of water resource protection standards consistent with or more protective than district standards.	2,000	2,000	2,000	2,000							8,000	BCWD ad valorem					√				Review and comment on local surface water management plans.
Develop practical, non-technical guidance materials for the development and design communities and municipalities that support designing and implementing stormwater management facilities - including green infrastructure - clarifying the permitting process and permit application submittal requirements. Guidance materials may include reference to adaptation necessary for projected climate conditions, with the aim of enhancing system resilience, protecting water quality, and supporting sustainable development across the watershed.		20,000	20,000								40,000	BCWD ad valorem	√		√		√	√	√	√	Development of guidance materials.
Work with member municipalities to incorporate links to permit requirements of BCWD and other watershed districts and watershed management organizations in their jurisdiction on their planning/economic development pages.				15,000					15,000		30,000	BCWD ad valorem					√				Updated municipal permitting pages

Implementation Activity	Schedule and Estimated Cost											Potential Funding Sources / Authority	Partners								Measurable Outcomes
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Year Total		Non-Profit/Community Groups /Volunteers	U of M Extension	Businesses/Landowners	School District	Cities/Townships	Counties/SWCDs	Adjacent WMOs	State/Federal Agencies	
Conduct a regulatory program evaluation by hosting workshops with local partners, surrounding watershed management organizations, developers, and the engineering design community.				15,000					15,000		30,000	BCWD ad valorem					√	√	√	√	Workshop attendance.
Implement the online application portal and electronic payment process.	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	50,000	BCWD ad valorem									Permits processed. Improving number of applications deemed complete on first submission.
Review permit fee structure every five years to ensure they are clearly communicated and equitable.				3,000					3,000		6,000	BCWD ad valorem									Report to the board on the permit fee structure review
Administer the BCWD Permit Program including activities such as: • Assisting applicants with permits and conducting one free consultation meeting early in the project-development process to identify which rules are triggered by the development activity and to discuss permit submittal and applicable regulatory requirements. • Conducting steep slope analysis for permits that will trigger buffer requirements applicable to such landscapes.	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	1,000,000	Permit fees or BCWD ad valorem (for projects with exempt fees)			√						Effective, efficient permitting program.
Conduct a review and revision of BCWD's rules (adopted in 2020) in accordance with Minnesota Statutes section 103D.341. Further evaluate the need to develop and adopt rule language regulating to a simplified performance goal like the Minimal Impact Design Standard.	30,000					30,000					60,000	BCWD ad valorem					√	√	√	√	Board approved Rules and Statement of Need and Reasonableness.
Recreation			**15,000**								**15,000**										
Develop a mapped inventory of current and desired recreation activities and locations with watershed partners.			15,000								15,000	BCWD ad valorem	√		√	√	√	√			Creation of an inventory map

Implementation Activity	Schedule and Estimated Cost											Potential Funding Sources / Authority	Partners								Measurable Outcomes
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Year Total		Non-Profit/Community Groups /Volunteers	U of M Extension	Businesses/Landowners	School District	Cities/Townships	Counties/SWCDs	Adjacent WMOs	State/Federal Agencies	
Education, Outreach, & Stewardship	**139,500**	**143,000**	**144,500**	**144,000**	**184,500**	**149,500**	**146,000**	**149,500**	**151,000**	**150,500**	**1,502,000**										
Coordinate BCWD education and outreach efforts with those of municipalities and other local watershed organizations by continuing to support the East Metro Water Resource Education Program (EMWREP).	32,000	32,000	35,000	35,000	35,000	38,000	38,000	38,000	41,000	41,000	365,000	BCWD ad valorem					√	√			EMWREP events in BCWD.
Administrative contributions to Education and Outreach	65,000	65,000	65,000	65,000	65,000	65,000	65,000	65,000	65,000	65,000	650,000	BCWD ad valorem									
Encourage attendance at training sessions regarding ordinances, development planning strategies, and development techniques that protect natural resources and benefit water quality by providing stipends so that two people from each district community can attend once every three years.			2,000			2,000			2,000		6,000	BCWD ad valorem			√		√				Attendance at training sessions.
Encourage attendance at training sessions regarding stormwater management facility maintenance schedules and procedures and the relation to water quality improvement (e.g., best practices to reduce impacts on water resources from parks and road maintenance activities - road salt application, fertilizer use, irrigation practices) by providing stipends so that two people from each district community can attend once every three years		2,000			2,000			2,000			6,000	BCWD ad valorem			√		√				Attendance at training sessions.
Increase outreach opportunities with the development community by hosting a bi-annual developers meeting/focus group		2,000		2,000		2,000		2,000		2,000	10,000	BCWD ad valorem rem					√				Attendance at meetings/focus groups.
Annually promote BCWD's events and accomplishments through multiple communication channels (e.g., mailings, newsletters, social media) to reach audiences, and share information about topics such as groundwater recharge, wetland and lake aesthetics and natural condition, home and yard care practices, and shoreline and wetland stewardship.	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	100,000	BCWD ad valorem	√	√	√	√	√	√	√	√	Quantity of print and digital media issued. Engagement metrics with digital media.

Implementation Activity	Schedule and Estimated Cost											Potential Funding Sources / Authority	Partners								Measurable Outcomes
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Year Total		Non-Profit/Community Groups /Volunteers	U of M Extension	Businesses/Landowners	School District	Cities/Townships	Counties/SWCDs	Adjacent WMOs	State/Federal Agencies	
Host information sessions on education topics of interest (e.g., estate planning)	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	15,000	BCWD ad valorem						√			Attendance at information sessions.
Establish one permanent information kiosk with permanent and rotating information that is geographically relevant to resources near the kiosk (e.g., chloride impairment in Long Lake).					40,000	500	500	500	500	500	42,500	BCWD ad valorem					√	√		√	Establishment of the kiosk.
Pilot an artist in residency program to creatively engage the public in conversations about their watershed.	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	150,000	BCWD ad valorem						√	√		Attendance at events.
Host an annual event celebrating a watershed resource (e.g., BCWD on the Lake could provide an opportunity for small watercraft to explore a lake and learn about improvements and challenges facing the resource).	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	40,000	BCWD ad valorem					√				Attendance at event.
Recognize community member efforts in water and natural resource protection every two years	500		500		500		500		500		2,500	BCWD ad valorem					√				Record of recognition recipients.
Host annual community watershed event and smaller events to highlight local projects and to engage residents in scientific and recreational activities	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	30,000	BCWD ad valorem	√			√	√				Attendance at events.
Partner with Belwin Conservancy to provide educational content for grade school lessons in the classroom in Stillwater area schools.	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	50,000	BCWD ad valorem				√					Attendance at events.
Partner with Trout Unlimited to provide education content for grade school Trout in the Classroom sessions.	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	10,000	BCWD ad valorem	√			√					Attendance at events.
Participate in school community education events (e.g., DaVinci Fest).	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	10,000	BCWD ad valorem				√					Attendance at events.
Develop a board training plan annually, identifying training opportunities and ongoing learning.	500	500	500	500	500	500	500	500	500	500	5,000	BCWD ad valorem									Record of board training topics and attendance.
Support manager attendance at external trainings (e.g., Water Consortium, Minnesota Watersheds, EMWREP, Lower St. Croix Partnership).	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	10,000	BCWD ad valorem						√	√	√	Attendance at trainings.

Implementation Activity	Schedule and Estimated Cost											Potential Funding Sources / Authority	Partners								Measurable Outcomes
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Year Total		Non-Profit/Community Groups /Volunteers	U of M Extension	Businesses/Landowners	School District	Cities/Townships	Counties/SWCDs	Adjacent WMOs	State/Federal Agencies	
Land Conservation	**77,500**	**77,500**	**75,000**	**75,000**	**75,000**	**95,000**	**75,000**	**75,000**	**75,000**	**95,000**	**795,000**										
Review and revise land protection corridors and priorities to reflect current resource protection needs (e.g., recharge areas, unique resources, headwaters of Brown's Creek, and land adjacent to watershed resources).						20,000					20,000	BCWD ad valorem					√	√		√	Document that identifies land conservation priorities and establishes sound practices for restoration, inspection, and management of lands held by BCWD in conservation easements.
Work with member communities during the Comprehensive Planning process to evaluate protection strategies near and within priority land conservation areas.	2,500	2,500									5,000	BCWD ad valorem	√		√		√	√	√	√	Development of land conservation standards.
Purchase property or easements as land conservation opportunities arise within priority areas	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	500,000	BCWD ad valorem	√		√		√	√	√	√	Increase area of conservation property and easements.
Restore the Brown's Creek Conservation Area by implementing the activities identified in its management plan.	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	250,000	BCWD ad valorem	√			√		√		√	• Preserved and enhanced stream health across the property. • Maintained or improved width to depth ratios. • Maintained or improved bank stability. • Improved floristic quality and richness (diversity) across the property. • Successfully executed prairie restoration with pollinator focus (Unit 1). • Managed invasive species and promoted Oak Woodland-Brushland succession (Units 3, 4, & 7). • Managed invasive species and diversify floristic quality (Units 2, 5, & 6).
Develop and implement management plans for new district-owned easements.										20,000	20,000	BCWD ad valorem	√		√		√	√	√	√	Increase the number of easements found in the BCWD.
Funding	**5,000**	**5,000**	**7,500**	**5,000**	**15,000**	**5,000**	**5,000**	**7,500**	**5,000**	**5,000**	**65,000**										
Actively seek and acquire, as possible, alternate sources of funding for district studies, projects, and capital improvements through grants and other outside monies.	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	50,000	BCWD ad valorem									Value of grants and other monies obtained.

Implementation Activity	Schedule and Estimated Cost											Potential Funding Sources / Authority	Partners								Measurable Outcomes
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Year Total		Non-Profit/Community Groups /Volunteers	U of M Extension	Businesses/Landowners	School District	Cities/Townships	Counties/SWCDs	Adjacent WMOs	State/Federal Agencies	
Evaluate the progress on goals and implementation activities, including the capital improvement program, to determine if amendments to the implementation plan are necessary.			2,500		10,000			2,500			15,000	BCWD ad valorem	√		√		√	√		√	Increase the number of community led projects and/or community demonstration projects that achieve the goals of the plan (e.g., groundwater conservation strategies).
Pollutants of Emerging Concern					**5,000**					**5,000**	**10,000**										
Evaluate the district's role in monitoring, mitigating, and managing the impact of PECs every five years.					2,500					2,500	5,000	BCWD ad valorem		√			√	√	√	√	Report to the board on PEC management.
Conduct a PFAS trend analysis after five years of data has been collected.					2,500					2,500	5,000	BCWD ad valorem		√			√	√	√	√	Report to the board on PEC trend analysis.
Total	**1,590,250**	**1,857,750**	**1,568,000**	**1,706,000**	**1,665,250**	**1,840,250**	**1,664,500**	**1,693,000**	**1,662,000**	**1,781,500**	**17,028,500**										

Table 81. Brown's Creek Management Plan

Implementation Activities (see Figures 4 and 5 for a map of reaches for implementation)	**Segment Id**	**Estimated Cost**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**
Thermal Improvements / Rate Control Many of these projects are intended to slow overland flow, promote infiltration, and reduce runoff temperatures as water moves across the landscape. These improvements provide distributed rate control by reducing peak flow rates, while also stabilizing soils, minimizing erosion and sediment transport, and lowering thermal loads to the creek.												
Improve buffer on 131 feet upstream of Wolf Marine	1	$5,000			$1,250	$3,750						
Improve buffer on 392 feet upstream of Wolf Marine.	2	$10,000			$2,500	$7,500						
Improve buffer on 325 feet upstream of County Road 5.	3	$5,000			$1,250	$3,750						
Improve buffer on 653 feet on Schubert property.	4	$20,000			$5,000	$15,000						
Improve buffer on 1,800 feet on Oak Glen LLC and Minnesota Department of Natural Resources	6	$20,000	$5,000	$15,000								
Stream geomorphology + thermal buffer improvements (e.g., Millbrook Phase II) Project Development – Outreach with the HOA, development of concept plans and renderings for landowner engagement. Improve bank stabilization (i.e., Brown's Creek Cove Restoration).	10	$57,000		$14,250	$42,750							
Removal of buckthorn at the road crossing.	11	$3,000		$750	$2,250							
Improve buffer 950 feet upstream of Hwy 96 (Mendel Wetland)	12	$120,000								$30,000	$90,000	
Improve buffer 1,045 feet on Costa Lorraine M Properties (Mendel Wetland).	13	$190,000									$47,500	$142,500
Improve buffer along approximately 1,000 feet on Grogan property.	14	$15,000							$15,000			
Explore feasibility of using property adjacent to the Oak Glen Golf Course for the location of a large-scale rock crib (as identified in McKusick Road Stormwater Feasibility Analysis), as well as design and construct the rock crib.	NA	$200,000					$50,000	$150,000				
Explore options for addressing thermal loads from the drainage area in Zone D from the McKusick Road Stormwater Feasibility Analysis.	NA	$40,000								$40,000		
Evaluate options to treat stormwater contributions to Brown's Creek and/or Lake McKusick from gate valve in the storm sewer along Neal Avenue (e.g., pre-treatment, split flows between Brown's Creek, Oak Glen Golf Course, and Lake McKusick).	NA	$80,000	$30,000	$50,000								
Subtotal		**$765,000**	**$35,000**	**$80,000**	**$55,000**	**$30,000**	**$50,000**	**$150,000**	**$15,000**	**$70,000**	**$137,500**	**$142,500**
TSS Load Reduction Projects (Downstream of Manning Avenue)												
Evaluate the need for rate control and water quality treatment to address discharge from the ravine downstream of Oak Glen Golf Course cart washing facility.		$15,000					$15,000					
Re-evaluate the need for rate control and gully stabilization at Oak Glen Golf Course.		$ 2,000					$2,000					
Long Lake tributary from 400 feet upstream of south central tributary to Boutwell Road: ~ 1,110 LF; canopy thinning and removal of woody invasives; grade control to address remaining incision and reconnect floodplain; restore hydrology in wetland below Boutwell Road.		$217,000	$54,250	$162,750								
Boutwell Road pond (upstream end) to County Road 12: ~ 1,800 LF; limited inputs, mostly canopy thinning and removal of woody invasives; floodplain connectivity and grade control.		$215,000					$53,750	$161,250				
Implement the recommendations of tributary resource assessment by addressing improvements needed in the Long Lake tributary, which is experiencing channel incision and bank erosion below Boutwell Road.		$20,000		$20,000								
Subtotal		**$469,000**	**$54,250**	**$182,750**			**$70,750**	**$161,250**				
Ecological Health Projects												
Fish barrier removal projects based on walk through assessment.		$25,000	$5,000		$5,000		$5,000		$5,000		$5,000	
Subtotal		**$25,000**	**$5,000**		**$5,000**		**$5,000**		**$5,000**		**$5,000**	

Figure 4. Stream Geomorphology and Thermal Buffer Improvements 2012 (Page 1)

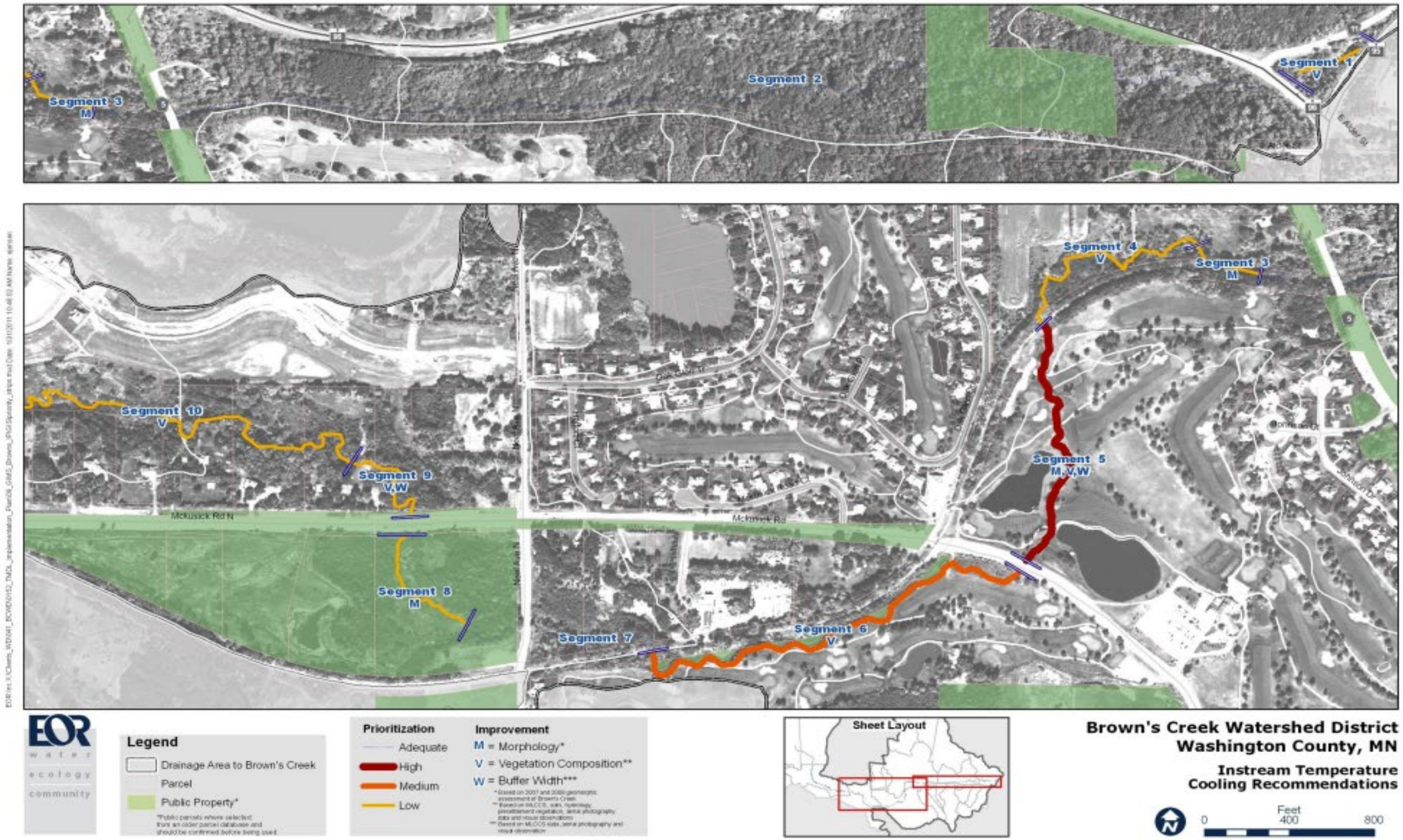


Figure 5. Stream Geomorphology and Thermal Buffer Improvements 2012 (Page 2)

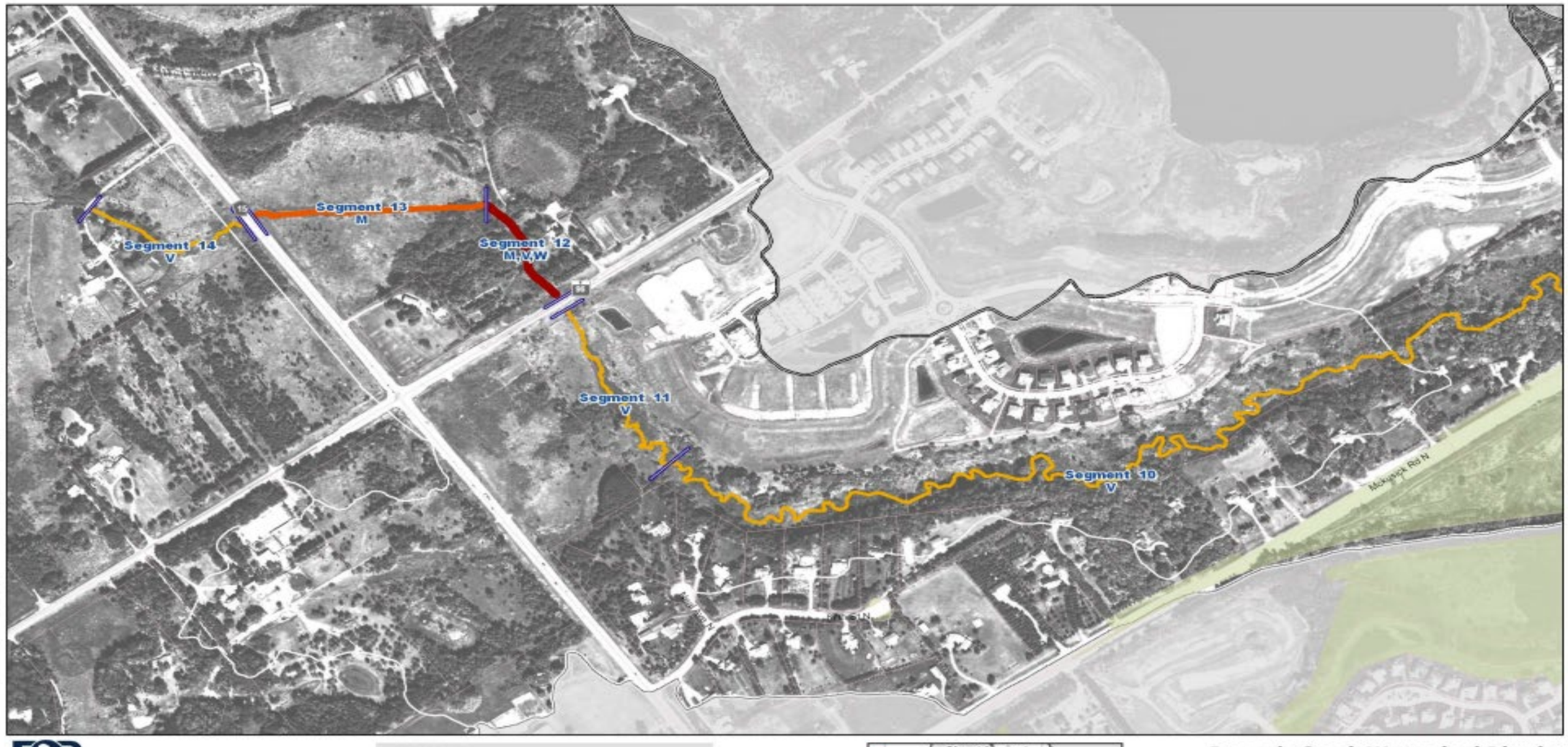


Table 82. Lake, Pond, and Wetland Management Plans

Implementation Activities	Estimated Cost	Frequency	Lakes										Ponds								Specific Timing Components
			Bass Lake East	Benz Lake	Long Lake	Lynch Lake North	Lynch Lake South	Masterman Lake	Plaisted Lake	South School Section Lake	Wood Pile Lake	Bass Lake West	Brewers Pond	Goggins Lake	Heifort Pond	July Avenue Pond	Kismet Basins	Pat Lake	North School Section	Sinnit's Pond	
			B+	B	B	D	B	B+	B+	C	A	B-	C-	C	D+	D	B+	B-	B+	B	
Data Collection/Education																					
Conduct routine shoreline surveys using the "Score Your Shore" assessment process, compare results to previous surveys, and provide landowners with feedback on changes observed along their shoreline and recommended actions to improve shoreline quality.	$500/year	2X	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	Send them the "Score Your Shore" report. Let them know how they are doing. (18 total/six per year) - 1st assessment in first three years; do it again in the last three years.
Subwatershed Assessment/Evaluate pollutant loading to the waterbodies.	$15,000/year	1X				●	●			2028			2026	●	2027	●					
Protection Strategies																					
Implement the following protection strategies as opportunities arise: • shoreline management • stormwater best management practices in riparian areas • agricultural conservation practices	$20,000/year		●	●	●			●	●		●	●					●	●	●	●	
Restoration Strategies																					
Implement the following restoration strategies as opportunities arise: • chloride management • nutrient reduction • wetland restoration • sediment basins • grassed waterways	$20,000/year					●	●			●			●	●	●	●					
Climate Resilience/Flood Protection																					
Provide technical support to residents whose homes or structures abut or are within the critical flood event footprint by determining the level of protection needed, providing permitting assistance.	$2,500/year	1X			●						●										$5,000 per house - Three homes on Long Lake and Two homes on Wood Pile.

Implementation Activities	Estimated Cost	Frequency	Lakes										Ponds								Specific Timing Components
			Bass Lake East	Benz Lake	Long Lake	Lynch Lake North	Lynch Lake South	Masterman Lake	Plaisted Lake	South School Section Lake	Wood Pile Lake	Bass Lake West	Brewers Pond	Goggins Lake	Heifort Pond	July Avenue Pond	Kismet Basins	Pat Lake	North School Section	Sinnit's Pond	
			B+	B	B	D	B	B+	B+	C	A	B-	C-	C	D+	D	B+	B-	B+	B	
Provide technical support to residents whose homes or structures are within 16.5 feet of the High-Water Level (HWL).	$250/year	1X		●					●	●	●			●		●	●				
Provide technical support to residents with a well entirely within the critical flood event footprint.	$250/year	1X												●							
Work with member communities to address roads inundated by the critical event HWL.	NA	1X						●	●	●	●			●		●	●				Address with the permitting program. Find out more during the community meetings.
Aquatic Vegetation Management																					
Engage with new residents through welcome packets, workshops, and community events to increase understanding of shallow lake dynamics, the ecological role of aquatic plants, and concerns about plant management.	$1,000/year	2X	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
Conduct aquatic vegetation point-intercept surveys every three to five years to monitor curly-leaf pondweed treatment efficacy, plant community composition and trends, and providing data to guide future management actions.	$6000/year	3X							●	●				●							2025 costs - South School, Goggins, Long, Benz (last completed in 2022) - $4,500, $3,700, $3,000 - Assume $3K each and assume every five years
Provide outreach and technical support to landowners with rare species present on or adjacent to their lakeshore.	$500/year		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				

Table 83. Flooding and Floodplain Management Plan

Implementation Activities	Estimated Cost	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Data Collection/Education											
Study the use of active management through approaches such as smart outlets (e.g., on Long Lake), implement this technology if cost-beneficial.	TBD										
Develop a decay curve for infiltration basins with an associated maintenance protocol.	TBD										
Conduct flood hazard assessments and make the information available to local partners to support local decision-making. This includes involvement in local community comprehensive planning processes.	TBD										
Develop a community flood reporting campaign to ground-truth the H&H model and raise awareness about flooding.	TBD										
Conduct a flood sensitivity analysis for a 200-year impact on the freeboard.	TBD										
Protection Strategies											
Implement reuse within the Marketplace drainage area.	TBD										
Maintain the flood-risk mitigation functionality of Kismet basin and Trout-Habitat Preservation Project, and consider enhancing such capacity.	TBD										
Partner with the City of Stillwater in the implementation of recommendations made in the Marylane Avenue North Drainage Easement Assessment.	TBD										
Hugo											
Lynch Road - Subject to flooding under smaller events. No specific comment/request from the city.	TBD										
Lynch Lake - Residential structure subject to flooding under projected conditions. No specific comment/request from the city.	TBD										
July Avenue experiencing flooding for the 25-year event and some structures projected to experience flooding for the 100-year event. No specific comment/request from the city.	TBD										
Keystone Avenue projected to flood for the 25-year event (south of Withrow Ballroom). No specific comment/request from the city.	TBD										
120th flooding.	TBD										
124th Street isolated depression that has potential flood impacts to two residential structures.	TBD										
Lake Elmo											
Manning Avenue south of Hwy 36 managed by the City of Lake Elmo. There has been flooding in this area.	TBD										
Road reconstruction on Linden Avenue scheduled for 2033.	TBD										
Flooding of County Road 10.	TBD										
Grant											
Residential flooding due to flooding of the wetland north of Dellwood Road (Brabender residence). Karen noted she has gotten calls about flooding in the past. Paul noted this is a landlocked basin.	TBD										
Intersection of 88th and Dellwood near Lake Masterman. This gravel road was in rough shape after the flooding of 2018/2019 (i.e., rutting). City received a lot of complaints.	TBD										
McKusick Road North west of Lofton Avenue North, hasn't experienced any flooding in the last 10-15 years. Is this an area that was an issue prior to this time period?	TBD										
Flooding along Kimbro Avenue North, north of County Road 12 near Grant Pond.	TBD										
Subtotal		**50,000**	**75,000**	**75,000**	**75,000**	**75,000**	**75,000**	**75,000**	**75,000**	**75,000**	**75,000**

TBD: Level of funding is not provided due to the large number of potential projects available. Expenditures to be determined as any potential projects are considered for implementation.

Table 84. Implementation Plan – Lower Priority

Implementation Activity	Schedule And Estimated Cost											Potential Funding Sources or Authority	Partners								Measurable Outcomes
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Year Total		Non-Profit/ Community Groups /Volunteers	U of M Extension	Businesses/ Landowners	School District	Cities/Townships	Counties/SWCDs	Adjacent WMOs	State/Federal Agencies	
Stormwater Management																					
Develop communication materials to convey the benefits of routine maintenance and operation of facilities and the consequences if these are not met.	9,000										9,000	BCWD ad valorem									Development of communication materials
Further investigate heavy metals in the north branch drainage area and the direct drainage to the diversion structure, especially focused on possible contributions of contamination from the historic railroad.			60,000								60,000	BCWD ad valorem					√	√			Report summarizing heavy metal investigation results.
Further investigate heavy metals at the Long Lake inlet and opportunities for erosion control within the wetland adjacent to it.	10,000	10,000	10,000	10,000							40,000	BCWD ad valorem					√	√			Report summarizing heavy metal investigation results.
Erosion Prevention & Sediment Control																					
Determine sediment and chloride loading rates from the gravel roads and parking lots within the district and work with municipalities and townships to address the issue.			10,000								10,000	BCWD ad valorem					√	√			Sediment and chloride loading rates.
Stream Management																					
Continue to conduct *E. coli* source investigation to evaluate bacteria sources to Brown's Creek and to guide best management practice selection.	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	50,000	BCWD ad valorem					√	√		√	*E.coli* counts
Wetland Management																					
Select two to five sentinel wetlands to conduct five-year monitoring for land use and climate change implications and assess ten different wetlands on a bi-annual basis to expand the function and value assessment.	10,000		10,000		10,000	5,000	10,000		10,000	5,000	60,000	BCWD ad valorem						√		√	Completion of monitoring assessments
Evaluate the feasibility of creating a wetland bank in the watershed.			25,000								25,000	BCWD ad valorem						√		√	Feasibility report

Implementation Activity	Schedule And Estimated Cost											Potential Funding Sources or Authority	Partners								Measurable Outcomes
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Year Total		Non-Profit/ Community Groups /Volunteers	U of M Extension	Businesses/ Landowners	School District	Cities/Townships	Counties/SWCDs	Adjacent WMOs	State/Federal Agencies	
Restore wetland on Mendel Road tributary with landowner collaboration.								50,000	100,000	20,000	170,000	BCWD ad valorem						√		√	Completion of wetland restoration project
Groundwater Management																					
Review water appropriation permits for potential impacts to groundwater levels in other wells, and groundwater flow to groundwater dependent natural resources to provide input on the DNR's review process.	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	10,000	BCWD ad valorem						√		√	Well, flow, and groundwater dependent natural resource levels.
Address issues related to modern water utility management by leading the development of an integrated water utility roadmap with financial support from District communities. This roadmap will explore opportunities to break down the silos among water, wastewater, and stormwater to create a more sustainable water future. It will establish a framework for member communities so that as opportunities to upgrade or repair systems arise, utilities are not only examining existing needs but making changes to modernize and make systems more resilient.	10,000	10,000									20,000	BCWD ad valorem					√				Development of a water utility roadmap
Conduct groundwater monitoring and research aligning with the Minnesota Department of Health, Washington County, and Metropolitan Council priorities. Opportunities include but are not limited to: • Groundwater elevation data in Brown's Creek reaches • Chemistry monitoring near groundwater-dependent natural resources • Dye tracing • Inventorying seepage points • Pumping tests	12,500	12,500	12,500	12,500	12,500	12,500	12,500	12,500	12,500	12,500	125,000	BCWD ad valorem						√		√	Sharing monitoring and research with partners

Implementation Activity	Schedule And Estimated Cost											Potential Funding Sources or Authority	Partners								Measurable Outcomes
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	10-Year Total		Non-Profit/ Community Groups /Volunteers	U of M Extension	Businesses/ Landowners	School District	Cities/Townships	Counties/SWCDs	Adjacent WMOs	State/Federal Agencies	
Ecological Health																					
Lead a tour of high-quality rural wetland, pond, and lake ecological resources with the Minnesota Department of Natural Resources, Washington County, Washington Conservation District, communities (including staff and city councilors and officials), and other stakeholders to increase support for these features in regional planning and conservation activities.	6,000										6,000	BCWD ad valorem	√	√	√		√	√	√	√	Lead a tour
Monitoring & Data Collection																					
Develop comprehensive database for storm sewer and structures located in the watershed by compiling what has been surveyed to date, coordinating with member communities, and evaluating the need to supplement with future structure inventory surveys. Require, as a condition of permitted projects, the submittal of as-built electronic GIS files to keep the database up to date with new development.	8,000	8,000	8,000	8,000	20,000	8,000	8,000	8,000	8,000	20,000	104,000	BCWD ad valorem					√	√		√	Development of the database
Totals:	**$71,500**	**$46,500**	**$141,500**	**$36,500**	**$48,500**	**$31,500**	**$36,500**	**$76,500**	**$136,500**	**$63,500**	**$689,000**										

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