Pollutants of Emerging Concern

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 whose 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: PFAS, Microplastics, 6PPD-Quinone, and PAHs.

Sub-Issues

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 the BCWD to be informed to the best of its ability to take actions that are appropriate for the Districts scale and level of responsibility.

Collaborating with Partners
The complexity and scale of pollutants of emerging concern extends far beyond the boundaries of the BCWD's jurisdiction and therefore puts federal agencies such as the EPA, and state agencies such as MPCA and MPH 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

Instructions

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Focus on reviewing the Implementation Items below

SUB-ISSUE:	Improving Understanding of Pollutants of Emerging Concern				Place dots in this column
POLICY:	The 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.				
GOALS			IMPLEMENTATION ITEM		
A	Stay informed about pollutants of emerging concern (PECs) to assess the district's role in monitoring, mitigating, and managing their impacts on water quality and ecosystem health.	New	1	Provide a bi-annual update summary on the state of science on pollutants of emerging concern to the Board (i.e., 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:	Collaboration with Partners				
POLICY:	The BCWD will collaborate with state agencies.				
GOALS			IMPLEMENTATION ITEM		
A	Contribute monitoring data to partners	New	1	Incorporate PFAS sampling into stream and lake monitoring program.	
			2	Conduct a PFAS trend analysis after 5 years of data has been collected.	

Additional Comments/Questions

Using a sticky note, add comments, questions, suggested revisions, or additional implementation items for us to consider

Recreation

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.

Sub-Issues

Recreational Opportunities

The Brown's Creek Watershed District has a number of resources designated for recreation use and there is interest in greater recreation opportunities throughout the watershed. Improving water quality and enhancing wildlife habitat will increase the recreational value of the resources for the public's use.

In order 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 have 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

Responsible Use

As opportunities to recreate in the BCWD 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 Property, people are exposed to what healthy ecosystems look like which may spark behavioral change to support the District's work.

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Focus on reviewing the Implementation Items below

SUB-ISSUE:	Recreational Opportunities			Place dots in this column
POLICY:	BCWD supports access to natural areas for a diversity of outdoor recreation activities throughout the watershed for all of its residents and visitors.			
GOALS		IMPLEMENTATION ITEM		
A	Enhance passive recreation opportunities through improvements to water resources	Modified	1 Implement BMPs, shoreline improvements and other management recommendations found in Lake Management Plans.	
B	Develop and leverage partnerships which increase awareness and access to natural resources recreation in BCWD		1 Addressed through administration of the East Metro Water Resource Education Program (EMWREP).	
		New	2 Develop a mapped inventory of current and desired recreation activities and locations with watershed partners.	
SUB-ISSUE:	Responsible Use			
POLICY:	The BCWD is committed to playing a strong leadership role in creating a culture that encourages environmental stewardship			
GOALS		IMPLEMENTATION ITEM		
A	Improve public knowledge and appreciation for the District'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 Conduct BMP installation and implementation training workshops to provide citizens with the knowledge to install and implement BMPs on their properties. Programs could include workshops on topics such as rain barrels, rain gardens, shoreline restoration, and fertilizer use, and native vegetation buffer establishment and maintenance.	
			3 Utilize the cost-share program to assist citizens in best management practice installation.	
B	Protect areas of investment from recreation-related degradation	New	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, i.e. erosion from foot traffic.	
			2 Meet annually with municipalities to review recreation-related issues to understand impacts and develop responses to emerging issues	
C	Promote opportunities for interaction with high-quality naturalized environments.		1 Prioritize projects/watershed resources which add the co-benefit of improving resources in areas of the watershed not previously served by improvements.	
			2 Host an annual event celebrating a watershed resource. i.e. District on the Lake could provide an opportunity for small watercraft to explore a lake and learn about improvements and challenges facing the resource.	
			3 Support ongoing CAC summer series of educational events.	

Additional Comments/Questions

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Land Conservation

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.

Sub-Issues

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..

Instructions

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Focus on reviewing the Implementation Items below

SUB-ISSUE:	Protection of natural areas, connections between natural areas, and groundwater recharge zones				Place dots in this column
POLICY:	The BCWD will work with communities, agencies, HOAs, developers, residents, and non-profits, as appropriate, to protect land throughout the District 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 ITEM		
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.	Modified	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 District's resources).	
			2	Work with member communities to set standards for development near and within the identified land protection corridors as part of the regulatory program.	
			3	Purchase property or easements as land conservation opportunities arise within priority areas.	
			4	Partner to conduct estate planning workshops and connect interested residents to land trusts .	
			5	Lead a tour of high-quality wetland, pond, and lake ecological resources with DNR, Washington County, Washington Conservation District, and other stakeholders to support of these features in regional planning and conservation activities.	
B	Preserve and restore District owned easements	New	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.	

Additional Comments/Questions

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Ecological Health

Issue Statement

The restoration and protection of the District's surface water resources requires a healthy watershed where the natural cover supports hydrologic and geomorphic processes, habitat of sufficient size and quality to support native upland, aquatic, and riparian species, and water quality that supports healthy biological communities. The 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.

Sub-Issues

Sustaining Healthy Ecosystems
Identifying and protecting healthy ecosystems is a cost-effective approach to sustainable watershed management. The BCWD 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, the BCWD is maintaining the services they provide for future generations.

Protect and Restore the Function of Upland Areas
The BCWD 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 is a reflection of the land use in the rural portions of the watershed, resulting in more intact upland areas. The BCWD intends to protect and enhance these upland areas in order to maximize the ecosystem services (i.e., soil health improvements, filtration, groundwater recharge, wildlife habitat, rate control) provided by this part of the landscape.

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

Instructions

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SUB-ISSUE:	**Sustaining Healthy Ecosystems**				
POLICY:	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 ITEM		
A	Continue to develop the Unique Species Inventory by identifying plants and animals in a variety of habitats.	New	1	Create and maintain a Unique Species database that includes sightings by the District, CAC, and other volunteers.	
			2	Create and maintain a Unique Species map that identifies sightings from the database as well as information contained in other data sets (i.e., MNDNR, eBird, iNaturalist).	
			3	Create an iNaturalist project for the Brown's Creek watershed that allows citizen scientists to pool their observations with others in the District.	
			4	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.	
			5	Compile a herptile record database developed from available records and initiate citizen volunteer Amphibian and Reptile Survey.	
B	Use the Unique Species Inventory to evaluate impacts to watershed management.		1	Determine how the presence of unique species informs policies, projects, and programs (i.e., are there design modifications needed to protect Blanding's turtles present in the northern portion of the watershed).	
			2	Share information with member communities and evaluate impacts to landuse policies.	
			3	Conduct fish barrier assessment of Brown's Creek (i.e. Oak Glen Golf Course and Millbrook where a large beaver dam now exists).	
			4	Incorporate additional fish refugia into stream projects.	
			5	Publish the Unique Species Inventory and explore other ways to tell the story about the plants and animals living in the watershed.	
SUB-ISSUE:	Protect and Restore the Function of Upland Areas				
POLICY:	The BCWD is committed to maintaining the ecological integrity and connectivity of intact ecosystems.				
GOALS			IMPLEMENTATION ITEM		
A	Reduce non-native plant cover and replace it with high-value and functional native landscaping	New	1	Continue to track unique and rare species and submit sightings to MNDNR.	
		Modified	2	Implement native plant community preservation and restoration projects (i.e., Kittentail restoration work with MNDNR, Mendel Wetland restoration).	
			3	Enhance the management of the BCWD'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)	
			4	Lead a tour of high-quality wetland, pond, and lake ecological resources with DNR, Washington County, Washington Conservation District, and other stakeholders to increase support for these features in regional planning and conservation activities.	
			5	Work with the City of Stillwater and area residents to conduct on-going monitoring 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.	
		New	6	Improve ecosystem services by creating a program that focuses on restoring forests, wetlands, and grasslands to help reduce the impacts of climate change, such as flooding, heat islands, and soil erosion.	
			7	Work with municipalities to establish tree preservation goals and requirements.	
			8	Work with landowners to diversify their woodlands through forest management plans.	
			9	Develop an incentive program to assist property owners with the conversion of non-native to native species.	
			10	Work with HOAs to pilot native species planting in their landscape management processes.	
			11	Update the District's rules to provide greater incentive to incorporate and maintain native plantings as a condition of obtaining a permit.	
			12	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:	Invasive Species Management				
POLICY:	The District takes an active role in preventing the spread of invasive species through education, partnerships, monitoring, and invasive species management projects.				
GOALS			IMPLEMENTATION ITEM		
A	Initiate and support aquatic invasive species (AIS) management projects on private and public lands where connected to water quality management and/or co-benefit towards other beneficial goals.	Modified	1	Continue to monitor aquatic invasive species and implement controls	
			2	Record the location of invasive species and implement control measures.	
			3	Address aquatic invasive species management by providing education and outreach to residents and individuals recreating in the watershed. For example, bait disposal and discouraging pet release.	
			4	Utilize the cost-share program to assist with invasive species management.	
		New	5	Support initiatives by the County and other regional partners on AIS management.	
B	Initiate and support terrestrial invasive species management projects on private and public lands where 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 5 wetland and 5 upland plots should be established for long-term monitoring.	
		New	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).	
			3	Host annual Buckthorn removal community event	

Additional Comments/Questions

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Rules and Regulations

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, among others, conservation of water for public uses; 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.

Sub-Issues

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.

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

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 (see section 4.1.4)

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Focus on reviewing the Implementation Items below

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SUB-ISSUE:	Coordination				
POLICY:	The BCWD will coordinate District rules with other local, state and federal regulatory requirements				
Goal			Implementation Item		
A	Coordinate with District partners early in the permit application stage.	Modified	1	Work with the development community 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.	
		New	3	Evaluate options for regional solutions with the development community and municipalities	
			4	Develop practical guidance materials for the development community and municipalities that support the design and implementation of stormwater management facilities—including green infrastructure—adapted to changing climate conditions, with the aim of enhancing system resilience, protecting water quality, and supporting sustainable development across the watershed	
B	Ensure consistency of rules and use in partnership with surrounding watershed management organizations and interested parties.	Modified	1	Meet every 2 years through the watershed consortium 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 the BCWD Rules and other municipal/agency regulatory programs .		1	Work with member municipalities to incorporate links to permit requirements of the BCWD and other WDs/WMOs in their jurisdiction on their planning/economic development pages.	
			2	Share plain-language information and FAQs about the Rules through the District's website, annual reports, and partnership with EMWREP.	
SUB-ISSUE:	Permit Program				
POLICY:	The BCWD strives to maintain a clear and effective permit program				
Goal			Implementation Item		
A	Conduct five-year evaluations of the District's permitting program.	New	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	Assess the viability of an application portal and electronic payment process.	
			2	Review permit fee structure every five years to ensure they are clearly communicated and equitable	
			3	Develop and implement a process for follow-up on closed projects, additional inspections, and enforcement	
C	Provide technical and non-technical guidance to developers, the design community and Homeowners Associations to streamline the permitting process.		1	Administer the BCWD Permit Program.	
			2	Assist applicants with permits and conduct a single consultation meeting that is free-of-charge early in the preliminary project-development process to identify which rules are triggered by the development activity and to discuss permit submittal and applicable regulatory requirements.	
			3	Conduct steep slope analysis for those permits that will trigger buffer requirements applicable to such landscapes.	
			4	Develop non-technical (plain language) guidance clarifying the permitting process and permit application submittal requirements.	
			5	Develop technical guidance so the design community has a better understanding of the BCWD rule requirements.	
		New	6	Improve "hand-off" from developers and HOAs by providing HOA guidance on the website, including more information on obligations, processes, and resources.	
			7	Increase outreach opportunities with the development community by hosting an annual developers breakfast.	
			8	Host ongoing engineering workshops and explore the development of a course that meets the continuing education requirements outlined in MN Statute 326.107.	
D	Collaborate with partners to ensure that proper BMP construction, and erosion and sediment control techniques are being implemented		1	Maintain BMP inspection database and permit inspection database	
E	Collaborate with District partners to improve the enforcement process for noncompliance with BCWD Rules.		1	Conduct boundary review and revision along RCWD, CMSCWD and MSCWMO by 2020 to ensure consistent application of water resource protections.	
			2	Meet with District partners to discuss existing enforcement methods and the need for additional measures.	
SUB-ISSUE:	Rule Language				
POLICY:	The BCWD will focus on keeping rules clear and up to date with revisions as needed				
Goal			Implementation Item		
A	Review the rules every five years to identify the need for revisions.		1	Undertake a rulemaking in accordance with Minnesota Statutes section 103D.341 to develop changes to the present BCWD rules (adopted in 2020)	
			2	Continually track recommendations for improved usability, efficacy, and application of the BCWD Rules and evaluate the need to revise the Rules every five years.	
B	Regulate in order to provide a consistent level of resource protection for redevelopment projects by [year].		1	Undertake a rulemaking in accordance with Minnesota Statutes section 103D.341 to develop changes to the present BCWD rules (adopted in 2020)	
C	Adopt those portions of the MIDS Community Assistance Package that serve to streamline the BCWD's permitting process without jeopardizing the District's resource protection goals by [year].		1	Further evaluate the need to develop and adopt rule language regulating to a simplified performance goal similar to the Minimal Impact Design Standard (MIDS).	

Additional Comments/Questions

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Monitoring and Data Collections

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 information 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. The BCWD should ensure that collected data and assessments are in a format that is understandable to the public.

Sub-Issues

Monitoring Needs
On-going monitoring and research data are needed to understand the watershed, evaluate issues and concerns, determine watershed management needs and track performance towards meeting goals.

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.

Instructions

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SUB-ISSUE:	Monitoring Needs				Place dots in this column
POLICY:	The District 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 ITEM		
A	Collect and analyze valuable information about the District's water resources and natural resources	New	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 data thermal monitoring, and local climatology data. Includes costs for equipment, maintenance and upgrades.	
			2	Add PFAS to the monitoring program – monitor for PFAS in lakes and streams for at least 5 years to support a trend analysis.	
			3	Continue chloride monitoring on lakes likely to be impacted by salt use (including Long Lake, others?)	
			4	Monitor the McKusick Wetland/Brown's Creek connection for flow, temperature, and sediment load.	
		Modified	5	Develop comprehensive database for storm sewer and structures located in the District 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.	
			6	Conduct routine drone flight assessments of the Brown's Creek corridor upstream of Highway 96 to monitor beaver dams and changes to the system. This stream reach is difficult to traverse by foot due to the extent of wetland complexes adjacent to the stream and soft wetland soils.	
			7	Conduct a source assessment to identify probable cause of high dissolved phosphorus concentration in Brown's Creek.	
			8	Conduct sediment cores on Long Lake and South School Section Lake to determine the historic characteristics of the lake.	
			9	Perform macrophyte surveys on lakes lacking data (including lakes).	
			10	Consider modifying sampling on Brown's Creek to match Metropolitan Council's WOMP program using unbiased sampling regimes as opposed to storm/event-based sampling to allow for more rigorous statistical trend analysis.	
			11	(PLACEHOLDER FOR MONITORING RECOMMENDATIONS FROM POLLUTANT LOADING EVALUATION AT THE DIVERSION STRUCTURE.)	
B	Conduct an assessment of the monitoring data to evaluate how well it is being collected and evaluated.		1	Addressed through administration of the BCWD Baseline Monitoring Program.	
			2	Update the watershed conditions report every 5 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.	
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 to provide member communities with reliable data to inform planning, project development, and decision-making.	New	1	Conduct biennial updates to District's Hydrologic & 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 lakes to characterize internal and external pollutant loads.	
D	Monitor and understand the behaviors, practices, and perceptions of residents within the watershed in order 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 regular surveys and field observations to assess public engagement in watershed-friendly practices (e.g., rain gardens, fertilizer use, shoreline management).	
			2	Continue evaluating chloride use and identifying salt use reduction strategies to limit chloride loading.	
			3	Continue identifying cooperative opportunities with landowners to implement stream shading projects.	
			4	Continue implementation of the Enhanced Stakeholder Engagement process.	
SUB-ISSUE:	Accessibility of Monitoring and Research Data				
POLICY:	The District values information sharing among agencies and stakeholder groups and will make format and content of its data resources accessible.				
GOALS			IMPLEMENTATION ITEM		
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 CIP Program.	
B	Make District BMP information, collected data and analysis available to everyone to inform greater adoption, evaluate long-term performance.	New	1	Provide District collected data and analysis through the District's 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 Washington County.	
			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, 2027		1	Audit and make necessary updates to meet accessibility compliance guidelines.	

Additional Comments/Questions

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Erosion Prevention and Sediment Control

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 reservoirs and reductions in stormwater infiltration by sealing permeable soils.

Sub-Issues

Existing and Anticipated Erosion Problems
Excessive erosion near the District's 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 the quality of the District's waters.

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. Special attention should be placed in monitoring and enforcing topsoil and soil compaction mitigation regulations. 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.

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 practice 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.

Instructions

Using the sticky dots provided, place a dot next to the implementation item based on your interest in seeing the action reflected in the Implementation Plan. Place dots based on the following color-coding scheme

- Remove from the Plan, this action doesn't belong in the Plan
- Needs further discussion, I'm unsure about this action
- This is a great action, definitely keep this in the Plan

Not all actions need a dot! If you are fine with the action, we will treat any actions without dots as items which don't require further discussion and will incorporate these into the Implementation Plan

Focus on reviewing the Implementation Items below

					Place dots in this column
SUB-ISSUE:	Existing and Anticipated Erosion Problems				
POLICY:	Protect the District's water bodies from the impacts of sedimentation, excessive streambank and shoreline erosion, and adjacent upland erosion.				
GOALS			IMPLEMENTATION ITEM		
A	Provide long-term stabilization of the five highest priority erosion problem areas through stormwater management and stabilization projects including the establishment of native vegetation.	New	1	Conduct annual stream channel assessments from the headwaters to the St. Croix River to identify in-stream or near channel instabilities and active headcutting. Conduct Alternating drone flights upstream of Manning Avenue where large wetland complexes occur and foot surveys downstream of Manning Avenue, including the three tributaries south of Brown's Creek State Trail (South Central, Zephyr, and Long Lake tributaries).	
			2	Identify shoreline restoration opportunities. For example, using the Score Your Shore tool.	
			3	Utilize the District's cost-share program to assist in the installation of erosion and sedimentation control practices in highest priority erosion problem areas.	
			4	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.	
			5	Support MNDNR in addressing Brown's Creek bluff instability projects and 5-year assessment.	
			6	Determine the load reduction that could be achieved through soil restoration projects	
SUB-ISSUE:	Development Related Land Disturbance				
POLICY:	The BCWD requires erosion and sediment controls in areas disturbed by development and construction related activities.				
GOALS			IMPLEMENTATION ITEM		
A	Erosion and sediment control practices meet required performance standards during construction.	New	1	Addressed through administration of the BCWD regulatory standards and criteria.	
			2	Incentivize natural landscapes as a stormwater BMP in new development to meet permit requirements.	
SUB-ISSUE:	Soil Health Practices				
POLICY:	The 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 ITEM		
A	Limit additional disturbance to soils in areas identified as a higher risk for erosion.	New	1	Publicize and share resources from MDA, BWSR, DNR and others containing actions specific to different land types (e.g. residential, commercial, agricultural).	
			2	Educate and incentivize developers and HOAs regarding the value of biodiverse and resilient landscapes which can achieve multiple co-benefits (habitat, stormwater management, aesthetics, improved water quality, etc…)	
			3	Develop an inventory and prioritization of degraded soil areas.	
B	Reduce non-native plant cover and replace it with high-value and functional native landscaping.	New	1	Addressed through Ecological Health	
C	Assist agricultural landowners with the implementation of best management practices that improve soil health, retain moisture, and minimize nutrient loss.	New	1	Support WCD efforts to implement solutions to identify erosion control problems.	

Additional Comments/Questions

Using a sticky note, add comments, questions, suggested revisions, or additional implementation items for us to consider