Watershed Management Plan 2021-2031

Appendices

Fourth Generation Plan

APPENDICES

Appendix A MWMO Joint and Cooperative Agreement, Legal Description and Bylaws

Appendix B MWMO Standards

Appendix C Water Resource-Related Activities of Member Organizations

Appendix D Soil Series Descriptions

Appendix E Rare Species Index and Blanding's Turtle Information

Appendix F Joint and Cooperative Agreement regarding Bassett Creek Tunnels

Appendix G Public Comments and Issues Identification

Appendix H Statuary Reviewer Comments and Responses 2020

Appendix I Design Sequence Flow Chart

Appendix J MWMO 2021 WMP Data Sources and Updates

Appendix K Public Hearing Comments and Responses

Appendix A

Appendix A MWMO Joint and Cooperative Agreement, Legal Description and Bylaws

Mpls Designation C-28891

Joint and Cooperative Agreement for the Mississippi Watershed Management Organization

City of Columbia Heights

City of Fridley

City of Hilltop

City of Lauderdale

City of Minneapolis

City of St. Anthony Village

City of Saint Paul

Minneapolis Park and Recreation Board

_____ 2012

Table of Contents

Membership

This Agreement entered into as of the date of execution by and among the following:

Cities of

Columbia Heights

Fridley

Hilltop

Lauderdale

Minneapolis

Saint Anthony Village

Saint Paul, and

the Minneapolis Park and Recreation Board

for the establishment of a Watershed Management Organization. The aforementioned cities and the Minneapolis Park and Recreation Board shall hereinafter be referred to as Members.

WHEREAS, the Members have authority pursuant to Minnesota Statutes, Section 471.59 to jointly and cooperatively by agreement exercise powers common to the contracting bodies pursuant to Minnesota Statutes, Section 103B.201 to 103B.253 and

WHEREAS, the Members desire to plan a comprehensive water management program in accordance with Minnesota Statutes, Sections 103B.201 to 103B.253;

NOW THEREFORE, the parties to this Agreement do mutually agree as follows:

Article I

Legal Purpose

The purpose of this Joint and Cooperative Agreement for the Mississippi Watershed Management Organization is to replace the Joint Powers Agreement for the Middle Mississippi River Watershed Management Organization executed in 1985, the Joint and Cooperative Agreement for the Middle Mississippi River Watershed Management Organization of January 1997, the Joint and Cooperative Agreement for the Mississippi Watershed Management Organization of January 2002, and the Joint and Cooperative Agreement for the Mississippi Watershed Management Organization of May 2011.

The purpose of the Mississippi Watershed Management Organization, as provided for in this Agreement, is to provide for the wise, long-term management of water and associated land resources within the watershed through implementation measures that realize multiple objectives, respect ecosystem principles, and cultural and historical community values. The Mississippi Watershed Management Organization seeks to: (a) protect, enhance, and restore the quality and quantity of surface and ground water resources within the Mississippi Watershed Management Organization jurisdiction; (b) protect, preserve, and use natural surface and ground water storage and retention systems; (c) efficiently utilize public capital expenditures needed to correct and control flooding and water quality problems; (d) identify and plan for means to use protect and improve surface and ground water quality; (e) establish more uniform local policies and official controls for surface and ground water management; (f) promote ground water recharge; (g) protect and enhance fish and wildlife habitat and water recreation opportunities; (h) secure the other benefits associated with the proper management of surface and ground water; and (i) promote and encourage cooperation among Members and among other organizations in coordinating local comprehensive water management programs.

A legal description and map, Appendix A and Appendix B of this Agreement, respectively, of the boundaries of the Mississippi Watershed Management Organization are included pursuant to Minnesota Rules 8410.0030, Subpart 1.B.

Article II

Definitions

For the purpose of this Agreement, the terms used herein shall have the meanings defined in this article.

Subdivision 1: "Organization" means the Mississippi Watershed Management Organization.

Subdivision 2: "Commission" means the governing body of the Organization and shall consist of a Commissioner or Alternate from each of its Members.

Subdivision 3: "Commissioner" means any person appointed to the Commission by each Member's governing body, or in the Commissioner's absence, the Alternate.

Subdivision 4: "Alternate" means any person appointed to the Commission by each Member's governing body to represent the Member in the absence of the Commissioner.

Subdivision 5: "Council" means the governing body of a Member. In the case of municipalities, this shall be the elected officials responsible for governing the city and for Minneapolis Park & Recreation Board, its Board of Commissioners.

Subdivision 6: "Member" or "Member Community" means any city, county, or special purpose government entity within the watershed that enters into this Agreement.

Subdivision 7: "Agreement" means this Agreement.

Subdivision 8: "Plan" means the Watershed Management Plan adopted by the Mississippi Watershed Management Organization.

Subdivision 9: "Watershed" means the area contained within a line drawn around the extremities of all terrain whose surface drainage is tributary to the Mississippi River and within the mapped

areas reasonably demonstrated on the map identified as Appendix B, as defined within the legal description identified in Appendix A.

Subdivision 10: "Act" means the Metropolitan Surface Water Management Act as found in Minnesota Statutes, Sections 103B.201 to 103B.253.

Subdivision 11: "Budget" means a statement of the expected income and expenses of the Organization for each Year. The Commission may divide the Budget into an Administrative Budget, covering staff salary and benefits, Commission expenses, rent, office expenses and other administrative expenses, and a Programs and Projects Budget, covering the programs and projects of the Organization, including capital projects.

Subdivision 12: "Capital Improvement Project" means a physical improvement project required by the Act to be included in the capital improvements program of the Plan.

Subdivision 13: "Majority" means greater than half of the quorum.

Subdivision 14: "Subwatershed" means a smaller geographic section of a larger watershed unit with a drainage area the boundaries of which include all the land area draining to a point.

Subdivision 15: "Year" means from January 1 to December 31.

Subdivision 16: "Quorum" means the number of Commissioners or Alternates required to be present for business to be legally transacted. This number shall be any number that is greater than half of the Members. Any number less than a quorum may adjourn a scheduled meeting.

Subdivisoin 17: "Executive Director" means the Organization's administrator appointed by the Commission.

Article III

Board of Commissioners

Subdivision 1: The governing body of the Organization shall be its Commission, which shall consist of seven (7) voting Commissioners. Each Commissioner shall have one vote. All appointments to the Commission shall be in accordance with Minnesota Statutes, Section 103B.227. The Board of Water and Soil Resources shall be notified of all appointments and vacancies of the Commission within 30 days. All vacancies shall be filled within ninety (90) days after they occur. Notices of all vacancies and appointments shall be published in a legal publication of the Members community appointing the Commissioner at least fifteen (15) days prior to the appointment. Vacancies shall be filled for the remainder of the term by the Council that appointed or had the right to appoint the Commissioner. With the exception of the City of Hilltop, the Council of each Member shall appoint one (1) Commissioner to represent the Member to the Commission. The Council of the City of Columbia Heights, after consultation with the Council of the City of Hilltop, will appoint one (1) Commissioner to represent the Cities of Columbia Heights and Hilltop. Each Commissioner shall serve until his or her successor is appointed.

Subdivision 2: A Commissioner may not be removed from the Commission except for just cause by the Council that made the appointment.

Subdivision 3: Member Councils may select and appoint alternates to the Commission in the same manner as Commissioners. In the absence of a Member's Commissioner, the designated Alternate may vote and act in the Commissioner's place. The Alternate shall serve a term concurrent with the Member's Commissioner.

Subdivision 4: Each Member's Council shall, within thirty (30) days of appointment, file with the Executive Director of the Commission a record of the appointment of its Commissioner and Alternate. The Organization shall notify the Board of Water and Soil Resources of Member appointments and vacancies within thirty (30) days after receiving notice from the Member.

Subdivision 5: In accordance with Minnesota Statutes, Section 103B.227, the Council of each Member shall determine the eligibility and qualifications of its Commissioner and Alternate. However, the term of each Commissioner shall be the calendar year.

Subdivision 6: Regular meetings shall be held by the Commission periodically at the time and place determined by the Commission pursuant to open meeting law, Minnesota Statutes, Chapter 13D.

Subdivision 7: At the first meeting of the Commission and each calendar year thereafter, the Commission shall elect from its Members a chairperson, a vice chairperson, a treasurer, a secretary, and such other officers as it deems necessary to conduct its meetings and affairs.

Subdivision 8: The Commission shall adopt those bylaws and procedures necessary for the conduct of its meetings. Such rules may be amended at either a regular or special meeting of the Commission provided that a ten (10) day prior notice of the proposed amendment has been furnished to each Commissioner and Alternate to whom notice of meetings is required to be sent.

Subdivision 9: The Commission may create such committees, task forces or working groups as needed to accomplish its mission.

Subdivision 10: The commission may set such compensation for its Commissioners as it deems appropriate, provided such compensation does not exceed the compensation allowed for managers of watershed districts under Minnesota Statutes, Section 103D.315, subd. 8. However, no member's Council is prevented from providing compensation for its Commissioner for serving on the Commission, if such compensation is authorized by such governmental unit and by law.

Article IV

Powers and Duties of the Board of Commissioners

Subdivision 1: The Commission shall employ an Executive Director and may delegate to the Executive Director any power or authority that may be delegated to a city manager in a Minnesota Plan B statutory city. The Commission shall employ such other persons as it deems necessary to accomplish its duties and powers. The Commission may hire staff on a full time, part time or consulting basis. The Commission may also incur expenses and expenditures necessary and incidental to the effectuation and/or implementation of its purposes and powers.

Subdivision 2: In order for the Commission to conduct business, a quorum must be present. Decisions by the Commission require a majority vote of the quorum present.

Subdivision 3: The Commission shall have an established Citizen Advisory Committee and Technical Advisory Committee to provide input and to serve in an advisory role.

Subdivision 4: The Commission shall review and approve a Local Water Management Plan for each of its Member Communities as established under Minnesota Statutes, Chapter 103B.

Subdivision 5: The Commission may acquire, operate, construct, and maintain capital improvement projects delineated in the Watershed Management Organization Watershed Management Plan for the protection, enhancement, and improvement of the watershed.

Subdivision 6: The Commission shall make a reasonable attempt to assess the compatibility of proposed capital improvement projects with other existing policies, programs, and projects within the MWMO and across its boundaries. In particular, compatibility with neighborhood association and community council plans in the project area should be considered. An informal review should occur at least two months before the capital improvement project proposal is approved in the MWMO budget.

Subdivision 7: The Commission shall develop a comprehensive Watershed Management Plan to meet the requirements of Minnesota Statutes, Chapter 103B. The plan shall establish comprehensive goals and policies for the protection, enhancement, and improvement of the watershed, and shall establish specific implementation strategies to realize these goals and policies.

Subdivision 8: The Commission shall have the power to contract with any governmental unit, private or nonprofit association to accomplish the purposes for which it is organized.

Subdivision 9: The Commission has the authority to apply for, accept, and use grants, loans, money or other property from the United States, the State of Minnesota, a unit of government or any person or entity for the Organization. The Organization may use and dispose of such money or property for any expenses/fees, policies, goals, capital improvement projects, or any use the Organization deems necessary to pursue its goals and policies.

Subdivision 10: The Commission may establish and maintain devices for acquiring and recording hydrologic and water quality data within the watershed.

Subdivision 11: The Commission may contract for, or purchase such insurance, as they deem necessary for the protection of the Organization.

Subdivision 12: The Commission shall have the authority to invite governmental entities within the area of the watershed to join the Organization. Furthermore, any governmental entities within the area of the watershed may petition for membership in the Organization. The addition of new Members shall require a majority vote of the Commission and appropriate resolution by current Member Councils. The effective date shall be the date of filing by the last Council resolution approving the addition. As Members are added to the Organization, there shall be created one voting Commissioner.

Subdivision 13: The Commission has the authority to contract for the space, equipment, and supplies to carry on its activities either with an individual Member or elsewhere.

Subdivision 14: The Commission may investigate on its own initiative or upon petition of any Member, complaints relating to the pollution of surface or ground water in the watershed. Upon a finding that the watershed is being polluted, the Commission may take appropriate action to alleviate the pollution including recommending enforcement and other regulatory actions to the appropriate jurisdiction.

Subdivision 15: Commissioners and staff may enter upon lands within or without the watershed to make surveys and investigations to accomplish the purposes, goals and policies of the Organization. Such entrance shall occur after obtaining a duly executed search warrant, with permission of the property owner, or when a search warrant for access to the property is not required. The Commission shall be liable for actual damages resulting therefrom, subject to the limitations of Minnesota Statutes, Chapter 466. Every person who claims damages shall serve the Chair or Secretary of the Commission with a notice of claim as required by Minnesota Statutes, Section 466.05. In accordance with Minnesota Statutes, Section 471.59, Subd. 1a(b) the Organization is considered a single governmental unit and the total liability for the Members and the Organization shall not exceed the limits on governmental liability for a single governmental unit as specified in Minnesota Statutes, Secton 466.04, Subd. 1.

Subdivision 16: The Commission may vote to provide legal and technical assistance in connection with litigation or other proceedings between one or more of its Members and any other political subdivision, commission, board or agency relating to the planning or construction of capital improvement projects approved by the Organization.

Subdivision 17: The Commission shall at least every 2 years solicit interest proposals for professional or technical consultant services before retaining the services of a consultant or extending annual service agreements.

Subdivision 18: The Commission may designate one or more national or state bank or trust companies authorized by Chapters 118A or 427 of Minnesota Statutes to receive deposits of public monies to act as depositories for the Organization's funds. No funds may be disbursed without the signature of two officers. The Treasurer shall be required to file with the Secretary of the

Commission a bond in the sum of at least $10,000 or such higher amount as shall be determined by the Commission. The Commission shall pay the premium on said bond.

Subdivision 19: The Commission may acquire real or personal property, conduct programs and projects, and exercise all other powers necessary and incidental to the implementation of the purposes and powers set forth herein and to carry out the obligation of a watershed management organization under the Act.

Subdivision 20: The Commission shall have the authority to adopt a budget, to decide on the total amount necessary to be raised from ad valorem taxes to meet the budget and to certify its budget to the county auditor of each county having territory within the watershed. Taxes may be levied for any purpose authorized by the Act in accordance with procedures specified in the Act, and subject only to the limitations set forth in the Act and this Agreement. The Commission shall also have the authority to certify for payment by the counties all or any part of the cost of a capital improvement contained in the capital improvement program of the Plan, in accordance with Minnesota Statutes, Section 103B.251.

Article V

Budget and Financial Matters

Subdivision 1: A proposed preliminary budget will be presented to the Commission at its July meeting. The Commission shall hold at least one public hearing on the proposed preliminary budget prior to adoption of the preliminary budget. At least 30 days' notice to Members and such other public notice as is directed by the Commission shall be given prior to the hearing. The Commission will hear all comments and objections to the proposed preliminary budget from any Member as well as comments from the public. The Commission may adopt the preliminary budget as proposed or modify or amend the preliminary budget. The Commission shall adopt a preliminary budget and a proposed tax levy for the ensuing year on or before September 15 of each year. The preliminary budget shall then be certified by the Executive Director of the Organization on or before September 15 to the clerk of each Member's Council and each of the County Auditors. The Commission shall adopt a final budget and certify a tax levy to the Counties by December 31 of each year.

Subdivision 2: The Commission has the duty to make a full and complete financial accounting report to each Member at least once annually. A certified public accountant shall perform the audit of the Organization. The report shall include the approved budget; a reporting of revenues; a reporting of expenditures; a financial audit report or section that includes a balance sheet; a classification of revenues and expenditures; an analysis of changes in final balances; and any additional statements considered necessary for full financial disclosure; and the status of all Organization's projects and work within the watershed; copies of said report shall be transmitted to the clerk, or appropriate staff member of each Member's Council.

Subdivision 3: Projects or other necessary expenditures that cannot be accomplished through the ad valorem tax levy shall be addressed by mutual agreement of the affected Members outside of this Agreement.

The Commission will endeavor to equitably apportion the expenditure of Commission funds for projects and programs among the Members' jurisdictions, giving due regard to the financial

contributions from tax levies within each Member's jurisdiction as well as the merit of each project and program according to criteria established in the Plan or approved by the Commission.

Article VI

Capital Projects

Subdivision 1: The Members recognize that on-going capital expenditures will be required to solve some of the water resource problems within the watershed. For the purposes of this Agreement, capital improvement projects are those determined necessary to implement the Organization's Capital Improvement Program.

Subdivision 2: Capital Projects will be financed over the entire watershed.

Subdivision 3: In order to finance an approved capital improvement project, the Commission may levy an ad valorem tax against the entire watershed.

Subdivision 4: Approval of capital improvement projects shall require a majority vote of the quorum present and other such bodies as required by law. Capital improvement projects shall be financed in accordance with Minnesota Statutes, Chapters 103B and 103D.

Subdivision 5: The Commission shall have the authority to prepare and adopt a Capital Improvement Program as defined in Minnesota Statutes, Section 103B.205 Subd. 3 as part of the Watershed Management Plan. The Capital Improvement Program shall set forth the schedule of capital projects identified in the Watershed Management Plan as well as designating Members for participation in each project and estimating the total costs for such projects. Projects not identified in the Watershed Management Plan shall not be included in the Capital Improvement Program until and unless the Watershed Management Plan is amended to include such projects. Implementation of the Capital Improvement Program will begin upon adoption of the Watershed Management Plan subject to the availability of funding.

Subdivision 6: All capital improvement projects need to be listed in the Watershed Management Plan.

Subdivision 7: Funding for any and all capital improvement projects may only occur if the project(s) is in the approved capital budget.

Subdivision 8: If a Member is responsible for the completion of a capital project, the Organization's approved share of the project cost coming from its tax levy will be reimbursed to the Member from actual tax revenues received in a manner agreed to. The Member being reimbursed for project costs by the Organization shall agree to be responsible for providing any requested documentation of costs requested by the Organization or its auditors.

Article VII

Duration

Each Member agrees to be bound by the terms of this Agreement until January 1, 2031, and it may be continued thereafter upon the agreement of all Members.

Article VIII

Dissolution

Any Member may petition the Commission to dissolve the Organization. Upon thirty days advance written notice to each Member, the Commission shall hold a hearing to consider dissolution of the Organization. If a majority of the Commission votes in favor of dissolution, the Commission shall submit a resolution for dissolution of the Organization for consideration by each Member's Council, the board of each affected County and the Minnesota Board of Water and Soil Resources. Each governmental unit shall have 90 days in which to consider dissolution of the Organization. If, within 90 days of the date the notice was given, a majority of Members' Councils has ratified said resolution; then the Organization shall be dissolved and this Agreement shall be terminated.

Upon dissolution, the Organization shall complete all work in progress and dispose of all property. All property of the Organization shall be sold and the proceeds thereof, together with monies on hand, shall be distributed to the eligible Members of the Commission as follows: assets shall be apportioned and distributed in the percentage of the tax levy within the jurisdiction of each Member received by the Organization in the preceding full calendar year.

Article IX

Amendments

Any Member may recommend to the Commission amendments to this Agreement. Upon a majority vote, amendments to this Agreement shall be forwarded by the Commission to its Members' Councils. No amendment shall be effective until the amendment has been ratified by the Council of each Member. The effective date of any amendment shall be the date on which the last Member's Council ratifies the amendment and is filed with the Executive Director of the Organization.

Article X

Effective Date

This Agreement shall be adopted upon ratification by the Council of each Member and the execution of the Agreement by each Member. Upon voting to ratify the Agreement, the clerk of the Council of the ratifying Member shall file a certified copy of the resolution of the ratification with the Executive Director of the Commission. The effective date of the Agreement shall be the date on which the last Member to ratify files its resolution of ratification. Upon adoption of this Agreement, the Executive Director shall supply to each Member and the Board of Water and Soil Resources a copy of the Members' ratification resolutions and a copy of the signed Agreement.

IN WITNESS WHEREOF, the undersigned Members, by action of their Councils, have caused this agreement to be executed in accordance with the authority of Minnesota Statutes Sections 103B.211 and 471.59.

Appendix A: Legal Description

Appendix A

Revised 1/25/12

All the land lying within the following described boundaries:

[i]Commencing at the intersection of E Hennepin Av (a/k/a Larpenteur Av) and the E City Limits of the City of Minneapolis; th N on said E City limits and its Nly extension to 33rd Ave NE and Old Hwy 8; th SWly along Old Hwy 8 to 31st Av NE; th Wly along 31st Av NE to Rankin Dr; th N along Rankin Dr to 33rd Av NE; th W along 33rd Av NE to Silver Lake Rd; th N along Silver Lake Rd to 36th Av NE; th W along 36th Av NE to Roosevelt St NE; th N along Roosevelt St NE to 37th Av NE; thence on the boundary between Hennepin and Ramsey Counties westerly on the centerline of 37th Avenue NE; continuing on the line between Hennepin and Anoka Counties and between the City of Minneapolis and the City of Columbia Heights westerly on the centerline of 37th Avenue NE to the intersection with the centerline of Hayes Street NE; thence in the City of Columbia Heights, Anoka County, northerly on the centerline of Hayes Street NE to the intersection of the centerline of 39th Avenue; thence westerly on the centerline of 39th Avenue to the intersection with the centerline of Johnson Street; thence northerly and northeasterly on the centerline of Johnson Street to the intersection with the centerline of 40th Avenue; thence westerly on the centerline of 40th Avenue to the intersection of the centerline of 40th Avenue to the intersection of the centerline of Polk Street; thence northeasterly on the centerline of Polk Street to the intersection of the centerline of Arthur Street NE; thence northerly and northeasterly on the centerline of Arthur Street NE to the intersection with the centerline of 45th Avenue; thence easterly on the centerline of 45th Avenue to the northeast corner of Section 36, Township 30 North, Range 24 West; thence on the boundary between Anoka and Ramsey Counties and the City of Columbia Heights and the Village of New Brighton northerly on the west line of Section 30, Township 30 North, Range 23 West to the southeast corner of the corporate area of the City of Fridley; thence on the boundary between the City of Columbia Heights and the City of Fridley westerly in the north half of Section 25, Township 30 North, Range 24 West to the intersection with the centerline of Matterhorn Drive; thence in the City of Fridley northerly on the centerline of Matterhorn Drive to the centerline of Interstate Highway 694; thence westerly on the centerline of Interstate Highway 694 to the intersection with the centerline of State Highway No. 65; thence northerly on the centerline of State Highway No. 65 to the southerly intersection of the centerline of West Moore Lake Drive; thence westerly and northerly on the centerline of West Moore Lake Drive to the intersection with the centerline of 61st Avenue NE; thence westerly on the centerline of 61 st Avenue NE to the intersection of the centerline of 7th Street; thence northerly on the centerline of 7 th Street to the intersection with the centerline of Mississippi Street; thence westerly on the

centerline of Mississippi Street, continuing westerly on the centerline of Mississippi Way to the intersection with the centerline of East River Road; thence northerly on the centerline of East River Road to the intersection with the extension of the northerly line of R.L.S. (Registered Land Survey) No. 19; thence westerly on the extension of the northerly line of R.L.S. No. 19 to the centerline of the Mississippi River,[ii] thence southerly along the centerline of the Mississippi River to the Ely extension of 53rd Av N; th Wly along Ely extension of 53rd Av N to James Av N; th S along James Av N to 52 Av N; th E along 52 Av N to the alley between Humboldt Av N and Irving Av N; [iii]th S along said alley to 51st Av N; th E along 51st Av N to Humboldt Av N; th S on Humboldt Av N to 50th Av N; th E along 50th Av N to Fremont Av N; th S along Fremont Av N to 49th Av N; th E along 49th Av N to Emerson Av N; th S along Emerson Av N to 47th Av N; th E along 47th Av N to alley between Colfax and Bryant Avs N; th S along said alley to 46th Av N; th E along 46th Av N to Camden Av N; th S along Camden Av N to 45th Av N; th E along 45th Av N to the center line of the Mississippi River; th Sly along the center line of the Mississippi River to the Ely extension of 41st Av N; th W along 41st Av N and its Ely extension to Bryant Av N; th N along Bryant Av N to 42nd Av N; th W along 42 Av N to Emerson Av N; th S along Emerson Av N to 41st Av N; th E along 41st Av N to Dupont Av N; th S along Dupont Av N to 39th Av N; th W along 39th Av N to Emerson Av N; th S along Emerson Av N to Dowling Av N; th W along Dowling Av N to Knox Av N; th S along Knox Av N to the center line between 36th and 37th Avs N; th E along said center line to Humboldt Av N; th S along Humboldt Av N to 35th Av N; th W along 35th Av N to James Av N; th N along James Av N to 36th Av N; th W along 36th Av N to Logan Av N; th S along Logan Av N to 35th Av N; th W along 35th Av N to Morgan Av N; th S along Morgan Av N to 33rd Av N;[iv] th E along 33rd Av N to the alley between James and Knox Avs N; th S along said alley to Lowry Av N; th E along Lowry Av N to James Av N; th S along James Av N to 30th Av N; th E along 30th Av N to Fremont Av N; th S along Fremont Av N to 29th Av N; th W along 29th Av N to the alley between Fremont and Girard Avs N; th S along said alley to 27th Av N; th W along 27th Av N to the alley between Humboldt and Irving Avs N; th S along said alley to 26th Av N; th W along 26th Av N to Irving Av N; th S along Irving Av N to 25th Av N; th E along 25th Av N to Humbolt Av N; th S along extension of Humbolt Av N to 23rd Av N; th W along 23rd Av N to Irving Av N; th NWly along Irving Av N to Ilion Av N; th SWly along Ilion Av to Hillside Av; th NWly along Hillside Av to the alley between James and Logan Avs N; th SWly along said alley to the EW alley lying between Lots 72 and 73, Blk 19, Forest Heights Addn to Minneapolis; th W along last described alley to W Broadway and Oliver Av N; th Sly along Oliver Av N to 21st Av N; th W along 21 Av N to Penn Av N; th S along Penn Av N to center line between 16th and 17th Avs N th are lying W of Penn Av N; th W along said center line to Queen Av N; th S along Queen Av N Plymouth Av N; th W along Plymouth Av N to Russell Av N; th S along Russell

Av N to 12th Av N; th E on 12th Av N to Queen Av N; th S on Queen Av N to 8th Av N; th W on 8th Av N to Russell Av N; th S on Russell Av N to 4th Av N; th E on 4th Av N to Logan Av N; th S on Logan Ave N to 3rd Av N; th W on 3rd Av N to Gramercy Av; th Swly on Gramercy Av to 2nd Av n; th SEly on 2nd Av N to Cedar Lake Road N; th NEly on Cedar Lake Road N to 2nd Av N; th E on 2nd Av N to Market St N; th extending S from Market St N to the intersection with the SEly property line of the Hennepin County Regional Rail Authority r/w (f/k/a the Chicago, Milwaukee, St Paul and Pacific Railroad); (th SWly along the the SEly property line of the Hennepin County Regional Rail Authority r/w to Linden Av;) th SWly along Linden Av to Dunwoody Blvd; th S and SEly along Dunwoody Blvd; to vacated Emerson Av S th SWly along vacated Emerson Av S to Kenwood Pkwy; th SWly along Kenwood Pkwy to Summit Pl; th Swly along Summit Pl to Mount Curve; ᵛth Ely along Mt Curve Av to the centerline of Colfax Av S; th S along Colfax Av S to W Franklin Av; th W on W Franklin Av to Dupont Av S; th S on Dupont Av S to 22nd St W; th W on 22nd St W to Emerson Ave S; th S on Emerson Av S to 24th St W; th W on 24th St W to Irving Av S; th N on Irving Av S to Lake Pl; th SWly on Lake Pl to 26th St W; th Ely on 26th St W to Hennepin Av; th NEly on Hennepin Av to 22nd St W; the E on 22nd St W to Bryant Av S; th S on Bryant Av S to 27th St W; th E on 27th St W to Lyndale Av S; th N on Lyndale Av S to 26th St W; th E on 26th St W to Garfield Av S; th N on Garfield Av S to 25th St W; th E on 25th St W to Pillsbury Av S; th S on Pillsbury Av S to 29th St W; th W on 29th St W to Pleasant Av S; th S on Pleasant Av S to the north r/w of the Hennepin County Regional Rail Authority; th W on the north r/w of the Hennepin County Regional Rail Authority to Dupont Av S; th N on Dupont Av S to 28th St W; th W on 28th St W to Fremont Av S; th S on Fremont Av S to the north r/w of the Hennepin County Regional Rail Authority; th W on the north r/w of the Hennepin County Regional Rail Authority to Hennepin Av; th S on Hennepin Av to ŧThe Mall; th W on ŧThe Mall to Humboldt Av S; the S on Humboldt Av S to Lake St W; th E on Lake St W to Lyndale Av S; th N on Lyndale Av S to the south r/w of the Hennepin County Regional Rail Authority; th E on the south r/w of the Hennepin County Regional Rail Authority to Harriet Av S; th S on Harriet Av S to 31st St W; th E on 31st St W to Grand Av S; th N on Grand Av S to the south r/w of the Hennepin County Regional Rail Authority; th E on the south r/w of the Hennepin County Regional Rail Authority to Pleasant Av S; th S on Pleasant Av S to 32nd St W; th E on 32nd St W to Pillsbury Av S; th S on Pillsbury Av S to 34th St W; th W on 34th St W to Grand Av S; th S on Grand Av S to 35th St W; th W on 35th St W to Colfax Av S; th N on Colfax Av S to 33rd St W; th W on 33rd St W to Fremont Av S; th S on Fremont Av S to 34th St W; th W on 34th St W to Hennepin Av; th S on Hennepin Av to 35th St W; th W on 35th St W to Irving Av S; th S on Irving Av S to 36th St W; th E on 36th St W to King's Highway; th S on King's Highway to 42nd St W; th E on 42nd St W to Bryant Av S; th N on Bryant Av S to 41st St W; th E on 41st St W to Garfield Av S; th S on Garfield Av S to 43rd St W; th E on 43rd St W to Harriet

Av S; th S on Harriet Av S to 44th St W; th W on 44th St W to Lyndale Av S; the S on Lyndale Av S to 45th St W; th W on 45th St W to Aldrich Av S; th S on Aldrich Av S to 47th St W; th W on 47th St W to Bryant Av S; th S on Bryant Av S to 49th St W; th E on 49th St W to Pleasant Av S; N on Pleasant Av S to 48th St W; th E on 48th St W to Stevens Av S; th S on Stevens Av S to 50th St E; th E on 50th St E to 2nd Av S; th N on 2nd Av S to 42nd St E; th E on 42nd St E to Chicago Av S; th N on Chicago Av S to 41st St E; th W on 41st St E to Oakland Av S; th N on Oakland Av S to 40th St E; th E on 40th St E to Chicago Av S; th N on Chicago Av S to 38th St E; th W on 38th St E to Portland Av S; th N on Portland Av S to 37th St E; th E on 37th St E to Oakland Av S; th N on Oakland Av S to 36th St E; th E on 36th St E to Columbus Av S; th N on Columbus Av S to 35th St E; th W on 35th St E to Oakland Av S; th N on Oakland Av S to 34th St E; th W on 34th St E to 4th Av S; th N on 4th Av S to 33rd St E; th E on 33rd St E to 5th Av S; th N on 5th Av S to 32nd St E; th E on 32nd St E to Portland Av S; th N on Portland Av S to 31st St E; th E on 31st St E to 10th Av S; th S on 10th Av S to the N line of Powderhorn Park; th E along the N line of Powderhorn Park to 11th Av S; th N on 11th Av S to 29th St E; th E on 29th St E to 13th Av S; th S on 13th Av S to Lake St E; th E on Lake St E to 14th Av S; th s on 14th Av S to 32nd St E; th E on 32nd St E to 16th Av S; th N on 16th Av S to Lake St E; th E on Lake St E to 19th Av S; th S on 19th Av S to 31st St E; th E on 31st St E to 21st Av S; th S on 21st Av S to 32nd St E; th W on 32nd St E to 20th Av S; th S on 20th Av S to 35th St E; th E on 35th St E to 22nd Av S; th S on 22nd Av S to 37th St E; th E on 37th St E to 24th Av S; th S on 24th Av S to 38th St E; th E on 38th St E to Hiawatha Av; th SEly on Hiawatha Av to Nawadaha Blvd; th NEly on Nawadaha Blvd to the east r/w of the Soo Line RR (formerly Chicago, Milwaukee, St. Paul & Pacific Railroad); th NWly the east r/w of the Soo Line RR (formerly Chicago, Milwaukee, St. Paul & Pacific Railroad) to 46th St E; th E on 46th St E to Snelling Av S; th NWly on Snelling Av S to 44th St E; th E on 44th St E to 40th Av S, th S on 40th Av S to 45th St E; th E on 45th St E to 42nd Av S; th N on 42nd Av S to 44th St E; th E on 44th St E to 46th Av S; th S on 46th Av S to 46th St E, th E on Ford Pkwy to the east boundary of the City of Minneapolis[vi]; th Nly along the centerline of the Mississippi River to the Sly extension of Emerald St; th N along the Sly extension of Emerald St and Emerald St , being the easterly boundary line of the City of Minneapolis and the County of Hennepin, to the center line of Territorial Rd; th Ely to the southerly extension of the most westerly lines of Lots 2 and 3, Block 3 of West Gate Addition projected to the center line of Territorial Rd; th Nly along the southerly extension of the most westerly lines and the most westerly lines of Lots 2 and 3, Block 3 of West Gate Addition to the north line of the northwest quarter of the southwest quarter of Section 29, Township 29, Range 23; th Ely 19.43 feet along the extention of and the north line of the northwest quarter of the southwest quarter of said Section 29 to the most easterly of the west lines of Lots 1 and 2, Block 3 of the West Gate Addition; th Nly along the west line of Lots 1 and 2, Block 3 of the West Gate Addition and the center line of

vacated Berry St to the southeast corner of Outlot D of the West Gate Addition, said corner being on the center line of vacated Berry St; th Nly along the east line of said Outlot D 104.36 feet to the northeast corner of said Outlot D and the south line of Outlot C of the West Gate Addition; th NEly along the south line of said Outlot C and the southwesterly extention of the south line of Outlot A of the West Gate Addition and the south line of said Outlot A to the southeast corner of said Outlot A; th Sly from the southeast corner of said Outlot A along the east line of the southwest quarter of the northwest quarter of Section 29, Township 29, Range 23 to southerly right-of-way line of the U of M Transit Way; th NEly along the southerly right-of-way line of the U of M Transit Way to the intersection of the northerly line of Robbins St and the westerly line of Marvel St; th NEly in a straight line across the U of M transit Way to the intersection of the center line of Kasota Ave and the east line of the northwest quarter of Section 29, Township 29, Range 23; th Nly along the east line of said northwest quarter of Section 29 to northerly right-of-way line of the Burlington Northern Railroad, formerly the Northern Pacific Railroad, th NWly along the northerly right-of-way line of the Burlington Northern Railroad to the southerly extention of the center line of Eustis St; th Nly along the southerly extention of the center line and the center line of Eustis St to E Hennepin Ave; [vii]th Wly along E Hennepin Ave to the intersection of E Hennepin Av (a/k/a Larpenteur Av) and the E City Limits of the City of Minneapolis.

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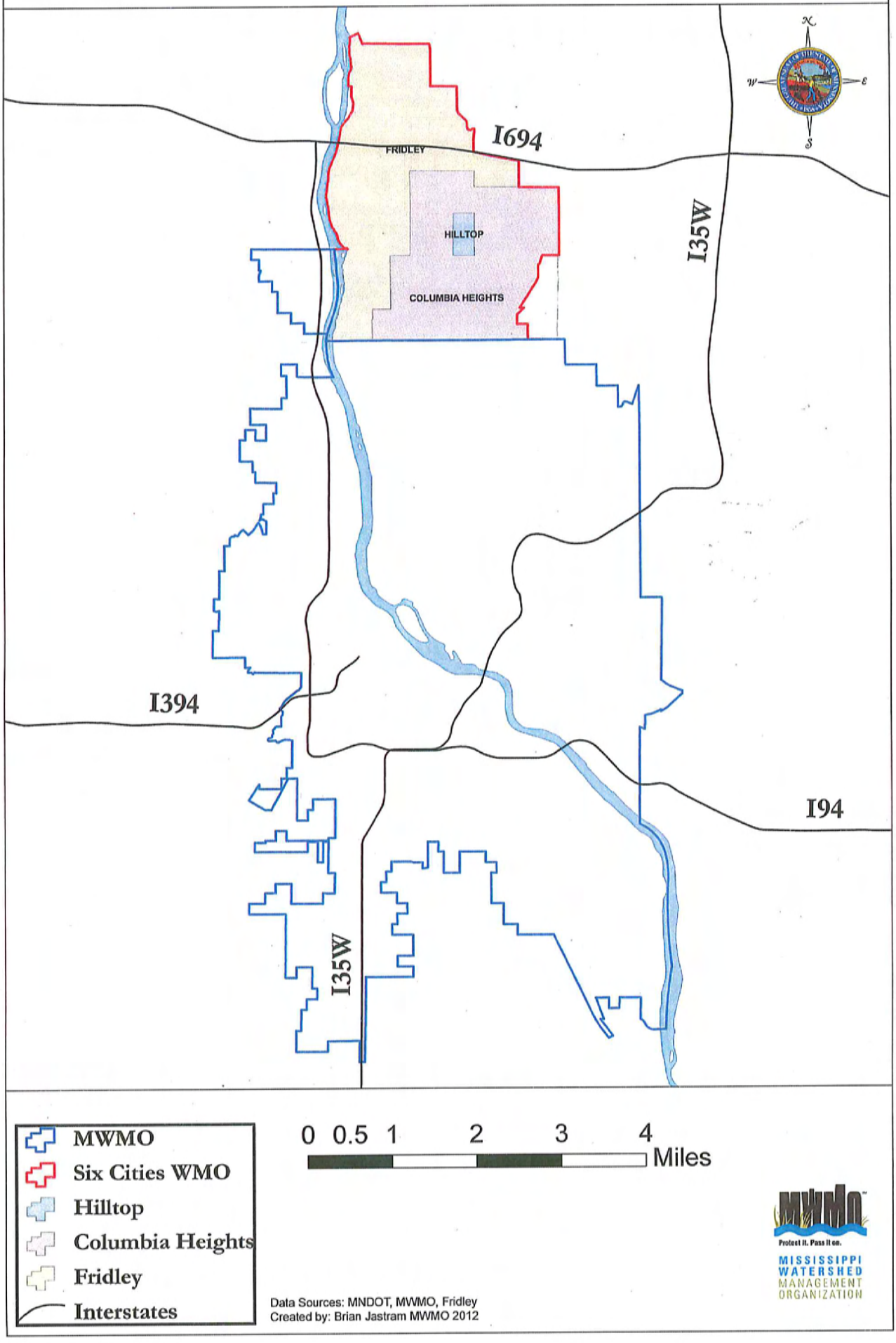
[i] Continue of boundary with Rice Creek WD
[ii] End of boundary with Rice Creek WD, start boundary with West Mississippi WMO
[iii] End boundary with West Mississippi WMO, start boundary with Shingle Creek WMO
[iv] End boundary with Shingle Creek WMO, start boundary with Bassett Creek WMO
[v] End boundary with Bassett Creek WMO, start boundary with Minnehaha Creek WD
[vi] End boundary with Minnehaha Creek WD, start boundary with Capitol Region WD
[vii] End boundary with Capitol Region WD, start boundary with Rice Creek WD

Appendix B: Mississippi Watershed Management Organization Map

Appendix B

MWMO and Six Cities MWO Boundary



City of Columbia Heights

By: _____ Dated: 3/28, 20 12
Gary Peterson, Mayor

Attest: _____ Dated: 4/2, 20 12
Walt Fehst, City Manager

City of Fridley

By: _____ Dated: August 21, 20 12
Scott Lund, Mayor

Attest: _____ Dated: August 21, 20 12
Debra Skogen, City Clerk

City of Hilltop

By: Jerry Murphy Dated: April 2, 2012
Jerry Murphy, Mayor

Attest: Ruth Nelsen Dated: April 2, 2012
Ruth Nelsen, City Clerk

City of Minneapolis

By: _____ Dated: August 07, 20 12
R.T. Rybak, Mayor

Attest: _____ Dated: August 8, 20 12
City Clerk

Countersigned: Pam Fernandez Dated: 8.13, 20 12
Finance Officer Designee

Approved as to Form

By: Corey M. Conover Dated: June 26, 20 12
Assistant City Attorney

City of St. Anthony Village

By: _____ Dated: _____, 20 _____
Jerry Faust, Mayor

Attest: _____ Dated: _____, 20 _____
Michael Mornson, City Manager

City of Lauderdale

By: _____ Dated: May 8, 2012
Jeffrey Dains, Mayor

Attest: _____ Dated: May 8, 2012
Heather Butkowski, City Administrator

Minneapolis Park and Recreation Board

By: _____ Dated: June 6, 2012
John Erwin, President MPRB

Attest: _____ Dated : 06 June, 2012
Michael P. Schmidt, Board Secretary

Approved as to Form, Legality, and Execution

By: _____ Dated: June 6, 2012
MPRB Attorney

City of St. Anthony Village

By: _____ Dated: 2/28, 20 12

Jerome O. Faust, Mayor

Attest: _____ Dated: 2/28, 20 12

Mark Casey, City Manager

City of Saint Paul

By: _____ Dated: 5/29, 20 12
Chris Coleman, Mayor

Attest: _____ Dated: 5/25, 20 12
Director of Finance and Management Service

Approved as to Form

By: Lisa K. Veith Dated: 5/18/12, 20 12
Assistant City Attorney

Protect it. Pass it on.

MISSISSIPPI WATERSHED MANAGEMENT ORGANIZATION

MWMO Bylaws

City of Columbia Heights

City of Fridley

City of Hilltop

City of Lauderdale

City of Minneapolis

City of Saint Anthony Village

City of Saint Paul

Minneapolis Park and Recreation Board

Prepared for the MWMO by staff

MWMO Bylaws

Prepared for the MWMO by

Douglas Snyder, Executive Director

Zhenya Stone, Office Administrator

Suggested citation:
Mississippi Watershed Management Organization. 2014. MWMO Bylaws.

Front Cover:
Upper Photo: The rare and elusive blue-winged teal resting during migration in the Mississippi River Critical Area near downtown Minneapolis. Photograph by B. Jastram, Mississippi Watershed Management Organization.
Lower Photo: Courtesy of the MWMO Museum of Natural History.

Protect it. Pass it on.

MISSISSIPPI WATERSHED MANAGEMENT ORGANIZATION

2522 Marshall Street NE
Minneapolis, Minnesota 55413-0136

(612) 465-8780
(612) 465 8785 fax

www.mwmo.org

MWMO Bylaws

The MWMO is a joint powers watershed management organization created under the requirements of the Metropolitan Water Management Act (MS 103B.211) and Minnesota Rules 8410. The MWMO activity is guided by 3 primary documents: 1) the Joint and Cooperative Agreement (JCA), 2) the Bylaws and 3) the Comprehensive Watershed Management Plan (Plan).

The JCA defines the MWMO:

- Membership and makeup of Board of Commissioners;
- Legal Purpose of the Organization;
- Powers and Duties of the Board of Commissioners;
- Financial Obligations of Members;
- Duration, Dissolution, Amendments and Effective Date of the agreement; and
- Legal Description of the Watershed Boundaries.

The intent of the Bylaws is to supplement the JCA by describing the administrative processes of the MWMO. The Bylaws establish rules governing conduct and procedure of the Board of Commissioners of the Mississippi Watershed Management Organization in Hennepin and Ramsey Counties, Minnesota pursuant to Minnesota Statutes, Chapter 103B.

Key components of the Bylaws are:

- Regular and Special Meeting order of business, location and notification;
- Board Committees and responsibilities; and
- Board Officers.

The Bylaws may be updated periodically throughout the year. The most recent version will be available on the MWMO's website at www.mwmo.org.

Protect it. Pass it on.
MISSISSIPPI WATERSHED MANAGEMENT ORGANIZATION

2522 Marshall Street NE
Minneapolis, Minnesota 55413

(651) 287 0948
(651) 287 1308 fax

www.mwmo.org

Bylaws Approved by MWMO Board 20140102

Mississippi Watershed Management Organization Bylaws

These Bylaws establish rules governing conduct and procedure of the Board of Commissioners of the Mississippi Watershed Management Organization in Anoka, Hennepin and Ramsey Counties, Minnesota pursuant to Minnesota Statutes, Chapter 103B as amended and in conformity therewith.

For the purpose of these Bylaws, the terms used herein shall have the meanings defined in the Joint and Cooperative Agreement for the Mississippi Watershed Management Organization (the "Agreement").

Commission Meetings

Section 1: The legal name of the watershed management organization shall be Middle Mississippi River Watershed Management Organization d/b/a Mississippi Watershed Management Organization.

Section 2: Regular meetings of the Commission shall be held at such locations and at such times as are specified from time to time by resolution of the Commission. The Executive Director shall cause copies of all such resolutions to be provided promptly to each of the Members and filed in the primary offices of the Commission. In the event the Commission determines to hold a regular meeting at a location or time other than as specified in such resolution, such meeting shall be deemed a special meeting for purpose of giving notice. Notice of all such meetings shall be given in accordance with these bylaws to commissioners, alternates, and members and in accordance with Minn. Stat., Chapter 13D to the public.

For purposes of posting notices in accordance with Minn. Stat. §13D.04, the principal bulletin board of the Commission shall be the bulletin board at the Commission administrative offices. Notices will be mailed to all Members for purposes of posting such notices on the principal bulletin board of the Members. However, bulletin boards other than the principal bulletin board of the Commission will not be deemed to be principal bulletin boards of the Commission for purposes of Minn. Stat. §13D.04.

Section 3: Written notice of regular meetings of the Commission shall be mailed to the Commissioners, Alternates, and their member council's staff (Columbia Heights –City Clerk, Hilltop – Administrator, Fridley – City Manager, Minneapolis - City Clerk; St. Anthony - City Manager; Lauderdale - City Administrator; St. Paul - City Clerk; Minneapolis Park Board - Assistant Superintendent for Administration) at least two weeks prior to each meeting. All other correspondence from the Watershed Management Organization Staff shall be sent to the same parties. Other arrangements for sending Watershed Management Organization Staff correspondence will be arranged with the individual Commissioners.

Section 4: Special meetings of the Commission may be called by the Chair or any two Commissioners. At least three days' notice of the meeting must be provided in accordance with the Agreement. Notification will be mailed to the same parties as listed in Section 3.

Section 5: Locations, dates and times of rescheduled regular meetings and special meetings will be mailed to the same parties as listed in Section 3. Each Commissioner is responsible for the posting of such notices for his or her community.

Section 6: All meetings shall be conducted in accordance with Robert's Rules of Order Revised, except as otherwise provided in the Agreement or these bylaws.

Section 7: The usual order of business at all meetings, unless changed by the Commissioners, shall be as follows:

A. Call to Order
B. Roll Call
C. Approval of Agenda
D. Consent Agenda
E. Approval of Minutes of Previous Meeting
F. Business
G. Announcements
H. Scheduling of Next Meeting
I. Adjournment

Section 8: The MWMO Executive Committee, made up of the Chair, Vice-Chair, and Treasurer, will meet as necessary to perform the following duties:

A. Authorize and s~~S~~ign checks for MWMO expenditures
B. Review prepared agenda items for MWMO Board meetings
C. Advise the executive director of MWMO policies and procedures
D. Act on any MWMO personnel issues as defined by the Employee Handbook**Section 9:** These bylaws may be amended at any regular or special meeting of the Commission, provided that ten days' prior notice of the proposed amendment has been furnished to each Commissioner and each member.

Section 10: A majority vote of Commissioners present shall be necessary to adopt any amendment to these bylaws.

Section 11: In any instance where these bylaws are in conflict with the Joint and Cooperative Agreement, the Agreement shall control.

Section 12: The Board of Commissioners, administrator and staff shall function in the manner of a Plan B city; where, the board exercises legislative and policy authority and appoints an executive director to exercise administrative authority. The executive director, appointed by and responsible to the board of commissioners, has the powers and duties as defined in Minn. Stat. §412.651, and its revisions, related to the appointment and removal of all other employees.

Adopted this _____ day of _____, 2014.

_____, Chair

Attest

_____, Vice-Chair

Appendix B

MWMO Standards

3.1.3 THE MWMO'S STANDARDS LANGUAGE

1. **Stormwater Management Standards**
   a. Any project creating greater than one acre of land disturbance is subject to the standards below.
   b. The MWMO's Standards, or higher, must be adopted by local units of government and incorporated into their stormwater ordinance or other regulatory control.
   c. In order to reduce regulatory complexity, a member may request the MWMO to allow stormwater rules set forth by adjacent watershed management organizations to govern development so long as they can be shown to be substantially equal to or greater than the level of protection afforded by the MWMO Standards.
   d. Road mill and overlay project activities need only to comply with MWMO erosion and sediment control standards.
   e. See the land disturbance definition for activities that shall not be considered land disturbance for the purposes of determining permanent stormwater management requirements.

2. **Rate Control**
   Runoff rates for the proposed activity shall meet the member cities and MS4's runoff rate control requirements, using the member cities' and MS4's required critical storm events (as defined by Atlas 14 Volume 8 and/or subsequent revisions). Runoff rates for the proposed activity and pre-development shall be determined using an Atlas 14-based (nested, regional, state) rainfall distribution using NRCS-approved methodology.

   All area contributing to the practice shall be accounted for in the design of the rate control practice. This includes areas off site and beyond the public right-of-way that will be contributing to the practice.

3. **Water Quality / Volume Control**
   a. For nonlinear projects, without limitations, that disturb one or more acre of land, 1.1 inches of runoff from the new and fully reconstructed impervious surfaces shall be captured and retained on site.
   b. For linear projects on sites, without limitations, that disturb one or more acre of land, the larger of the following shall be captured and retained on site:
      i. 0.55 inches of runoff from the new and fully reconstructed impervious surfaces
      ii. 1.1 inches of runoff from the net increase in impervious area
   c. For projects on sites with limitations, the MWMO Design Sequence Flow Chart (Appendix I) or a MWMO-approved alternative shall be used to identify a path to compliance through Flexible Treatment Options.
      i. The MWMO will develop a MOU with individual member cities and MS4's to address flexible treatment option #3 off site mitigation conditions.

4. **Volume Control Guidance (recommended procedures for volume control projects)**
   a. Infiltration volumes and facility sizes shall be calculated using the appropriate hydrologic soil group classification, ASTM Unified Soil Class Symbol, and design infiltration rate from Table B. Select the design infiltration rate from Table B based on the least permeable soil horizon within the first five feet below the bottom elevation of the proposed infiltration management practice. The information provided in Table B is intended to be used in the following manner:

i. For preliminary design purposes, refer to the NRCS soil survey to identify the hydrologic soil groups found on site. This information provides a preliminary indication of the infiltration capacity of the underlying soils.
ii. After volume control/infiltration practices have been located on the grading plans, perform soil borings in the exact location of the proposed practices and in the quantity as described in the Minnesota Stormwater Manual Wiki (Minnesota Pollution Control Agency, 2014) as amended. Soil borings should be logged using the USDA Soil Textural Classification System and the ASTM Unified Soil Class Symbol.
iii. The combination of all the aforementioned information will allow the designer to identify the appropriate design infiltration rate. As the Minnesota Stormwater Manual States, "these infiltration rates represent the long-term infiltration capacity of a constructed infiltration practice and are not meant to exhibit the capacity of the soils in the natural state". A permit applicant can submit field measurements and revised rates (using the correction factors provided in the Minnesota Stormwater Manual) if there is reason to believe the long-term infiltration rates will be other than the design infiltration rates provided in Table B.

b. A geotechnical investigation shall be performed in the location of the proposed volume control practices to confirm or determine underlying soil types, the depth to the seasonally high groundwater table, and the depth to bedrock or other impermeable layer.
c. Infiltration BMPs shall drawdown in the time specified in the Minnesota Stormwater Manual Wiki for that BMP, or less if required by another entity with jurisdiction. Drawdown time and maximum ponding depths are defined in the Minnesota Stormwater Manual Wiki.
d. Infiltration stormwater management practices must be designed to include adequate pretreatment measures before discharge of runoff to the primary infiltration area, consistent with the Minnesota Stormwater Manual Wiki.
e. Design and placement of infiltration stormwater management practices shall be done in accordance with the Minnesota Department of Health guidance called "Evaluating Proposed Stormwater Infiltration Projects in Vulnerable Wellhead Protection Areas." (Final version to govern)
f. Specific site conditions may make infiltration difficult, undesirable, or impossible. Some of these conditions are listed in Table A. A more comprehensive list is provided in the MWMO Design Sequence Flow Chart in Appendix I.

Table A: Site Conditions Considered Undesirable for Infiltration Stormwater Management Practices

Type	Specific Site Conditions	Submittal Requirements
Potential Contamination	Potential Stormwater Hotspots (PSHs)	PSH locations and flow paths, Remediation Alternatives Considered
	Contaminated Soils	State Permitted Brownfield Documentation, Soil Borings, Remediation Alternatives Considered, Site design alternatives considered
Physical Limitations	Low Permeability (Type D Soils)	Soil Borings
	High Permeability (soils infiltrating greater than	Soil Borings

	8.3 inches/hour)	
	Bedrock within 5 vertical feet of bottom of infiltration area	Soil Borings
	Potential Adverse Hydrologic Impacts (e.g., impacting perched wetland)	Documentation of Potential Adverse Hydrologic Impacts
	Seasonal High Groundwater within 5 vertical feet of bottom of infiltration area	Soil Borings
	Karst Areas	Soil Borings
	Steep Slopes	Steep Slope Determination
Land Use Limitations	Utility Locations	Site Map, Alternatives considered
	Zoning or Land Use Limitations (Parking, Density, Setbacks, etc.)	Alternatives considered, Documentation of Infeasibility
	Adjacent Wells within 200 feet or inside Wellhead Protection Area or Drinking Water Supply Management Areas (DWSMA)	Well Locations or DWSMA
	Building Foundation	Ten (10) feet

Source: Modified from Minnesota Pollution Control Agency Minimal Impact Design Standards Design Sequence Flow Chart, December 5, 2013

Note: the most recent version of the Minnesota Stormwater Manual should be used; Table A is provided as optional guidance to the cities

Table B. Design Infiltration Rates

Hydrologic Soil Group	Soil Textures[1]	ASTM Unified Soil Class Symbols	Rate
A	Gravel, sandy gravel, silty gravel	GW, GP, GM, SW	1.63 in/hr
	Sand, loamy sand, sandy loam	SP	0.80 in/hr
B	Loam, silt loam	SM	0.45 in/hr
		MH	0.30 in/hr
C	Sandy clay loam	ML	0.20 in/hr
D	Clay, clay loam, silty clay loam, sandy clay, silty clay	CL, CH, OH, OL, GC, SC	0.06 in/hr

Source: Minnesota Stormwater Manual Wiki, October 2014

Note: Design infiltration rates from the most recent version of the Minnesota Stormwater Manual should be used

1 Adapted from the U.S. Department of Agriculture, Natural Resources Conservation Services, 2005. National Soil Survey Handbook, title 430-VI.

5. **Maintenance**
   a. Practices must continue to perform as approved. Owners must follow an inspection and maintenance schedule that has been approved by the permitting entity and correct any post-construction performance issues that arise.
   b. All stormwater management structures and facilities, including volume reduction stormwater management practices, shall be maintained to assure that the structures and facilities function as originally designed. The maintenance responsibilities must be assumed by either the municipality's acceptance of the required easements dedicated to stormwater management purposes, or by the applicant executing and recording a maintenance agreement, or by another enforceable means acceptable to the LGU. If used, the recordable executed agreement must be submitted to the municipality prior to issuance of the project approval from the city." Public developments will require a maintenance agreement in the form of a Memorandum of Agreement or an approved Local Water Management Plan or in compliance with an MS4 Permit that details the methods, schedule, and responsible parties for maintenance of stormwater management facilities for permitted development. A single Memorandum of Agreement for each local government unit may be used to cover all stormwater management structures and facilities required herein, including volume reductions management practices, within the LGU's jurisdiction. This maintenance plan shall address snow management.

6. **Drainage Alterations**
   No person shall alter stormwater flows (resulting in an increase in stormwater flows or a change in existing flow route) at a property boundary by changing land contours, diverting or obstructing surface or channel flow, or creating a basin outlet, without first obtaining any necessary permits from the city..

7. **Bounce and Duration Control**
   a. The project must meet hydroperiod standards adapted from "Stormwater and Wetlands Planning and Evaluation Guidelines for Addressing Potential Impacts of Urban Stormwater and Snowmelt Runoff on Wetlands," (Minnesota Stormwater Advisory Group, June 1997), as follows:
      i. Wetland Susceptibility Class = Highly Susceptible; Permit Storm Bounce = Existing; Inundation Period for 2-Year event = Existing; Inundation Period for 10-year or Greater Event = Existing
      ii. Wetland Susceptibility Class = Moderately Susceptible; Permit Storm Bounce = Existing plus 0.5 feet; Inundation Period for 2-Year event = Existing plus 1 days; Inundation Period for 10-year or Greater Event = Existing plus 7 days
      iii. Wetland Susceptibility Class = Slightly Susceptible; Permit Storm Bounce = Existing plus 1.0 feet; Inundation Period for 2-Year event = Existing plus 2 days; Inundation Period for 10-year or Greater Event = Existing plus 14 days
      iv. Wetland Susceptibility Class = Least Susceptible; Permit Storm Bounce = No Limit; Inundation Period for 2-Year event = Existing plus 7 days; Inundation Period for 10-year or Greater Event = Existing plus 21 days

8. **Flood Control**
   Flood control for the proposed activity shall meet the member cities or MS4's flood control requirements. Member cities and MS4's flood control requirements should minimize property damage due to excess water.

9. Erosion and Sediment Control

a. Erosion and sediment control measures shall meet the standards for the General Permit Authorization to Discharge Stormwater Associated with Construction Activity Under the National Pollutant Discharge Elimination System/State Disposal System Permit Program, Permit MN R100001 (NPDES General Construction Permit), issued by the Minnesota Pollution Control Agency, except where more specific requirements are required.

b. Activity shall be phased to minimize disturbed areas subject to erosion at any one time.

c. All construction site waste—such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site—shall be properly managed and disposed of so they will not have an adverse impact on water quality.

d. If silt fence is installed it shall conform to sections 3886.1 and 3886.2, Standard Specifications for Construction, Minnesota Department of Transportation (2005 ed.), as it may be amended.

Appendix C

Water Resource-Related Activities of Member Organizations

Water Resource-Related Activities of MWMO Member Organizations

Topics described in the table below that are not relevant to individual MWMO member organizations are omitted from Table 1 through Table 11, as applicable. Additional watershed resources and studies performed by the MWMO are available at: https://www.mwmo.org/monitoring-and-reports/watershed-assessment/

Jurisdictional Authorities and Responsibilities within the MWMO	
Water Category and Topics	**Applicability/Description for each Topic**
Wetlands	
Wetland Conservation Act (WCA)	Applies to the drainage, fill, or excavation of jurisdictional wetlands (meeting the criteria for soil, hydrology, and vegetation outlined in the 1987 Army Corps of Engineers Wetland Delineation Manual) in the state that are not regulated by MDNR as Public Waters wetlands. Proposed projects are required to demonstrate compliance with "sequencing": 1) that wetland impacts are avoided as much as possible, 2) that to the extent wetland impacts cannot be avoided, the wetland impacts are minimized, and 3) that unavoidable wetlands are repaired or replaced (including creating replacement wetland areas having equal or greater public value, if restoration opportunities are not reasonably available. Certain wetland activities are exempt from the act, allowing projects with minimal impact or projects located on land where certain pre-established land uses are present to proceed without regulation.

Water Resource-Related Activities of MWMO Member Organizations

Jurisdictional Authorities and Responsibilities within the MWMO	
Water Category and Topics	**Applicability/Description for each Topic**
Public Waters Work Permit	Applies to all water development activities below the ordinary high water level (OHWL) in public waters. The Public Waters Work Permit Program applies to those lakes, wetlands, and streams identified on DNR Public Water Inventory maps and those waters meeting criteria of Minnesota Statute 103G.005 Sub. 15. Proposed projects affecting the course, current, or cross-section of these waterbodies may require a Public Waters Work Permit. Public waters in the MWMO include: - Mississippi River - Loring Pond (PWI # 27-0655P) - Mallard Marsh (PWI# 62-0259W) - Sullivan (Sandy) Lake (PWI# 02-0080P) - Highland (Unnamed) Lake (PWI# 02-0079P) - Unnamed Lake (PWI #02-687P) - Unnamed Wetland (PWI# 02-0686W)
Wetland Inventories	Create and maintain wetland inventories
Monitoring Programs	Administers, conducts, and coordinates monitoring of waterbodies.
Surface Waters	
NPDES Phase I and II Stormwater Permit	Applies to Minneapolis and St. Paul and all metro cities operating a Municipal Separate Storm Sewer System (MS4) and other designated entities. Program is designed to reduce the amount of sediment and pollution that enters surface and ground water from storm sewer systems to the maximum extent practicable. Stormwater discharges associated with MS4s are regulated and the owners or operators of these systems are required to develop a SWPPP that incorporates best management practices applicable to their jurisdiction. An update to the MPCAs MS4 General Permit was adopted in 2020.
NPDES Construction Permit	Applies to anyone disturbing one acre or more. Permit covers measures to control erosion and sedimentation during construction activity and long-term post-construction water quality and stormwater management.
NPDES Industrial Stormwater General Permit	Applies to industrial and municipal facilities with stormwater discharges associated with 10 categories of industrial activities. Facilities that have applied for this permit and have coverage under this permit must develop and implement a SWPPP designed to eliminate or minimize stormwater contact with significant materials that may result in polluted stormwater discharges from the facility.

Water Resource-Related Activities of MWMO Member Organizations

Jurisdictional Authorities and Responsibilities within the MWMO	
Water Category and Topics	**Applicability/Description for each Topic**
Water Quality Standards	Water Quality Standards are the foundation of the water quality-based pollution control program mandated by the Clean Water Act. Water Quality Standards define the goals for a waterbody by designating its uses, setting criteria to protect those uses, and establishing provisions to protect waterbodies from pollutants. In Minnesota, the Clean Water Act is administered through the authority of the MPCA.
Impaired Waters	Applies to water bodies not meeting water quality standards. The federal Clean Water Act (CWA) requires states to adopt water quality standards to protect waters from pollution. These standards define how much of a pollutant can be in the water and still allow it to meet designated uses, such as drinking water, fishing, and swimming. Waters not meeting water quality standards consistent with designated uses are listed as impaired and placed on the "impaired waters 303(d) list." Total Maximum Daily Load (TMDL) studies are performed to identify pollutant load reductions necessary to achieve water quality standards.
Surface Water Management	Covers the development of Local Water Management Plans (WMPs) to address a broad range of water resource issues.
Water Appropriations Permit	Permit is required for all users withdrawing more than 10,000 gallons per day or 1 million gallons per year from surface or groundwater and for consumptive or non-consumptive use.
Public Water Access	Locations of access points into public waters.
Monitoring Programs	Administers, conducts, and coordinates monitoring of water bodies.
Floodplains/Flooding	
Floodplain Programs	Floodplain programs promote and ensure sound land use development in floodplain areas in order to promote the health and safety of the public, minimize loss of life, and reduce economic losses caused by flood damages by supporting both corrective and preventative measures for reducing flood damage. Programs often include requirements for zoning, subdivision or building, and special purpose floodplain ordinances.
Floodplain Studies and Mapping	Floodplain studies result in the development of maps of a community on which special flood hazard areas have been delineated, often defining where any floodplain regulations may be applied. Mapping certified by FEMA serves as a basis for the NFIP program, but communities and WMOs may also maintain floodplain maps for local use outside of the NFIP program.
Monitoring Programs	Administers, conducts, and coordinates monitoring of water bodies.
Shoreland	

Water Resource-Related Activities of MWMO Member Organizations

Jurisdictional Authorities and Responsibilities within the MWMO	
Water Category and Topics	**Applicability/Description for each Topic**
Shoreland Management Program	The Shoreland program provides the framework for statewide standards that local governmental units must adopt into their own land use controls to provide for the orderly development and protection of shorelands (both rivers and lakes). At a minimum, shorelands are defined as lands within 1,000 feet of a lake greater than 25 acres (10 acres in a municipality) or within 300 feet of a river and its designated floodplain defined by the ordinary high water level (OHWL).
Monitoring Programs	Administers, conducts, and coordinates monitoring of water bodies.
Navigable Waters	
Monitoring Programs	Administers, conducts, and coordinates monitoring of water bodies.
Groundwater/Drinking Water	
Water Appropriations	A water appropriation issue by the DNR is required for all users withdrawing more than 10,000 gallons of water per day or 1 million gallons per year, with several exemptions.
Groundwater Pollution Standards (Safe Drinking Water Act)	Establishes water quality standards to protect groundwater resources from pollution.
Public Drinking Water Program	The Public Drinking Water Program was developed to monitor and regulate the construction and operation of public water supply systems.
Source Water Assessment Program	The Source Water Protection Program was developed to help prevent contaminants from entering public drinking water sources, and includes wellhead protection, source water assessments, and protection of surface water intakes.
Wellhead Protection Program	The Wellhead Protection Program helps prevent drinking water from becoming polluted by managing potential sources of contamination in the area which supplies water to a public well.
Well Management Program	The Well Management Program protects both public health and groundwater quality by assuring the proper construction of new wells and borings, and the proper sealing of unused wells and borings.
Monitoring Programs	Administers, conducts, and coordinates monitoring of water bodies.
Wastewater Treatment	
Industrial Discharge Permit	Applies to industrial discharges into the Metropolitan Disposal System (public sanitary sewer system) to ensure compliance with local and federal regulations (unless MCES determines that the wastewater has an insignificant impact on public sewers).
NPDES Industrial and Municipal Wastewater Permit	Applies to a number of different waste types and activities, including industrial process wastewater, contact and non-contact cooling water, stormwater, contaminated ground water pumpouts, water supply treatment backwash, and wastewater treatment sludges.
Inflow and Infiltration Program	Inflow and infiltration is clear water that enters the sewer system from a variety of sources
Monitoring Programs	Administers, conducts, and coordinates monitoring of water bodies.

Water Resource-Related Activities of MWMO Member Organizations

Jurisdictional Authorities and Responsibilities within the MWMO	
Water Category and Topics	**Applicability/Description for each Topic**
Habitat/Ecological Resources	
Rough Fish Removal Permits	Permits required for any fisheries impacting activities within any of the water bodies identified as part of the Public Waters Inventory (PWI)
Fish Transport and Stocking Permits	Permits required for any fisheries impacting activities within any of the water bodies identified as part of the Public Waters Inventory (PWI)
Fishing Tournament Permits	Permits required for any fisheries impacting activities within any of the water bodies identified as part of the Public Waters Inventory (PWI)
Aquatic Plant Management and Nuisance Control Permits	Permits required for any fisheries-impacting activities within any of the water bodies identified as part of the Public Waters Inventory (PWI)
Aeration System Operating Permit	Permits required for any fisheries-impacting activities within any of the water bodies identified as part of the Public Waters Inventory (PWI)
Upper Mississippi River Restoration Program	Intended to ensure the viability and vitality of the Upper Mississippi River System's (UMRS) diverse and significant fish and wildlife resources.
Upper Mississippi River Resource Forum	The River Resources Forum, or RRF, is a state and federal agency partnership for addressing resource issues concerning the Upper Mississippi River system within the St. Paul District jurisdiction. Participating agencies include: the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the U.S. Coast Guard, the Environmental Protection Agency, the Natural Resources Conservation Service, the National Park Service, the MPCA, and MDNR.
Continuing Authorities Program (CAP)	Authority to implement Aquatic Ecosystem Restoration projects designed to develop aquatic ecosystem restoration and protection projects that improve the quality of the environment, are in the public interest and are cost effective. Also, the authority to implement Project Modifications, designed to modify existing USACOE projects for the purpose of improving environmental quality.
Other Ecological Inventories	Programs that inventory ecological data such as native plants and plant communities, rare plant and animal species, and functional landscapes.
Monitoring Programs	Administers, conducts, and coordinates monitoring of water bodies.
Misc. Habitat/Ecological Studies	
Hazardous Waste	
Hazardous Waste	Wide range of programs dealing with hazardous wastes
Contaminated Sites Database	Database of contaminated sites
Non-water-based transportation of Hazardous Wastes	Rules and regulations governing the movement of hazardous wastes by means other than by water.

Water Resource-Related Activities of MWMO Member Organizations

Jurisdictional Authorities and Responsibilities within the MWMO	
Water Category and Topics	**Applicability/Description for each Topic**
Water-based transportation of hazardous waste	Rules and regulations governing the movement of hazardous wastes over water.
Above- and below-ground storage tanks	Regulates design, use of petroleum storage tanks, and the cleanup of leaks.
Monitoring Programs	Administers, conducts, and coordinates monitoring of waterbodies.
Power Generation	
Hydropower License	License needed for operating hydropower facilities
Environmental Review	
Environmental Review	Conducts environmental reviews of certain projects (as outlined in the state rules) and is typically in the form of an Environmental Assessment Worksheet (EAW) or an Environmental Impact Statement (EIS).
Mississippi River Corridor Plans	
Mississippi River Corridor Plans	A variety of plans have been developed by various agencies to manage land use and development along the Mississippi River Corridor
General Contact Information	

Water Resource-Related Activities of MWMO Member Organizations

Table 1. Water Resource-Related Activities of MWMO Member Organizations: City of Saint Anthony

Water Category and Topics	Activity Type	MWMO	City of Saint Anthony
Wetlands			
Wetland Conservation Act (WCA)	Authority		- Administers WCA as the LGU - Develops and enforces local controls - Wetland regulation is described in the City local water management plan
	Contact		See general contact information at end of table
	Responsibility		May create comprehensive wetland management plan
	Contact		See general contact information at end of table
Public Waters Work Permit	Authority	Reviews and comments on Public Works applications before DNR (e.g. dam repair permits)	
	Contact	See general contact information at end of table	
Wetland Inventories	Responsibility	Conduct a Wetland Function and Value Assessment within the Watershed	
Monitoring Programs	Responsibility	Wetland monitoring program Monitor Kasota Ponds wetland complex.	
	Contact	See general contact information at end of table	
Surface Waters			
NPDES Phase I and II Stormwater Permit	Authority	Opportunity to comment on member cities annual reports, generally in April of each year	- An MS4. Maintains a Stormwater Pollution Prevention Program (SWPPP) to reduce the discharge of pollutants to the maximum extent practicable. The SWPPP covers six minimum control measures: 1. Public education and outreach 2. Public participation/involvement 3. Illicit discharge detection and elimination 4. Construction site runoff control 5. Post-construction site runoff control 6. Pollution prevention/good housekeeping Permit requires city to adopt ordinances to address

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Saint Anthony
			illicit discharge, construction site runoff, and post-construction runoff control. Permit requires city to adopt ordinances to address illicit discharge, construction site runoff, and post-construction runoff control. - Administers ordinances, reviews plans, and issues permits for compliance with MS4 Permits (SWPPP). This includes an approved SWPPP for all building and land use zoning permits.
	Contact		Jeremy Gumke 612-782-3441 JeremyGumke@savmn.com
NPDES Construction Permit	Authority		City ordinance chapter 153 generally requires a city permit for all land disturbing activity of one acre or more of land.
	Contact		See general contact information at end of table.
NPDES Industrial Stormwater General Permit	Authority		City erosion and stormwater ordinances may apply, depending on size of disturbance
	Contact		See general contact information at end of table
Stormwater Treatment Standards	Authority	Sets stormwater quality and quantity (rate and volume) performance standards watershed-wide for areas within its jurisdiction that are at least as stringent as State Stormwater Standards.	Chapter 153 of the City code references stormwater management performance standards defined in the City's Comprehensive Water Resources Management Plan.
	Contact	See general contact information at end of table	Steve Grittman City Planner 763-957-1100 planner@savmn.com
Impaired Waters	Responsibility	The MWMO is not a MS4 (i.e., wasteload reductions identified in TMDLs are not assigned to the MWMO). However, it may voluntarily work with the MS4's to plan and implement TMDLs within the watershed.	The City of Saint Anthony is responsible for implementing measures to meet the defined wasteload allocation for their Municipal Separate Storm Sewer System (MS4) for approved TMDLs.

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Saint Anthony
	Contact	See contact information at end of table.	See general contact information at end of table
Surface Water Management	Authority	- Adopts Water Management Plan (WMP) per approval of BWSR. 10-year WMP addresses MWMO standards, goals, strategies, implementation actions to be carried out, and descriptions of program areas. - Requires local governments to adopt their own Water Management Plan consistent with WMO Plan. - Reviews and approves local water management plans. Denial of local water management plan has potential to holdup approval of City comprehensive plan.	- Adopts local water management plan consistent with MWMO Water Management Plan. - Current Plan is included in the 2040 Comprehensive Plan: https://www.savmn.com/DocumentCenter/View/979/St-Anthony-2040-Comprehensive-Plan
	Contacts	See general contact information at end of table	See general contact information at end of table
Monitoring Programs	Responsibility	Monitoring and Outfall Study. An ongoing program to establish baseline water quantity and quality data that can be used for management of outfalls and receiving waters. Six sites are monitored, five stormwater outfalls discharging to the River, and one site at Loring Pond.	
	Contact	See general contact information at end of table	
Floodplains-Flooding			
Floodplain Programs	Authority		- Administers and enforces MDNR-approved floodplain ordinances including review of development applications to ensure compliance with ordinance; - Administers NFIP (National Floodplain Insurance Program). - Floodplain ordinance is city code Title XV: Land Usage - Chapter 154: Flood Issues
	Contact		See general contact information at end of table
	Responsibility	Requires members to have a MDNR-approved	

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Saint Anthony
		Floodplain Ordinance as part of the review of local water management plans for inclusion of appropriate floodplain policies	
	Contact	See general contact information at end of table	
Localized flooding Studies and Mapping	Authority		While Public Works manages "localized flooding" studies and projects, Public Works does not have a role in FEMA floodplain planning, mapping, or administration. The city may maintain local floodplain mapping.
	Contact		See general contact information at end of table
	Responsibility	MWMO leads or participates in watershed flooding studies for member cities	
	Contact	See general contact information at end of table	
Monitoring Programs	Responsibility	Mississippi river gage reading program	
Shoreland			
Shoreland Management Program	Responsibility	- Requires members to have a MDNR-approved Shoreland Ordinance - Reviews local water management plans for inclusion of appropriate shoreland management policies. - Provides guidance on restoration of eroded Mississippi Riverbank areas.	
	Contact	See general contact information at end of table	
Groundwater - Drinking Water			
Wellhead Protection Program	Authority		Implements the local wellhead protection plan, adopted in 2005. The city's wellhead protection area is located within the MWMO.
	Contact		See general contact information at end of table
Monitoring Programs	Responsibility	Monitor Mississippi River	Drinking water quality reports available at: https://www.savmn.com/204/Water-Sewer

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Saint Anthony
	Contact	See general contact information at end of table	
Wastewater Treatment			
NPDES Industrial and Municipal wastewater permit	Responsibility	Funds programs to separate stormwater from entering sanitary sewer system.	
	Contact	See general contact information at end of table	
Inflow and Infiltration Program	Authority		City Code Chapter 50 regulates/prohibits discharges to the sanitary sewer.
	Contact		See general contact information at end of table
	Responsibility	Provide information on potential surface and groundwater interaction hazards	
	Contact	See general contact information at end of table	
Habitat - Ecological Resources			
Other Ecological Inventories	Responsibility	Conduct studies on a local watershed scale that inventory ecological data such as native plants and plant communities, rare plant and animal species, and functional landscapes.	
Hazardous Waste			
Contaminated Sites Database	Responsibility	Gather information and data on contaminated soils and groundwater affecting groundwater and surface water interactions	
	Contact	See general contact information at end of table	
Environmental Review			
Environmental Review	Authority		Reviews EAW, EIS, and projects for environmental impacts in the City, as needed

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Saint Anthony
	Contact		See general contact information at end of table
	Responsibility	Reviews and comments on Major redevelopment EAW/EIS within the Watershed regarding impacts on water quality, rate, and volume	
	Contact	See general contact information at end of table	
General Contact Information			
		Mississippi Watershed Management Organization 2522 Marshall St NE, Minneapolis, MN 55413 Telephone: (612) 465-8780 Web: http://www.mwmo.org/	City of Saint Anthony 3301 Silver Lake Road Saint Anthony, MN 55418 Telephone: (612) 782-3301 Web: http://www.ci.saint-anthony.mn.us/

Water Resource-Related Activities of MWMO Member Organizations

Table 2. Water Resource-Related Activities of MWMO Member Organizations: City of Minneapolis

Water Category and Topics	Activity Type	MWMO	City of Minneapolis
Wetlands			
Wetland Conservation Act (WCA)	Authority		- Administers WCA as the LGU - Develops and enforces ordinances - Wetland protection included in "Protection of Natural Features" ordinance of City Code
	Contact		Public Works Surface Water and Sewers Division
	Responsibility		May create comprehensive wetland management plan
	Contact		See general contact information at end of table
Public Waters Work Permit	Authority	Reviews and comments on Public Works applications before DNR (e.g. dam repair permits)	
	Contact	See general contact information at end of table	
Wetland Inventories	Responsibility	Conduct a Wetland Function and Value Assessment within the Watershed,	
Monitoring Programs	Responsibility	Wetland monitoring program Monitor Kasota Ponds wetland complex.	
	Contact	See general contact information at end of table	
Surface Waters			
NPDES Phase I and II Stormwater Permit	Authority	Opportunity to comment on member cities annual reports, generally in April of each year	The City and MPRB are co-permittees of NPDES/SDS Permit No. MN 0061018, which is a Phase 1 permit for the Minneapolis stormsewer system. First issued in 2000, this permit has been reissued by the MPCA in 2011 and again in 2018. Following issuance of the permit, a Stormwater Management Program will be developed with the following categories: Public Education and Outreach, Public Participation, Illicit Discharge Detection and Elimination, Construction Site Stormwater Runoff Control, Post-Construction Stormwater Management in New Development

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Minneapolis
			and Redevelopment, Pollution Prevention/Good Housekeeping for Municipal Operations, Pilot Projects, and Monitoring and Assessment. Annual reporting is done to the MPCA. The Stormwater Management Program was last updated in July 2019.
	Contact	See general contact information at end of table	Public Works Surface Water and Sewers Division
NPDES Construction Permit	Authority		In addition to the NPDES Construction Permits which are issued by the MPCA, the City requires Erosion and Sediment Control Permits under its Chapter 52 Ordinance. A permit is required for any activity that disturbs more than 5 cubic yards or 500 ft^2 of soil. Chapter 54 of the Minneapolis Code of Ordinances requires a stormwater management plan, implementation, maintenance schedule and annual registration for any site or phased development of 1 or more acres.
	Contact		Public Works Surface Water and Sewers Division.
NPDES Industrial Stormwater General Permit	Authority		In addition to the NPDES Industrial Stormwater Permits which are issued by the MPCA, the City has requirements related to industrial sites and illicit discharges, primarily in Chapter 48 and Chapter 50 Ordinances.
	Contact		Regulatory Services Environmental Management
Stormwater Treatment Standards	Authority	Sets stormwater quality and quantity (rate and volume) performance standards watershed-wide for areas within its jurisdiction that are at least as stringent as State Stormwater Standards.	The City's requirements for development and re-development projects are in its Chapter 54 Ordinance, Stormwater Management.
	Contact	See general contact information at end of table	Public Works Surface Water and Sewers Division
Impaired Waters	Responsibility	The MWMO is not a MS4. However, it may voluntarily work with the MS4's to plan and implement TMDL's within the watershed.	The City of Minneapolis is responsible for implementing measures to meet the defined wasteload allocation for their Municipal Separate

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Minneapolis
			Storm Sewer System (MS4) for approved TMDLs.
	Contact	See general contact information at end of table	Public Works Surface Water and Sewers Division
Surface Water Management	Authority	- Adopts Water Management Plan (WMP) per approval of BWSR. 10-year WMP addresses MWMO standards, goals, strategies, implementation actions to be carried out, and descriptions of program areas. - Requires local governments to adopt their own Water Management Plan consistent with WMO Plan. - Reviews and approves local water management plans. Denial of local water management plan has potential to holdup approval of City comprehensive plan	- Adopts Local Surface Water Management Plan consistent with Water Management Plans of watershed organizations in Minneapolis (BCWMC, MWMO, MCWD, SCWD). - Current plan was adopted September, 2019
	Contacts	See general contact information at end of table	Public Works Surface Water and Sewers Division http://www2.minneapolismn.gov/publicworks/stormwater/stormwater_local-surface
Water Appropriations Permit	Authority		City issues permits related to projects holding Water Appropriations Permits from the MDNR
	Contact		Regulatory Services Environmental Management
Monitoring Programs	Responsibility	Monitoring and Outfall Study. An ongoing program to establish baseline water quantity and quality data that can be used for management of outfalls and receiving waters. Six sites are monitored, five stormwater outfalls discharging to the River, and one site at Loring Pond.	City and MPRB carry out monitoring in accordance with their Phase 1 NPDES Permit
	Contact	See general contact information at end of table	Public Works Surface Water and Sewers Division.
Floodplains-Flooding			
Floodplain Programs	Authority		- Administers and enforces MDNR-approved floodplain ordinances including review of development applications to ensure compliance

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Minneapolis
			with ordinance; - Administers NFIP at the Local Level - Floodplain ordinance is Chapter 551, Article VII of the city code:
	Contact		Department of Community Planning and Economic Development – Planning
	Responsibility	Requires members to have a MDNR-approved Floodplain Ordinance as part of the review of local water management plans for inclusion of appropriate floodplain policies	Administers the Minneapolis Flood Mitigation Program, designing and implementing flood risk reduction projects to minimize the impact on the water quality of the receiving surface water, in addition to providing localized flooding relief
	Contact	See general contact information at end of table	Public Works Surface Water and Sewers Division
Localized Flooding Studies and Mapping	Authority		While Public Works manages "localized flooding" studies and projects, Public Works does not have a role in FEMA floodplain planning, mapping, or administration. The city may maintain local floodplain mapping.
	Contact		Department of Community Planning and Economic Development – Planning.
	Responsibility	MWMO leads or participates in watershed flooding studies for member cities	
	Contact	See general contact information at end of table	
Monitoring Programs	Responsibility	Mississippi river gage reading program	
Shoreland			
Shoreland Management Program	Authority		- Administers and enforces local shoreland management standard through planning and zoning ordinances for all development occurring within the Shoreland Overlay District (defined in the City of Minneapolis Ordinances). - Shoreland ordinance is included in Chapter 551, Article VI of the city code
	Contact		City of Minneapolis Department of Community

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Minneapolis
			Planning and Economic Development
	Responsibility	- Requires members to have a MDNR-approved Shoreland Ordinance - Reviews local water management plans for inclusion of appropriate shoreland management policies. - Provides guidance on restoration of eroded Mississippi Riverbank areas	
	Contact	See general contact information at end of table	
Monitoring Programs	Responsibility	Monitors Mississippi riverbank erosion	
	Contact	See general contact information at end of table	
Navigable Waters			
Monitoring Programs	Responsibility	Partnering with the City of Minneapolis Homeland Security department to monitor the riverway and its infrastructure	
	Contact	See general contact information at end of table	
Groundwater-Drinking Water			
Water Appropriations	Authority		Any well installations must be permitted by the City of Minneapolis Chapter 48.
	Contact		Department of Regulatory Services - Environmental Services (612) 673-3000
Groundwater Pollution Standards (Safe Drinking Water Act)	Authority		City works to prevent pollution of soil and groundwater as outlined in Chapter 48.
	Contact		Department of Regulatory Services - Environmental Services (612) 673-3000.
Public Drinking Water Program	Authority		No public wells are operating in the city, transient community water wells are operating at some

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Minneapolis
			Minneapolis parks and trails. Samples are taken in these wells annually to ensure the water is potable.
	Contact		Department of Regulatory Services - Environmental Services (612) 673-3000
Source Water Assessment Program	Authority		Implements the local source water protection plan. Part 1 was completed in 2005. Part 2 was completed in 2008. Local pollution control enforcement to prevent illegal disposal and discharge
	Contact		Public Works Water treatment and Distribution Division
	Responsibility	Share Mississippi River water quality data	
	Contact	See general contact information at end of table	
Wellhead Protection Program	Authority		Parts of the Richfield Wellhead protection area fall within South Minneapolis
	Contact		Public Works Water treatment and Distribution Division
Well Management Program	Authority		- The City of Minneapolis Monitoring and Recovery Well Program issues permits for the construction and sealing of wells (not including dewatering wells and environmental bore holes) as well as reviewing plans and inspecting construction and sealing of wells. - Maintains the well maintenance permit program for monitoring wells (excluding dewatering wells) within the City.
	Contact		City of Minneapolis Environmental Services
Monitoring Programs	Responsibility	Monitor Mississippi River	Drinking water quality reports available at: https://www2.minneapolismn.gov/government/departments/public-works/water-treatment-distribution/water-quality-reports/
	Contact	See general contact information at end of table	

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Minneapolis
Wastewater Treatment			
NPDES Industrial and Municipal Wastewater	Authority		The City and Metropolitan Council Environmental Services are co-permittees of NPDES/SDS Permit No. MN 0046744, which is a Combined Sewer System permit. The permit was issued in 1997.and expired June 30, 2001. An application for permit reissuance submitted in December 2000 has not been action on by the MPCA; however the parties are allowed to operate under the permit. Annual reporting is done to the MPCA. Additionally, MCES issues permits for industrial discharges to sanitary sewers in Minneapolis, and the City issues permits for any connections to sanitary sewers in Minneapolis.
	Contact		Public Works Surface Waters and Sewers Division
	Responsibility	Funds programs to separate stormwater from entering sanitary sewer system.	
	Contact	See general contact information at end of table	
Inflow and Infiltration Program	Authority		I/I Program is required by Metropolitan Council Environmental Services (MCES). Closely related to Combined Sewer Overflow Program. Program includes Chapter 56 Rainleader Ordinance, and capital projects and other programs to remove clear water (primarily stormwater) from the sanitary sewer system.
	Contact		Public Works Surface Waters and Sewers Division
	Responsibility	Provide information on potential surface and groundwater interaction hazards	
	Contact	See general contact information at end of table	
Habitat-Ecological			

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Minneapolis
Resources			
Other Ecological Inventories	Responsibility	Conduct studies on a local watershed scale that inventory ecological data such as native plants and plant communities, rare plant and animal species, and functional landscapes	
Misc. Habitat/Ecological Studies			The City Comprehensive Plan contains information about natural resources. https://minneapolis2040.com/topics/environmental-systems/
Hazardous Waste			
Contaminated Sites Database	Responsibility	Gather information and data on contaminated soils and groundwater affecting groundwater and surface water interactions	Minneapolis monitors locations of contaminated properties
	Contact	See general contact information at end of table	Regulatory Services Environmental Management
Non-water-based transportation of Hazardous Wastes	Authority		Responds to spills and administers cleanup (Environmental Services, Fire Department, and Public Works)
	Contact		Regulatory Services Environmental Management
Water-based transportation of Hazardous Waste	Authority		Responds to spills and administers cleanup (Environmental Services, Fire Department, and Public Works)
	Contact		Regulatory Services Environmental Management
Above- and below-ground storage tanks	Authority		Registers operation and permits installation, removal or abandonment in place of all Underground Storage Tanks (UST) in Minneapolis and all Above-Ground Storage Tanks (AST) over 250 gallons, or cumulative AST storage exceeding 250 gallons for compliance to state and local regulations.

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Minneapolis
	Contact		Regulatory Services Environmental Management
Power Generation			
Hydropower License	Responsibility	Reviews and comments on projects for effect on water quality, flow rate of Mississippi River	
	Contact	See general contact information at end of table	
Environmental Review			
Environmental Review	Authority		Reviews NPDES permits, EAW, EIS and projects for environmental impacts in the City, as needed
	Contact		Numerous departments including Public Works and Community Planning and Economic Development.
	Responsibility	Reviews and comments on Major redevelopment EAW/EIS within the Watershed regarding impacts on water quality, rate, and volume	
	Contact	See general contact information at end of table	
Mississippi River Corridor Plans			
Mississippi River Corridor Plans	Authority	Determine if erosion control structures within the bluff impact zone and the water quality impact zone are used only to correct an established erosion problem	- Collaborate with MDNR to adopt rules to ensure compliance with state statutes establishing the Mississippi River Corridor Critical Area (MRCCA), 2008 M.S.116G.15 - The City of Minneapolis has adopted a Mississippi River Critical Area Overlay District on its zoning map and in the zoning code (Chapter 551, Article XXII).
	Contact		City of Minneapolis Department of Community Planning and Economic Development (CPED)
	Responsibility		- Develops local implementation plan for within the MNRRA/Critical Areas - Current Mississippi River Critical Area Plan was adopted as part of 2040 Comprehensive Plan:

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Minneapolis
			https://minneapolis2040.com/media/1479/pdf_minneapolis2040-just-app-a.pdf
	Contact	See general contact information at end of table	City of Minneapolis Department of Community Planning and Economic Development (CPED)
General Contact Information			
		Mississippi Watershed Management Organization 2522 Marshall St NE, Minneapolis, MN 55413 Telephone: (612) 465-8780 Web: http://www.mwmo.org/	City of Minneapolis Minneapolis City Hall 350 South 5th Street Minneapolis, MN 55415 Web: http://www.ci.minneapolis.mn.us/

Water Resource-Related Activities of MWMO Member Organizations

Table 3. Water Resource-Related Activities of MWMO Member Organizations: City of Lauderdale

Water Category and Topics	Activity Type	MWMO	City of Lauderdale
Wetlands			
Wetland Conservation Act (WCA)	Authority		- Administers WCA as the LGU - Develops and enforces local controls - Wetland regulation is described in the City local water management plan
	Contact		See general contact information at end of table
	Responsibility		May create comprehensive wetland management plan
	Contact		See general contact information at end of table
Public Waters Work Permit	Authority	Reviews and comments on Public Works applications before DNR (e.g. dam repair permits)	
	Contact	See general contact information at end of table	
Wetland Inventories	Responsibility	Conduct a Wetland Function and Value Assessment within the Watershed	
Monitoring Programs	Responsibility	Wetland monitoring program Monitor Kasota Ponds wetland complex.	
	Contact	See general contact information at end of table	
Surface Waters			
NPDES Phase I and II Stormwater Permit	Authority	Opportunity to comment on member cities annual reports, generally in April of each year	An MS4. Required to adopt a Stormwater Pollution Prevention Program (SWPPP) to reduce the discharge of pollutants to the maximum extent practicable. The SWPPP covers six minimum control measures: 1. Public education and outreach 2. Public participation/involvement 3. Illicit discharge detection and elimination 4. Construction site runoff control 5. Post-construction site runoff control 6. Pollution prevention/good housekeeping

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Lauderdale
			Permit requires city to adopt ordinances to address Illicit discharge, construction site runoff, and post-construction runoff control. Administers ordinances, reviews plans, and issues permits for compliance with MS4 permit (SWPPP). This includes a SWPPP for land disturbing activities greater than one acre. Building and land use zoning permits are not approved without an approved SWPPP.
	Contact	See general contact information at end of table	Heather Butkowski (city administrator) (651) 631-0300 heather.butkowski@lauderdalemn.org
NPDES Construction Permit	Authority		City ordinance 8-4 generally requires a city permit for all land disturbing activity of one acre or more of land.
	Contact		See general contact information at end of table
NPDES Industrial Stormwater General Permit	Authority		City erosion and stormwater ordinances may apply, depending on size of disturbance
	Contact		See general contact information at end of table
Stormwater Treatment Standards	Authority	Sets stormwater quality and quantity (rate and volume) performance standards watershed-wide for areas within its jurisdiction that are at least as stringent as State Stormwater Standards.	Chapter 8-4 of the City code references stormwater management performance standards defined in the City's Local Surface Water Management Plan.
	Contact	See general contact information at end of table	Heather Butkowski (city administrator) (651) 631-0300 heather.butkowski@lauderdalemn.org
Impaired Waters	Responsibility	The MWMO is not a MS4. However, it may voluntarily work with the MS4's to plan and implement TMDL's within the watershed.	The City of Lauderdale is responsible for implementing measures to meet the defined wasteload allocation for their Municipal Separate Storm Sewer System (MS4) for approved TMDLs

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Lauderdale
	Contact	See general contact information at end of table	See general contact information at end of table
Surface Water Management	Authority	- Adopts Water Management Plan (WMP) per approval of BWSR. 10-year WMP addresses MWMO standards, goals, strategies, implementation actions to be carried out, and descriptions of program areas. - Requires local governments to adopt their own Water Management Plan consistent with WMO Plan. - Reviews and approves local water management plans. Denial of local water management plan has potential to holdup approval of City comprehensive plan	- Adopts local water management Plan Consistent with MWMO and CRWD Water Management Plans - Current Plan was adopted October 2018
	Contacts	See general contact information at end of table	See general contact information at end of table
Monitoring Programs	Responsibility	Monitoring and Outfall Study. An ongoing program to establish baseline water quantity and quality data that can be used for management of outfalls and receiving waters. Six sites are monitored, five stormwater outfalls discharging to the River, and one site at Loring Pond.	
	Contact	See general contact information at end of table	
Floodplains-Flooding			
Floodplain Programs	Authority		- Administers and enforces MDNR-approved floodplain ordinances, including review of development applications to ensure compliance with ordinance. City has no FEMA-mapped floodplain. Local controls apply to areas susceptible to being inundated by water from any source - Floodplain ordinance is Title 10 Zoning - Floodplain Regulations
	Contact		See general contact information at end of table

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Lauderdale
	Responsibility	Requires members to have a MDNR-approved Floodplain Ordinance as part of the review of local water management plans for inclusion of appropriate floodplain policies	
	Contact	See general contact information at end of table	
Localized flooding Studies and Mapping	Authority		While Public Works manages "localized flooding" studies and projects, Public Works does not have a role in FEMA floodplain planning, mapping, or administration. The city may maintain local floodplain mapping.
	Contact		See general contact information at end of table.
	Responsibility	MWMO leads or participates in watershed flooding studies for member cities	
	Contact	See general contact information at end of table	
Shoreland			
Shoreland Management Program	Responsibility	- Requires members to have a MDNR-approved Shoreland Ordinance - Reviews local water management plans for inclusion of appropriate shoreland management policies. - Provides guidance on restoration of eroded Mississippi Riverbank areas	
	Contact	See general contact information at end of table	
Navigable Waters			
Monitoring Programs	Responsibility	Partnering with the City of Minneapolis Homeland Security department to monitor the riverway and its infrastructure	
	Contact	See general contact information at end of table	
Groundwater-Drinking Water			
Monitoring Programs	Responsibility	Monitor Mississippi River	Drinking water quality reports available at: https://www.stpaul.gov/departments/saint-paul-

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Lauderdale
			regional-water-services/about-your-water
	Contact	See general contact information at end of table	
Wastewater Treatment			
NPDES Industrial and Municipal Wastewater	Responsibility	Funds programs to separate stormwater from entering sanitary sewer system.	
	Contact	See general contact information at end of table	
Inflow and Infiltration Program	Authority		City Code Title 8 Chapter 2 regulates/prohibits discharges to the sanitary sewer.
	Contact		See general contact information at end of table
	Responsibility	Provide information on potential surface and groundwater interaction hazards	
	Contact	See general contact information at end of table	
Habitat-Ecological Resources			
Other Ecological Inventories	Responsibility	Conduct studies on a local watershed scale that inventory ecological data such as native plants and plant communities, rare plant and animal species, and functional landscapes	
Misc. Habitat/Ecological Studies			Chapter 5 of the City Comprehensive Plan contains information about natural resources.
Hazardous Waste			
Contaminated Sites Database	Responsibility	Gather information and data on contaminated soils and groundwater affecting groundwater and surface water interactions	
	Contact	See general contact information at end of table	
Environmental			

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Lauderdale
Review			
Environmental Review	Authority		Reviews EAW, EIS, and projects for environmental impacts in the City, as needed.
	Contact		See general contact information at end of table.
	Responsibility	Reviews and comments on Major redevelopment EAW/EIS within the Watershed regarding impacts on water quality, rate, and volume	
	Contact	See general contact information at end of table	
General Contact Information			
		Mississippi Watershed Management Organization 2522 Marshall St NE, Minneapolis, MN 55413 Telephone: (612) 465-8780 Web: http://www.mwmo.org/	City of Lauderdale Telephone: (651) 792-7650 Web: http://www.ci.lauderdale.mn.us/

Water Resource-Related Activities of MWMO Member Organizations

Table 4. Water Resource-Related Activities of MWMO Member Organizations: City of Saint Paul

Water Category and Topics	Activity Type	MWMO	City of Saint Paul
Wetlands			
Wetland Conservation Act (WCA)	Authority		- Administers WCA as the LGU - Develops and enforces ordinances - Wetlands addressed by City Code Section 63.600
	Contact		See general contact information at end of table
	Responsibility		Plans to update comprehensive wetland management plan in cooperation with Capitol Region Watershed District (CRWD)
	Contact		City of Saint Paul Water Resources Coordinator (651) 266-9112
Public Waters Work Permit	Authority	Reviews and comments on Public Works applications before DNR (e.g. dam repair permits)	
	Contact	See general contact information at end of table	
Wetland Inventories	Responsibility	Conduct a Wetland Function and Value Assessment within the Watershed,	Plans to update comprehensive wetland management plan in cooperation with Capitol Region Watershed District (CRWD)
Monitoring Programs	Responsibility	Wetland monitoring program Monitor Kasota Ponds wetland complex.	
	Contact	See general contact information at end of table	See general contact information at end of table
Surface Waters			
NPDES Phase I and II Stormwater Permit	Authority	Opportunity to comment on member cities annual reports, generally in April of each year	The City has an NPDES phase 1 permit that requires discharge monitoring and implementation of stormwater management activities in the following areas: Structural controls, Facilities operation and quality control, Removed substances, New development and construction, Roadways, Flood control, Pesticides and fertilizers, Illicit discharges and improper disposal, Construction of storm sewers, public education and participation programs, Pilot program for stormwater management, Stormwater monitoring

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Saint Paul
			program manual, Alternative sources of monitoring data, and coordination with other governmental entities. An annual report is required by June 1 of each year. Permit requires the city to adopt ordinances to address construction site runoff, and post-construction runoff control for projects disturbing more than one acre. City administers ordinances, reviews plans, and issues permits for construction projects. This includes an Erosion Control Permit for all land disturbance activities which are in excess of 10,000 square feet. A stormwater plan is required for all activities disturbing more than one acre. The current permit expired Jan 1, 2004. The permit was last reissued in 2018.
	Contact	See general contact information at end of table	Public Works Department (651) 266-6245
NPDES Construction Permit	Authority		Chapter 52 of the Saint Paul Code of Ordinances requires projects disturbing one acre or more to provide for erosion and sediment control during construction.
	Contact		See general contact information at end of table
NPDES Industrial Stormwater General Permit	Authority		In addition to the NPDES Industrial Stormwater Permits which are issued by the MPCA, the City has requirements related to industrial sites and illicit discharges in city ordinance chapter 51.
	Contact		See general contact information at end of table
Stormwater Treatment Standards	Authority	Sets stormwater quality and quantity (rate and volume) performance standards watershed-wide for areas within its jurisdiction that are at least as stringent as State Stormwater Standards.	The City's water quality performance standards for development and redevelopment projects are defined in Chapter 52 of the Saint Paul Code of Ordinances.
	Contact	See general contact information at end of table	Public Works Department (651) 266-6245
Impaired Waters	Responsibility	The MWMO is not a MS4. However, it may	The City of Saint Paul is responsible for

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Saint Paul
		voluntarily work with the MS4's to plan and implement TMDL's within the watershed.	implementing measures to meet the defined wasteload allocation for their Municipal Separate Storm Sewer System (MS4) for approved TMDLs.
	Contact	See general contact information at end of table	See general contact information at end of table.
Surface Water Management	Authority	- Adopts Water Management Plan (WMP) per approval of BWSR. 10-year WMP addresses MWMO standards, goals, strategies, implementation actions to be carried out, and descriptions of program areas. - Requires local governments to adopt their own Water Management Plan consistent with WMO Plan. - Reviews and approves local water management plans. Denial of local water management plan has potential to holdup approval of City comprehensive plan	- Adopts local water management Plan Consistent with MWMO, LMRWMO, CRWD, and RWMWD Water Management Plans. - Current Plan is included in Comprehensive Plan dated June, 2019
	Contacts	See general contact information at end of table	https://www.stpaul.gov/sites/default/files/Media%20Root/Planning%20%26%20Economic%20Development/Saint-Paul-For-All-2040-Comprehensive-Plan-Water-Resources.pdf
Monitoring Programs	Responsibility	Monitoring and Outfall Study. An ongoing program to establish baseline water quantity and quality data that can be used for management of outfalls and receiving waters. Six sites are monitored, five stormwater outfalls discharging to the River, and one site at Loring Pond.	
	Contact	See general contact information at end of table	
Floodplains-Flooding			
Floodplain Programs	Authority		- Administers and enforces MDNR-approved floodplain ordinances including review of development applications to ensure compliance

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Saint Paul
			with ordinance. - Administers NFIP (National Floodplain Insurance Program) at the Local Level - Floodplain ordinance is Part II - Legislative Code/Title IX - City Planning - Chapter 92
	Contact		City of Saint Paul Department of Safety and Inspection
	Responsibility	Requires members to have a MDNR-approved Floodplain Ordinance as part of the review of local water management plans for inclusion of appropriate floodplain policies	- Administers local zoning code pursuant to the FEMA requirements - Evaluates local flooding issues and implements flood risk reduction projects, as needed
	Contact	See general contact information at end of table	City of Saint Paul Water Resources Coordinator (651) 266-9112
Localized Flooding Studies and Mapping	Authority		While Public Works manages "localized flooding" studies and projects, Public Works does not have a role in FEMA floodplain planning, mapping, or administration. The city may maintain local floodplain mapping.
	Contact		City of St. Paul Department of Safety and Inspection
	Responsibility	MWMO leads or participates in watershed flooding studies for member cities	
	Contact	See general contact information at end of table	
Monitoring Programs	Responsibility	Mississippi river gage reading program	
Shoreland			
Shoreland Management Program	Authority		- Develops local implementation plan for within the Mississippi National River Recreation Area/Critical Areas - Administers and enforces local shoreland management standards consistent with MNRRA
	Contact		See general contact information at end of table
	Responsibility	- Requires members to have a MDNR-approved	

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Saint Paul
		Shoreland Ordinance - Reviews local water management plans for inclusion of appropriate shoreland management policies. - Provides guidance on restoration of eroded Mississippi Riverbank areas	
	Contact	See general contact information at end of table	
Monitoring Programs	Responsibility	Monitors Mississippi riverbank erosion	
	Contact	See general contact information at end of table	
Navigable Waters			
Monitoring Programs	Responsibility	Partnering with the City of Minneapolis Homeland Security department to monitor the riverway and its infrastructure	
	Contact	See general contact information at end of table	
Groundwater-Drinking Water			
Water Appropriations	Authority		City code chapter 97 requires well-drillers to obtain a MDH permit.
	Contact		See general contact information at end of table
Groundwater Pollution Standards (Safe Drinking Water Act)	Authority		City water quality performance standards seek to prevent pollution of soil and groundwater.
	Contact		See general contact information at end of table
Source Water Assessment Program	Authority		Implements the local source water protection plan, adopted May 2005
	Contact		See general contact information at end of table
	Responsibility	Share Mississippi River water quality data	
	Contact	See general contact information at end of table	

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Saint Paul
Wellhead Protection Program	Authority		The City of St. Paul obtains drinking water from St. Paul Regional Water Supply and has not prepared a Wellhead Protection Plan Portion of St. Paul within the MWMO is not located within a wellhead protection area
	Contact		See general contact information at end of table
Well Management Program	Authority		City code chapter 97 requires well-drillers to obtain a MDH permit.
	Contact		See general contact information at end of table
Monitoring Programs	Responsibility	Monitor Mississippi River	Drinking water quality reports available at: https://www.stpaul.gov/departments/saint-paul-regional-water-services/about-your-water
	Contact	See general contact information at end of table	
Wastewater Treatment			
NPDES Industrial and Municipal Wastewater	Authority		Likely to trigger building and erosion control permits. Compliance with Floodplain, Shoreland zoning district overlay rules
	Contact		See general contact information at end of table
	Responsibility	Funds programs to separate stormwater from entering sanitary sewer system.	
	Contact	See general contact information at end of table	
Inflow and Infiltration Program	Authority		Saint Paul's objective is to reduce the amount of I/I entering the system to help extend the service life of the system, and to be in compliance with MCES's I/I Surcharge Policy that was adopted in 2006 (as updated).
	Contact		See general contact information at end of table
	Responsibility	Provide information on potential surface and groundwater interaction hazards	

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Saint Paul
	Contact	See general contact information at end of table	
Habitat-Ecological Resources			
Other Ecological Inventories	Responsibility	Conduct studies on a local watershed scale that inventory ecological data such as native plants and plant communities, rare plant and animal species, and functional landscapes	
Misc. Habitat/Ecological Studies			Natural resources information is and programming is available through the City Parks and Recreation department https://www.stpaul.gov/departments/parks-recreation/natural-resources
Hazardous Waste			
Contaminated Sites Database	Responsibility	Gather information and data on contaminated soils and groundwater affecting groundwater and surface water interactions	
	Contact	See general contact information at end of table	
Non-water-based transportation of Hazardous Wastes	Authority		Responds to spills and administers cleanup (Fire Department)
	Contact		See general contact information at end of table
Water-based transportation of Hazardous Waste	Authority		Responds to spills and administers cleanup (Fire Department)
	Contact		See general contact information at end of table
Power Generation			
Hydropower License	Responsibility	Reviews and comments on projects for effect on water quality, flow rate of Mississippi River	

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Saint Paul
	Contact	See general contact information at end of table	
Environmental Review			
Environmental Review	Authority		Reviews EAW, EIS, and projects for environmental impacts in the City, as needed.
	Contact		See general contact information at end of table.
	Responsibility	Reviews and comments on Major redevelopment EAW/EIS within the Watershed regarding impacts on water quality, rate, and volume	
	Contact	See general contact information at end of table	
Mississippi River Corridor Plans			
Mississippi River Corridor Plans	Authority		- Collaborate with MDNR to adopt rules to ensure compliance with state statutes establishing the Mississippi River Corridor Critical Area (MRCCA), 2008 M.S.116G.15 - Regulates consistent with critical area requirements as identified in City zoning code (Section 68)
	Contact		See general contact information at end of table
	Responsibility		- Develops local implementation plan for within the MNRRA/Critical Areas - As of 2021, the City is in the process of revising the Mississippi River Critical Area plan - Included MRCCA Plan in 2040 Comprehensive Plan: https://www.stpaul.gov/departments/planning-economic-development/planning/2040-comprehensive-plan
	Contact	See general contact information at end of table	See general contact information at end of table
General Contact Information			
		Mississippi Watershed Management Organization	City of Saint Paul

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Saint Paul
		2522 Marshall St NE, Minneapolis, MN 55413 Telephone: (612) 465-8780 Web: http://www.mwmo.org/	Saint Paul City Hall 15 Kellogg Blvd. West Saint Paul, MN 55102 Telephone: (651) 266-8989 Web: http://www.stpaul.gov/

Water Resource-Related Activities of MWMO Member Organizations

Table 5. Water Resource-Related Activities of MWMO Member Organizations: City of Fridley

Water Category and Topics	Activity Type	MWMO	City of Fridley
Wetlands			
Wetland Conservation Act (WCA)	Authority		- Administers WCA for portions of the City in the MWMO as the LGU - Develops and enforces local controls - Wetland ordinance is city code Chapter 205.29 0-4 Wetland District
	Contact		See general contact information at end of table
	Responsibility		May create comprehensive wetland management plan
	Contact		See general contact information at end of table
Public Waters Work Permit	Authority	Reviews and comments on Public Works applications before DNR (e.g. dam repair permits)	The City of Fridley city code chapter 215 requires a city permit for any activity that changes the course, current, or cross section of public waters within the city.
	Contact	See general contact information at end of table	See general contact information at end of table
Wetland Inventories	Responsibility	Conduct a Wetland Function and Value Assessment within the Watershed,	City of Fridley last completed a city-wide wetland inventory in 1993. Data is available from the city.
Monitoring Programs	Responsibility	Wetland monitoring program Monitor Kasota Ponds wetland complex.	
	Contact	See general contact information at end of table	
Surface Waters			
NPDES Phase I and II Stormwater Permit	Authority	Opportunity to comment on member cities annual reports, generally in April of each year	An MS4. Required to adopt a Stormwater Pollution Prevention Program (SWPPP) to reduce the discharge of pollutants to the maximum extent practicable. The SWPPP covers six minimum control measures: 1. Public education and outreach; 2. Public participation/involvement; 3. Illicit discharge detection and elimination; 4. Construction site runoff control;

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Fridley
			5. Post- construction site runoff control; and 6. Pollution prevention/good housekeeping. Permit requires city to adopt ordinances to address Illicit discharge, construction site runoff, and post- construction runoff control. Administers ordinances, reviews plans and issues permits for compliance with MS4 permit (SWPPP). This includes a SWPPP for land disturbing activities greater than one acre. Building and land use-zoning permits are not approved without an approved SWPPP.
	Contact	See general contact information at end of table	Public Works 763-572-3566
NPDES Construction Permit	Authority		City ordinance 208 generally requires a city permit for all land disturbing activity with the exception of disturbances of less than 5,000 square feet.
	Contact		See general contact information at end of table
NPDES Industrial Stormwater General Permit	Authority		City erosion and stormwater ordinances may apply, depending on size of disturbance
	Contact		See general contact information at end of table
Stormwater Treatment Standards	Authority	Sets stormwater quality and quantity (rate and volume) performance standards watershed-wide for areas within its jurisdiction that are at least as stringent as State Stormwater Standards.	The City's water quality performance standards for development and redevelopment projects are defined in Chapter 208 of the Fridley Code of Ordinances.
	Contact	See general contact information at end of table	Community Development Planning and Zoning 763-572-3592
Impaired Waters	Responsibility	The MWMO is not a MS4. However, it may voluntarily work with the MS4's to plan and implement TMDL's within the watershed.	The City of Fridley is responsible for implementing measures to meet the defined wasteload allocation for their Municipal Separate Storm Sewer System (MS4) for approved TMDLs.
	Contact	See general contact information at end of table	See general contact information at end of table.

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Fridley
Surface Water Management	Authority	- Adopts Water Management Plan (WMP) per approval of BWSR. 10-year WMP addresses MWMO standards, goals, strategies, implementation actions to be carried out, and descriptions of program areas. - Requires local governments to adopt their own Water Management Plan consistent with WMO Plan. - Reviews and approves local water management plans. Denial of local water management plan has potential to holdup approval of City comprehensive plan	- Adopts local water management Plan Consistent with CCWD, RCWD and MWMO Water Management Plan - Current Plan included in Comprehensive Plan adopted June 2019 - Local Surface Water Management Plan https://fridleymn.gov/DocumentCenter/View/5733/Attachment-A-Fridley-Local-Water-Plan-final_appendices
	Contacts	See general contact information at end of table	See general contact information at end of table.
Monitoring Programs	Responsibility	Monitoring and Outfall Study. An ongoing program to establish baseline water quantity and quality data that can be used for management of outfalls and receiving waters. Six sites are monitored, five stormwater outfalls discharging to the River, and one site at Loring Pond.	
	Contact	See general contact information at end of table	
Floodplains-Flooding			
Floodplain Programs	Authority		- Administers and enforces MDNR-approved floodplain ordinances including review of development applications to ensure compliance with ordinance; - Administers NFIP (National Floodplain Insurance Program). - Floodplain ordinance is city code Section 205.27 0-1 Floodplain Management Overlay District
	Contact		See general contact information at end of table
	Responsibility	Requires members to have a MDNR-approved Floodplain Ordinance as part of the review of	

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Fridley
		local water management plans for inclusion of appropriate floodplain policies	
	Contact	See general contact information at end of table	
Localized Flooding Studies and Mapping	Authority		While Public Works manages "localized flooding" studies and projects, Public Works does not have a role in FEMA floodplain planning, mapping, or administration. The city may maintain local floodplain mapping.
	Contact		See general contact information at end of table
	Responsibility	MWMO leads or participates in watershed flooding studies for member cities	
	Contact	See general contact information at end of table	
Monitoring Programs	Responsibility	Mississippi river gage reading program	
Shoreland			
Shoreland Management Program	Authority		The City of Fridley has a Shoreland Overlay District in their zoning code (Chapter 205.32 O-7)
	Contact		See general contact information at end of table
	Responsibility	- Requires members to have a MDNR-approved Shoreland Ordinance - Reviews local water management plans for inclusion of appropriate shoreland management policies. - Provides guidance on restoration of eroded Mississippi Riverbank areas	
	Contact	See general contact information at end of table	
Monitoring Programs	Responsibility	Monitors Mississippi riverbank erosion	
	Contact	See general contact information at end of table	
Navigable Waters			
Monitoring	Responsibility	Partnering with the City of Minneapolis Homeland	

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Fridley
Programs		Security department to monitor the riverway and its infrastructure	
	Contact	See general contact information at end of table	
Groundwater-Drinking Water			
Source Water Assessment Program	Responsibility	Share Mississippi River water quality data	
	Contact	See general contact information at end of table	
Wellhead Protection Program	Authority		Wellhead Protection Plan http://www.ci.fridley.mn.us/newsite/images/articl e-files/fridley_wellhead_protection_plan_final_phase2_rev081223.pdf
	Contact		See general contact information at end of table
Monitoring Programs	Responsibility	Monitor Mississippi River	Drinking water quality reports available at: https://www.ci.fridley.mn.us/620/Water-Quality-Reports
	Contact	See general contact information at end of table	
Wastewater Treatment			
NPDES Industrial and Municipal Wastewater	Responsibility	Funds programs to separate stormwater from entering sanitary sewer system.	
	Contact	See general contact information at end of table	
Inflow and Infiltration Program	Authority		City Code Section 402 regulates/prohibits discharge to the sanitary sewer.
	Contact		See general contact information at end of table
	Responsibility	Provide information on potential surface and groundwater interaction hazards	The City of Fridley estimated I/I from monitoring data from 1999-2006.
	Contact	See general contact information at end of table	See general contact information at end of table

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Fridley
Habitat-Ecological Resources			
Other Ecological Inventories	Responsibility	Conduct studies on a local watershed scale that inventory ecological data such as native plants and plant communities, rare plant and animal species, and functional landscapes	
Misc. Habitat/Ecological Studies			Section 1.4 of the Fridley 2040 Comprehensive Plan contains information about natural resources. https://www.ci.fridley.mn.us/DocumentCenter/View/5290/2040-Comp-Plan---Full
Hazardous Waste			
Contaminated Sites Database	Responsibility	Gather information and data on contaminated soils and groundwater affecting groundwater and surface water interactions	
	Contact	See general contact information at end of table	
Power Generation			
Hydropower License	Responsibility	Reviews and comments on projects for effect on water quality, flow rate of Mississippi River	
	Contact	See general contact information at end of table	
Environmental Review			
Environmental Review	Authority		Reviews EAW, EIS, and projects for environmental impacts in the City, as needed.
	Contact		See general contact information at end of table.
	Responsibility	Reviews and comments on Major redevelopment EAW/EIS within the Watershed regarding impacts on water quality, rate, and volume	
	Contact	See general contact information at end of table	
Mississippi River Corridor Plans			

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Fridley
Mississippi River Corridor Plans	Authority		- Collaborate with MDNR to adopt rules to ensure compliance with state statutes establishing the Mississippi River Corridor Critical Area (MRCCA), 2008 M.S.116G.15 - City maintains a Critical Area District via City Code Section 205-28: https://www.ci.fridley.mn.us/DocumentCenter/View/476/Ch-20528-O-2-Critical-Area
	Contact		See general contact information at end of table
	Responsibility		- City has developed a Critical Area Plan - Chapter 9 of the Local Surface Water Management Plan is titled Critical Area Plan - MNRAA. http://www.ci.fridley.mn.us/newsite/images/article-files/commdev/compplan/compplan2030jul09/Chapter_9_Critical_Area_Plan.pdf
	Contact	See general contact information at end of table	See general contact information at end of table
General Contact Information			
		Mississippi Watershed Management Organization 2522 Marshall St NE, Minneapolis, MN 55413 Telephone: (612) 465-8780 Web: http://www.mwmo.org/	City of Fridley 6431 University Ave N.E. Fridley, MN 55432 (763) 571-3450 info@fridleymn.gov Web: www.ci.fridley.mn.us

Water Resource-Related Activities of MWMO Member Organizations

Table 6. Water Resource-Related Activities of MWMO Member Organizations: City of Columbia Heights

Water Category and Topics	Activity Type	MWMO	City of Columbia Heights
Wetlands			
Wetland Conservation Act (WCA)	Authority		Administers WCA for portions of the City in the MWMO as the LGU
	Contact		See general contact information at end of table
	Responsibility		May create comprehensive wetland management plan
	Contact		See general contact information at end of table
Public Waters Work Permit	Authority	Reviews and comments on Public Works applications before DNR (e.g. dam repair permits)	City of Columbia Heights controls access to Sullivan Lake via ownership of the land adjacent to the lake.
	Contact	See general contact information at end of table	
Wetland Inventories	Responsibility	Conduct a Wetland Function and Value Assessment within the Watershed	City of Columbia Heights completed a city-wide wetland inventory which is included in the City's 2000 Surface Water Management Plan
Monitoring Programs	Responsibility	Wetland monitoring program Monitor Kasota Ponds wetland complex.	
	Contact	See general contact information at end of table	
Surface Waters			

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Columbia Heights
NPDES Phase I and II Stormwater Permit	Authority	Opportunity to comment on member cities annual reports, generally in April of each year	An MS4. Required to adopt a Stormwater Pollution Prevention Program (SWPPP) to reduce the discharge of pollutants to the maximum extent practicable. The SWPPP covers six minimum control measures: 1. Public education and outreach; 2. Public participation/involvement; 3. Illicit discharge detection and elimination; 4. Construction site runoff control; 5. Post-construction site runoff control; and 6. Pollution prevention/good housekeeping. Permit requires city to adopt ordinances to address Illicit discharge, construction site runoff, and post- construction runoff control. Administers ordinances, reviews plans and issues permits for compliance with MS4 permit (SWPPP). This includes a SWPPP for land disturbing activities greater than one acre. Building and land use-zoning permits are not approved without an approved SWPPP.
	Contact	See general contact information at end of table	Kevin Hansen Public Works Director 763-706-3700
NPDES Construction Permit	Authority		City code chapter 9.106Q requires a city permit for land disturbing activity of over 5,000 square feet, 500 cubic yards of undeveloped land, 50 cubic yards of developed land, or within 1,000 feet of a waterway (with some exceptions).
	Contact		See general contact information at end of table
NPDES Industrial Stormwater General Permit	Authority		City erosion and stormwater ordinances may apply, depending on size of disturbance
	Contact		See general contact information at end of table

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Columbia Heights
Stormwater Treatment Standards	Authority	Sets stormwater quality and quantity (rate and volume) performance standards watershed-wide for areas within its jurisdiction that are at least as stringent as State Stormwater Standards.	City has adopted Stormwater Management Design Standards (2018) that include water quality performance standards. The Design Standards are included as Appendix C of the City's 2018 Surface Water Management Plan.
	Contact	See general contact information at end of table	See general contact information at end of table
Impaired Waters	Responsibility	The MWMO is not a MS4. However, it may voluntarily work with the MS4's to plan and implement TMDL's within the watershed.	The City of Columbia Heights is responsible for implementing measures to meet the defined wasteload allocation for their Municipal Separate Storm Sewer System (MS4) for approved TMDLs.
	Contact	See general contact information at end of table	See general contact information at end of table.
Surface Water Management	Authority	- Adopts Water Management Plan (WMP) per approval of BWSR. 10-year WMP addresses MWMO standards, goals, strategies, implementation actions to be carried out, and descriptions of program areas. - Requires local governments to adopt their own Water Management Plan consistent with WMO Plan. - Reviews and approves local water management plans. Denial of local water management plan has potential to holdup approval of City comprehensive plan	- Adopts local water management Plan Consistent with RCWD and MWMO Water Management Plan - Current Plan was adopted December 2018 - Local Surface Water Management Plan: https://cms5.revize.com/revize/columbiaheights/Public%20Works/Stormwater/SWMP_Final%20051418_approved.pdf
	Contacts	See general contact information at end of table	See general contact information at end of table.
Monitoring Programs	Responsibility	Monitoring and Outfall Study. An ongoing program to establish baseline water quantity and quality data that can be used for management of outfalls and receiving waters. Six sites are monitored, five stormwater outfalls discharging to the River, and one site at Loring Pond.	
	Contact	See general contact information at end of table	
Floodplains-Flooding			

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Columbia Heights
Floodplain Programs	Authority		- Administers and enforces MDNR-approved floodplain ordinances including review of development applications to ensure compliance with ordinance; - Administers NFIP (National Floodplain Insurance Program). - Floodplain ordinance is Chapter 9 - Article 1 - 9.114 Overlay Districts - Section B
	Contact		See general contact information at end of table
	Responsibility	Requires members to have a MDNR-approved Floodplain Ordinance as part of the review of local water management plans for inclusion of appropriate floodplain policies	
	Contact	See general contact information at end of table	
Localized Flooding Studies and Mapping	Authority		'While Public Works manages "localized flooding" studies and projects, Public Works does not have a role in FEMA floodplain planning, mapping, or administration. The city may maintain local floodplain mapping.
	Contact		See general contact information at end of table
	Responsibility	MWMO leads or participates in watershed flooding studies for member cities	
	Contact	See general contact information at end of table	
Shoreland			
Shoreland Management Program	Authority		The City of Columbia Heights has a Shoreland Overlay District. (Ordinance No. 1550 - 9.113C) https://codelibrary.amlegal.com/codes/columbiahts/latest/columbiaheights_mn/0-0-0-15395
	Contact		See general contact information at end of table
	Responsibility	- Requires members to have a MDNR-approved Shoreland Ordinance - Reviews local water management plans for inclusion of appropriate shoreland management	

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Columbia Heights
		policies. - Provides guidance on restoration of eroded Mississippi Riverbank areas	
	Contact	See general contact information at end of table	
Navigable Waters			
Monitoring Programs	Responsibility	Partnering with the City of Minneapolis Homeland Security department to monitor the riverway and its infrastructure	
	Contact	See general contact information at end of table	
Groundwater-Drinking Water			
Source Water Assessment Program	Responsibility	Share Mississippi River water quality data	
	Contact	See general contact information at end of table	
Wellhead Protection Program	Authority		The city does not have a Wellhead Protection Plan as there are no municipal or non-municipal wells within Columbia Heights. The City will follow guidelines and requirements as set forth in the City of Minneapolis "Source Water Protection Plan" (September 2008). Portions of the city lie within the Drinking Water Supply Management Area (DWSMA) of New Brighton.
	Contact		See general contact information at end of table
Monitoring Programs	Responsibility	Monitor Mississippi River	Drinking water quality reports available at: https://www.columbiaheightsmn.gov/departments/public_works/about_our_water.php
	Contact	See general contact information at end of table	
Wastewater Treatment			
NPDES Industrial and	Responsibility	Funds programs to separate stormwater from entering sanitary sewer system.	

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Columbia Heights
Municipal Wastewater			
	Contact	See general contact information at end of table	
Inflow and Infiltration Program	Authority		The City regulates inflow and infiltration to the sanitary sewer system via City code Chapter 8, Article VII
	Contact		See general contact information at end of table
	Responsibility	Provide information on potential surface and groundwater interaction hazards	The City of Columbia Heights estimated I/I from monitoring data from 2012-2016.
	Contact	See general contact information at end of table	See general contact information at end of table
Habitat-Ecological Resources			
Other Ecological Inventories	Responsibility	Conduct studies on a local watershed scale that inventory ecological data such as native plants and plant communities, rare plant and animal species, and functional landscapes	
Misc. Habitat/Ecological Studies			Chapter 7 of the City Comprehensive Plan contains information about natural resources. https://www.columbiaheightsmn.gov/departments/community_development/comprehensive_plan.php
Hazardous Waste			
Contaminated Sites Database	Responsibility	Gather information and data on contaminated soils and groundwater affecting groundwater and surface water interactions	
	Contact	See general contact information at end of table	
Environmental Review			
Environmental Review	Authority		Reviews EAW, EIS, and projects for environmental impacts in the City, as needed.
	Contact		See general contact information at end of table.

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Columbia Heights
	Responsibility	Reviews and comments on Major redevelopment EAW/EIS within the Watershed regarding impacts on water quality, rate, and volume	
	Contact	See general contact information at end of table	
General Contact Information			
		Mississippi Watershed Management Organization 2522 Marshall St NE, Minneapolis, MN 55413 Telephone: (612) 465-8780 Web: http://www.mwmo.org/	City of Columbia Heights 590 40th Ave N.E. Columbia Heights, MN 55421 Telephone: (763) 706-3600 info@ci.columbia-heights.mn.us Web: www.ci.columbia-heights.mn.us

Water Resource-Related Activities of MWMO Member Organizations

Table 7. Water Resource-Related Activities of MWMO Member Organizations: City of Hilltop

Water Category and Topics	Activity Type	MWMO	City of Hilltop
Wetlands			
Wetland Conservation Act (WCA)	Authority		- Administers WCA for portions of the City in the MWMO as the LGU
	Contact		See general contact information at end of table
	Responsibility		May create comprehensive wetland management plan
	Contact		See general contact information at end of table
Public Waters Work Permit	Authority	Reviews and comments on Public Works applications before DNR (e.g. dam repair permits)	
	Contact	See general contact information at end of table	
Wetland Inventories	Responsibility	Conduct a Wetland Function and Value Assessment within the Watershed	
Monitoring Programs	Responsibility	Wetland monitoring program Monitor Kasota Ponds wetland complex.	
	Contact	See general contact information at end of table	
Surface Waters			
NPDES Phase I and II Stormwater Permit	Authority	Opportunity to comment on member cities annual reports, generally in April of each year	An MS4. Required to adopt a Stormwater Pollution Prevention Program (SWPPP) to reduce the discharge of pollutants to the maximum extent practicable. The SWPPP covers six minimum control measures: 1. Public education and outreach; 2. Public participation/involvement; 3. Illicit discharge detection and elimination; 4. Construction site runoff control; 5. Post- construction site runoff control; and 6. Pollution prevention/good housekeeping. Permit requires city to adopt ordinances to address Illicit discharge, construction site runoff,

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Hilltop
			and post- construction runoff control. Administers ordinances, reviews plans and issues permits for compliance with MS4 permit (SWPPP). This includes a SWPPP for land disturbing activities greater than one acre. Building and land use-zoning permits are not approved without an approved SWPPP.
	Contact	See general contact information at end of table	Matt Johnson Public Works Director 763-571-2023
NPDES Construction Permit	Authority		City ordinance Chapter 14 generally requires a city permit for all land disturbing activity, which may trigger NPDES permit based on size
	Contact		See general contact information at end of table.
NPDES Industrial Stormwater General Permit	Authority		City erosion and stormwater ordinances may apply, depending on size of disturbance
	Contact		See general contact information at end of table
Stormwater Treatment Standards	Authority	Sets stormwater quality and quantity (rate and volume) performance standards watershed-wide for areas within its jurisdiction that are at least as stringent as State Stormwater Standards.	The City's stormwater performance standards for development and redevelopment projects are defined in Chapter 14 of the Hilltop Code of Ordinances.
	Contact	See general contact information at end of table	See general contact information at end of table
Impaired Waters	Responsibility	The MWMO is not a MS4. However, it may voluntarily work with the MS4's to plan and implement TMDL's within the watershed.	The City of Hilltop is responsible for implementing measures to meet the defined wasteload allocation for their Municipal Separate Storm Sewer System (MS4) for approved TMDLs.
	Contact	See general contact information at end of table	See general contact information at end of table.
Surface Water Management	Authority	- Adopts Water Management Plan (WMP) per approval of BWSR. 10-year WMP addresses MWMO standards, goals, strategies, implementation actions to be carried out, and	Adopts local water management Plan Consistent with MWMO Water Management Plan

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Hilltop
		descriptions of program areas. - Requires local governments to adopt their own Water Management Plan consistent with WMO Plan. - Reviews and approves local water management plans. Denial of local water management plan has potential to holdup approval of City comprehensive plan	
	Contacts	See general contact information at end of table	See general contact information at end of table.
Monitoring Programs	Responsibility	Monitoring and Outfall Study. An ongoing program to establish baseline water quantity and quality data that can be used for management of outfalls and receiving waters. Six sites are monitored, five stormwater outfalls discharging to the River, and one site at Loring Pond.	
	Contact	See general contact information at end of table	
Floodplains-Flooding			
Floodplain Programs	Authority		As of 2021, Hilltop has not established a floodplain ordinance or zoning overlay
	Contact		See general contact information at end of table
	Responsibility	Requires members to have a MDNR-approved Floodplain Ordinance as part of the review of local water management plans for inclusion of appropriate floodplain policies	
	Contact	See general contact information at end of table	
Localized Flooding Studies and Mapping	Authority		While Public Works manages "localized flooding" studies and projects, Public Works does not have a role in FEMA floodplain planning, mapping, or administration. The city may maintain local floodplain mapping.
	Contact		See general contact information at end of table
	Responsibility	MWMO leads or participates in watershed	

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Hilltop
		flooding studies for member cities	
	Contact	See general contact information at end of table	
Shoreland			
Shoreland Management Program	Authority		As of 2021, Hilltop has not established a shoreland ordinance or zoning overlay
	Contact		See general contact information at end of table
	Responsibility	- Requires members to have a MDNR-approved Shoreland Ordinance - Reviews local water management plans for inclusion of appropriate shoreland management policies. - Provides guidance on restoration of eroded Mississippi Riverbank areas	
	Contact	See general contact information at end of table	
Navigable Waters			
Monitoring Programs	Responsibility	Partnering with the City of Minneapolis Homeland Security department to monitor the riverway and its infrastructure	
	Contact	See general contact information at end of table	
Groundwater-Drinking Water			
Source Water Assessment Program	Responsibility	Share Mississippi River water quality data	
	Contact	See general contact information at end of table	
Wastewater Treatment			
NPDES Industrial and Municipal Wastewater	Responsibility	Funds programs to separate stormwater from entering sanitary sewer system.	

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Hilltop
	Contact	See general contact information at end of table	
Inflow and Infiltration Program	Authority		City Code Chapter 38 regulates/prohibits discharges to the sanitary sewer.
	Contact		See general contact information at end of table
	Responsibility	Provide information on potential surface and groundwater interaction hazards	
	Contact	See general contact information at end of table	
Habitat-Ecological Resources			
Other Ecological Inventories	Responsibility	Conduct studies on a local watershed scale that inventory ecological data such as native plants and plant communities, rare plant and animal species, and functional landscapes	
Hazardous Waste			
Contaminated Sites Database	Responsibility	Gather information and data on contaminated soils and groundwater affecting groundwater and surface water interactions	
	Contact	See general contact information at end of table	
Environmental Review			
Environmental Review	Authority		Reviews EAW, EIS, and projects for environmental impacts in the City, as needed.
	Contact		See general contact information at end of table.
	Responsibility	Reviews and comments on Major redevelopment EAW/EIS within the Watershed regarding impacts on water quality, rate, and volume	
	Contact	See general contact information at end of table	
General Contact Information			
		Mississippi Watershed Management Organization	City of Hilltop

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	City of Hilltop
		2522 Marshall St NE, Minneapolis, MN 55413 Telephone: (612) 465-8780 Web: http://www.mwmo.org/	4555 Jackson St. N.E. Minneapolis, MN 55421 Telephone: (763) 571-2023 Web: www.hilltop.govoffice.com

Water Resource-Related Activities of MWMO Member Organizations

Table 8. Water Resource-Related Activities of MWMO Member Organizations: Minneapolis Parks and Recreation Board

Water Category and Topics	Activity Type	MWMO	Minneapolis Parks and Recreation Board
Wetlands			
Public Waters Work Permit	Authority	Reviews and comments on Public Works applications before DNR (e.g. dam repair permits)	MPRB controls access to Loring Pond Lakes via ownership of the land adjacent to the lake.
	Contact	See general contact information at end of table	Environmental Operations Manager (612) 313-7782
Wetland Inventories	Responsibility	Conduct a Wetland Function and Value Assessment within the Watershed	
Monitoring Programs	Responsibility	Wetland monitoring program Monitor Kasota Ponds wetland complex.	- Performs extensive lake monitoring program including summer bacteria tests at beaches. - Performs stormwater monitoring for the City of Minneapolis and in accordance with the MPLS NPDES Permit. - Operates WOMP stations on Minnehaha Creek and Bassett Creek (outside MWMO)
	Contact	See general contact information at end of table	Environmental Operations Manager (612) 313-7782
Surface Waters			
NPDES Phase I and II Stormwater Permit	Authority	Opportunity to comment on member cities annual reports, generally in April of each year	An MS4. Park Board is co-permittee with the City of Minneapolis. The MPRB performs the public education and monitoring components of the NPDES implementation requirements
	Contact	See general contact information at end of table	Environmental Operations Manager (612) 313-7782
Stormwater Treatment	Authority	Sets stormwater quality and quantity (rate and volume) performance standards watershed-wide	The MPRB is the primary steward of Minneapolis Lakes and also co-permitee with the City of

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	Minneapolis Parks and Recreation Board
Standards		for areas within its jurisdiction that are at least as stringent as State Stormwater Standards.	Minneapolis on the NPDES Permit.
	Contact	See general contact information at end of table	Environmental Operations Manager (612) 313-7782
Impaired Waters	Responsibility	The MWMO is not a MS4. However, it may voluntarily work with the MS4's to plan and implement TMDL's within the watershed.	The MPRB is the primary steward of Minneapolis Lakes and also co-permitee with the City of Minneapolis on the NPDES Permit.
	Contact	See general contact information at end of table	Environmental Operations Manager (612) 313-7782
Surface Water Management	Authority	- Adopts Water Management Plan (WMP) per approval of BWSR. 10-year WMP addresses MWMO standards, goals, strategies, implementation actions to be carried out, and descriptions of program areas. - Requires local governments to adopt their own Water Management Plan consistent with WMO Plan. - Reviews and approves local water management plans. Denial of local water management plan has potential to holdup approval of City comprehensive plan	The MPRB is the primary steward of Minneapolis Lakes and also co-permitee with the City of Minneapolis on the NPDES Permit. The MPRB performs various surface water and stormwater management roles, but is not required to maintain a local water management plan MPRB activities are summarized at: https://www.minneapolisparks.org/park_care__improvements/water_resources/
	Contacts	See general contact information at end of table	Environmental Operations Manager (612) 313-7782
Public Water Access	Authority		Maintains public water access in City of Minneapolis
	Contact		Environmental Operations Manager (612) 313-7782
Monitoring Programs	Responsibility	Monitoring and Outfall Study. An ongoing program to establish baseline water quantity and quality data that can be used for management of outfalls and receiving waters. Six sites are monitored, five stormwater outfalls discharging to the River, and one site at Loring Pond.	- Performs extensive lake monitoring program including summer bacteria tests at beaches. - Performs stormwater monitoring for the City of Minneapolis and in accordance with the MPLS NPDES Permit. - Operates WOMP stations on Minnehaha Creek

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	Minneapolis Parks and Recreation Board
			and Bassett Creek (outside MWMO)
	Contact	See general contact information at end of table	Environmental Operations Manager (612) 313-7782
Floodplains-Flooding			
Floodplain Programs	Responsibility	Requires members to have a MDNR-approved Floodplain Ordinance as part of the review of local water management plans for inclusion of appropriate floodplain policies	
	Contact	See general contact information at end of table	
Floodplain Studies and Mapping	Responsibility	MWMO leads or participates in watershed flooding studies for member cities	
	Contact	See general contact information at end of table	
Monitoring Programs	Responsibility	Mississippi river gage reading program	
Shoreland			
Shoreland Management Program	Authority		Administers and enforces local shoreland management standard through ordinances for activities within the shoreland area (defined in the MPRB Ordinances as included in the City of Minneapolis Ordinances)
	Contact		See general contact information at end of table
	Responsibility	- Requires members to have a MDNR-approved Shoreland Ordinance - Reviews local water management plans for inclusion of appropriate shoreland management policies. - Provides guidance on restoration of eroded Mississippi Riverbank areas	
	Contact	See general contact information at end of table	
Monitoring Programs	Responsibility	Monitors Mississippi riverbank erosion	

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	Minneapolis Parks and Recreation Board
	Contact	See general contact information at end of table	
Navigable Waters			
Monitoring Programs	Responsibility	Partnering with City of Minneapolis Departments to monitor the riverway and its infrastructure	
	Contact	See general contact information at end of table	
Groundwater-Drinking Water			
Source Water Assessment Program	Responsibility	Share Mississippi River water quality data	
	Contact	See general contact information at end of table	
Monitoring Programs	Responsibility	Monitor Mississippi River	
	Contact	See general contact information at end of table	
Wastewater Treatment			
NPDES Industrial and Municipal Wastewater	Responsibility	Funds programs to separate stormwater from entering sanitary sewer system.	
	Contact	See general contact information at end of table	
Inflow and Infiltration Program	Responsibility	Provide information on potential surface and groundwater interaction hazards	
	Contact	See general contact information at end of table	
Habitat-Ecological Resources			
Aquatic Plant Management and Nuisance	Authority		MPRB manages aquatic plant control in the City of Minneapolis in areas identified by MDNR Permit: https://www.minneapolisparks.org/park_care__im

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	Minneapolis Parks and Recreation Board
Control Permits			provements/water_resources/aquatic-plant-management/
	Contact		Environmental Operations Manager (612) 313-7782
Aeration System Operating Permit	Authority		MPRB manages aeration in several lakes in Minneapolis in compliance with MDNR Permit
	Contact		Environmental Operations Manager (612) 313-7782
Other Ecological Inventories	Responsibility	Conduct studies on a local watershed scale that inventory ecological data such as native plants and plant communities, rare plant and animal species, and functional landscapes	
Misc. Habitat/Ecological Studies			MPRB completed a natural resource assessment and ecological master plan. More information is available at: https://www.minneapolisparks.org/park_care__improvements/natural_areas/
Hazardous Waste			
Contaminated Sites Database	Responsibility	Gather information and data on contaminated soils and groundwater affecting groundwater and surface water interactions	
	Contact	See general contact information at end of table	
Power Generation			
Hydropower License	Responsibility	Reviews and comments on projects for effect on water quality, flow rate of Mississippi River	
	Contact	See general contact information at end of table	
Environmental Review			
Environmental Review	Responsibility	Reviews and comments on Major redevelopment EAW/EIS within the Watershed regarding impacts	

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	Minneapolis Parks and Recreation Board
		on water quality, rate, and volume	
	Contact	See general contact information at end of table	
Mississippi River Corridor Plans			
Mississippi River Corridor Plans	Authority		As landowner within MRCCA, MPRB collaborates with City of Minneapolis and MDNR to established local controls within the MRCCA
	Contact		See general contact information at end of table
	Responsibility	Big River Study (draft) identifying planning segments along the Mississippi River; Mississippi Riverbank Restoration Guidelines; Mississippi Riverbank Restoration Hydraulic Study; Identify resource improvement corridors along and leading to the Mississippi River	Developed and implements plans applicable to MRCCA including: - Above The Falls Regional Park Master Plan - Mississippi Gorge Regional Park Master Plan - Central Mississippi Riverfront Regional Park Master Plan
	Contact	See general contact information at end of table	See general contact information at end of table
General Contact Information			
		Mississippi Watershed Management Organization 2522 Marshall St NE, Minneapolis, MN 55413 Telephone: (612) 465-8780 Web: http://www.mwmo.org/	Minneapolis Park and Recreation Board Web: http://www.minneapolisparks.org/home.asp

Water Resource-Related Activities of MWMO Member Organizations

Table 9. Water Resource-Related Activities of MWMO Member Organizations: Hennepin County

Water Category and Topics	Activity Type	MWMO	Hennepin County
Wetlands			
Wetland Conservation Act (WCA)	Responsibility		Hennepin Conservation District staff participate in WCA Technical Evaluation Panel (TEP)
	Contact		Hennepin County Environmental Services
Public Waters Work Permit	Authority	Reviews and comments on Public Works applications before DNR (e.g. dam repair permits)	
	Contact	See general contact information at end of table	
Wetland Inventories	Responsibility	Conduct a Wetland Function and Value Assessment within the Watershed	
Monitoring Programs	Responsibility	Wetland monitoring program Monitor Kasota Ponds wetland complex.	Administers the Wetland Health Evaluation Program (WHEP). WHEP volunteers collect and analyze data to characterize wetland health. Hennepin County Environmental Services staff then cross-check, synthesize, and report the collected data back to the partner organizations.
	Contact	See general contact information at end of table	Hennepin County Environmental Services
Surface Waters			
NPDES Phase I and II Stormwater Permit	Authority	Opportunity to comment on member cities annual reports, generally in April of each year	An MS4. Required to adopt a Stormwater Pollution Prevention Program (SWPPP) to reduce the discharge of pollutants to the maximum extent practicable. The SWPPP covers six minimum control measures: 1. Public education and outreach; 2. Public participation/involvement; 3. Illicit discharge detection and elimination; 4. Construction site runoff control; 5. Post-construction site runoff control; and 6. Pollution prevention/good housekeeping.
	Contact	See general contact information at end of table	James Grube 612-596-0300

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	Hennepin County
			James.Grube@co.hennepin.mn.us
Stormwater Treatment Standards	Authority	Sets stormwater quality and quantity (rate and volume) performance standards watershed-wide for areas within its jurisdiction that are at least as stringent as State Stormwater Standards.	
	Contact	See general contact information at end of table	
Impaired Waters	Responsibility	The MWMO is not a MS4. However, it may voluntarily work with the MS4's to plan and implement TMDL's within the watershed.	Hennepin County is responsible for implementing measures to meet the defined wasteload allocation for their Municipal Separate Storm Sewer System (MS4) for approved TMDLs.
	Contact	See general contact information at end of table	See general contact information at end of table
Surface Water Management	Authority	- Adopts Water Management Plan (WMP) per approval of BWSR. 10-year WMP addresses MWMO standards, goals, strategies, implementation actions to be carried out, and descriptions of program areas. - Requires local governments to adopt their own Water Management Plan consistent with WMO Plan. - Reviews and approves local water management plans. Denial of local water management plan has potential to holdup approval of City comprehensive plan	- Hennepin County is a Plan review authority that review and comment on the 60-day draft of the MWMO Plan
	Contacts	See general contact information at end of table	
Monitoring Programs	Responsibility	Monitoring and Outfall Study. An ongoing program to establish baseline water quantity and quality data that can be used for management of outfalls and receiving waters. Six sites are monitored, five stormwater outfalls discharging to the River, and one site at Loring Pond.	
	Contact	See general contact information at end of table	
Floodplains-			

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	Hennepin County
Flooding			
Floodplain Programs	Responsibility	Requires members to have a MDNR-approved Floodplain Ordinance as part of the review of local water management plans for inclusion of appropriate floodplain policies	- Mapping studies are performed at county level - Most recent Hennepin County Flood Insurance Rate Map (FIRM) effective 11/4/2016
	Contact	See general contact information at end of table	
Localized Flooding Studies and Mapping	Responsibility	MWMO leads or participates in watershed flooding studies for member cities	
	Contact	See general contact information at end of table	
Monitoring Programs	Responsibility	Mississippi river gage reading program	
Shoreland			
Shoreland Management Program	Responsibility	- Requires members to have a MDNR-approved Shoreland Ordinance - Reviews local water management plans for inclusion of appropriate shoreland management policies. - Provides guidance on restoration of eroded Mississippi Riverbank areas	
	Contact	See general contact information at end of table	
Monitoring Programs	Responsibility	Monitors Mississippi riverbank erosion	
	Contact	See general contact information at end of table	
Navigable Waters			
Monitoring Programs	Responsibility	Partnering with City of Minneapolis Departments to monitor the riverway and its infrastructure	
	Contact	See general contact information at end of table	
Groundwater-Drinking Water			

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	Hennepin County
Source Water Assessment Program	Responsibility	Share Mississippi River water quality data	
	Contact	See general contact information at end of table	
Monitoring Programs	Responsibility	Monitor Mississippi River	
	Contact	See general contact information at end of table	
Wastewater Treatment			
NPDES Industrial and Municipal Wastewater	Responsibility	Funds programs to separate stormwater from entering sanitary sewer system.	
	Contact	See general contact information at end of table	
Inflow and Infiltration Program	Responsibility	Provide information on potential surface and groundwater interaction hazards	
	Contact	See general contact information at end of table	
Habitat-Ecological Resources			
Other Ecological Inventories	Responsibility	Conduct studies on a local watershed scale that inventory ecological data such as native plants and plant communities, rare plant and animal species, and functional landscapes	
Misc. Habitat/Ecological Studies			Hennepin County has adopted a natural resources strategic plan. https://www.hennepin.us/-/media/hennepinus/residents/environment/natural-resource-management/natural-resources-strategic-plan.pdf?la=en
Hazardous Waste			

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	Hennepin County
Hazardous Waste	Responsibility		Administer Hazardous Waste regulations and programs in county. Issues licenses to businesses that generate hazardous wastes. Also conducts inspections, collects reports and enforcement. Offers programs for waste reduction and operates disposal sites.
	Contact		612-348-3777 environment@co.hennepin.mn.us
Contaminated Sites Database	Responsibility	Gather information and data on contaminated soils and groundwater affecting groundwater and surface water interactions	
	Contact	See general contact information at end of table	
Above- and below-ground storage tanks	Authority		Through a joint powers agreement, Hennepin County inspects above ground and underground storage tanks.
	Contact		612-348-3777 environment@co.hennepin.mn.us
Power Generation			
Hydropower License	Responsibility	Reviews and comments on projects for effect on water quality, flow rate of Mississippi River	
	Contact	See general contact information at end of table	
Environmental Review			
Environmental Review	Responsibility	Reviews and comments on Major redevelopment EAW/EIS within the Watershed regarding impacts on water quality, rate, and volume	
	Contact	See general contact information at end of table	
Mississippi River Corridor Plans			
Mississippi River Corridor Plans	Authority		Hennepin County prepares or amends Mississippi River Critical Corridor Area plans, as required under Minnesota Rules, chapter 6106.0060,

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	Hennepin County
			subp.7.
	Contact		See general contact information at end of table
	Responsibility		Hennepin County's role in MRCCA stems from ownership and operation of transportation facilities (county roads and bridges) within MRCCA
	Contact	See general contact information at end of table	See general contact information at end of table
General Contact Information			
		Mississippi Watershed Management Organization 2522 Marshall St NE, Minneapolis, MN 55413 Telephone: (612) 465-8780 Web: http://www.mwmo.org/	Hennepin County Government Center 300 South 6th Street Minneapolis, MN 55487 Web: http://www.hennepin.us/

Water Resource-Related Activities of MWMO Member Organizations

Table 10. Water Resource-Related Activities of MWMO Member Organizations: Anoka County

Water Category and Topics	Activity Type	MWMO	Anoka County
Wetlands			
Wetland Conservation Act (WCA)	Responsibility		Anoka Conservation District staff participate in WCA Technical Evaluation Panel (TEP)
	Contact		Chris Lord Anoka Conservation District Manager chris.lord@anokaswcd.org 763/434-2030
Public Waters Work Permit	Authority	Reviews and comments on Public Works applications before DNR (e.g. dam repair permits)	Anoka County controls access to Highland Lake via ownership of the land adjacent to the lake.
	Contact	See general contact information at end of table	Anoka County Parks 763-324-3300
Wetland Inventories	Responsibility	Conduct a Wetland Function and Value Assessment within the Watershed	Completed a 2004 MLCCS Mapping Project
Monitoring Programs	Responsibility	Wetland monitoring program Monitor Kasota Ponds wetland complex.	
	Contact	See general contact information at end of table	
Surface Waters			
NPDES Phase I and II Stormwater Permit	Authority	Opportunity to comment on member cities annual reports, generally in April of each year	An MS4. Required to adopt a Stormwater Pollution Prevention Program (SWPPP) to reduce the discharge of pollutants to the maximum extent practicable. The SWPPP covers six minimum control measures: 1. Public education and outreach; 2. Public participation/involvement; 3. Illicit discharge detection and elimination; 4. Construction site runoff control; 5. Post-construction site runoff control; and 6. Pollution prevention/good housekeeping.
	Contact	See general contact information at end of table	Nick Dobda 763-862-4261

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	Anoka County
			nicholas.dobda@co.anoka.mn.us
Stormwater Treatment Standards	Authority	Sets stormwater quality and quantity (rate and volume) performance standards watershed-wide for areas within its jurisdiction that are at least as stringent as State Stormwater Standards.	
	Contact	See general contact information at end of table	
Impaired Waters	Responsibility	The MWMO is not a MS4. However, it may voluntarily work with the MS4's to plan and implement TMDL's within the watershed.	
	Contact	See general contact information at end of table	
Surface Water Management	Authority	- Adopts Water Management Plan (WMP) per approval of BWSR. 10-year WMP addresses MWMO standards, goals, strategies, implementation actions to be carried out, and descriptions of program areas. - Requires local governments to adopt their own Water Management Plan consistent with WMO Plan. - Reviews and approves local water management plans. Denial of local water management plan has potential to holdup approval of City comprehensive plan	Anoka County is a Plan review authority that review and comment on the 60-day draft of the MWMO Plan Anoka County water management roles are detailed at: https://www.anokacounty.us/1421/Water-Information-and-Management
	Contacts	See general contact information at end of table	
Public Water Access	Authority		Maintains public water access in County parks, as applicable
	Contact		Anoka County Parks 763-324-3300
Monitoring Programs	Responsibility	Monitoring and Outfall Study. An ongoing program to establish baseline water quantity and quality data that can be used for management of outfalls and receiving waters. Six sites are	Multiple resource assessment, ongoing resource monitoring, and water quality performed through Anoka Conservation District.

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	Anoka County
		monitored, five stormwater outfalls discharging to the River, and one site at Loring Pond.	
	Contact	See general contact information at end of table	Anoka Conservation District 763-434-2030
Floodplains-Flooding			
Floodplain Programs	Responsibility	Requires members to have a MDNR-approved Floodplain Ordinance as part of the review of local water management plans for inclusion of appropriate floodplain policies	
	Contact	See general contact information at end of table	
Localized Flooding Studies and Mapping	Responsibility	MWMO leads or participates in watershed flooding studies for member cities	- Mapping studies are performed at county level - Most recent Anoka County Flood Insurance Rate Map (FIRM) effective 12/16/2015
	Contact	See general contact information at end of table	
Monitoring Programs	Responsibility	Mississippi river gage reading program	
Shoreland			
Shoreland Management Program	Responsibility	- Requires members to have a MDNR-approved Shoreland Ordinance - Reviews local water management plans for inclusion of appropriate shoreland management policies. - Provides guidance on restoration of eroded Mississippi Riverbank areas	
	Contact	See general contact information at end of table	
Monitoring Programs	Responsibility	Monitors Mississippi riverbank erosion	
	Contact	See general contact information at end of table	
Groundwater-Drinking Water			
Source Water	Responsibility	Share Mississippi River water quality data	

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	Anoka County
Assessment Program			
	Contact	See general contact information at end of table	
Monitoring Programs	Responsibility	Monitor Mississippi River	Anoka County Water Resources Management Report contains groundwater information: https://www.anokacounty.us/1421/Water-Information-and-Management
	Contact	See general contact information at end of table	
Wastewater Treatment			
NPDES Industrial and Municipal Wastewater	Responsibility	Funds programs to separate stormwater from entering sanitary sewer system.	
	Contact	See general contact information at end of table	
Inflow and Infiltration Program	Responsibility	Provide information on potential surface and groundwater interaction hazards	
	Contact	See general contact information at end of table	
Habitat-Ecological Resources			
Other Ecological Inventories	Responsibility	Conduct studies on a local watershed scale that inventory ecological data such as native plants and plant communities, rare plant and animal species, and functional landscapes	
Misc. Habitat/Ecological Studies			Active natural resource programming through Anoka County Parks: www.anokacounty.us/823/Programs-Activities Anoka Conservation District Projects www.anokaswcd.org Anoka County Parks System Plan 2018: https://www.anokacounty.us/DocumentCenter/V

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	Anoka County
			iew/19424/Park-System-Plan?bidId=
Hazardous Waste			
Hazardous Waste	Responsibility		Administer Hazardous Waste regulations and programs in county. Issues licenses to businesses that generate hazardous wastes. Also conducts inspections, collects reports and enforcement. Offers programs for waste reduction and operates disposal sites.
	Contact		763-422-7063
Contaminated Sites Database	Responsibility	Gather information and data on contaminated soils and groundwater affecting groundwater and surface water interactions	
	Contact	See general contact information at end of table	
Above- and below-ground storage tanks	Authority		Through a joint powers agreement, Hennepin County inspects above ground and underground storage tanks.
	Contact		612-348-3777 environment@co.hennepin.mn.us
Power Generation			
Hydropower License	Responsibility	Reviews and comments on projects for effect on water quality, flow rate of Mississippi River	
	Contact	See general contact information at end of table	
Environmental Review			
Environmental Review	Responsibility	Reviews and comments on Major redevelopment EAW/EIS within the Watershed regarding impacts on water quality, rate, and volume	
	Contact	See general contact information at end of table	
Mississippi River Corridor Plans			
Mississippi	Authority		Anoka County prepares or amends Mississippi

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	Anoka County
River Corridor Plans			River Critical Corridor Area plans, as required under Minnesota Rules, chapter 6106.0060, subp.7.
	Contact		See general contact information at end of table
	Responsibility		Anoka County's role in MRCCA stems from ownership of park land within MRCCA.
	Contact	See general contact information at end of table	See general contact information at end of table
General Contact Information			
		Mississippi Watershed Management Organization 2522 Marshall St NE, Minneapolis, MN 55413 Telephone: (612) 465-8780 Web: http://www.mwmo.org/	Anoka Conservation District- Telephone: (763) 434-2032 Web: www.anokaswcd.org Anoka County Environmental Services Telephone: (763) 422-7063 Web: www.anokacounty.us

Water Resource-Related Activities of MWMO Member Organizations

Table 11. Water Resource-Related Activities of MWMO Member Organizations: Ramsey County

Water Category and Topics	Activity Type	MWMO	Ramsey County
Wetlands			
Wetland Conservation Act (WCA)	Responsibility		Ramsey Conservation District staff participate in WCA Technical Evaluation Panel (TEP)
	Contact		Michael Schumann 651-266-7275 michael.schumann@co.ramsey.mn.us
Public Waters Work Permit	Authority	Reviews and comments on Public Works applications before DNR (e.g. dam repair permits)	
	Contact	See general contact information at end of table	
Wetland Inventories	Responsibility	Conduct a Wetland Function and Value Assessment within the Watershed	
Monitoring Programs	Responsibility	Wetland monitoring program Monitor Kasota Ponds wetland complex.	
	Contact	See general contact information at end of table	
Surface Waters			
NPDES Phase I and II Stormwater Permit	Authority	Opportunity to comment on member cities annual reports, generally in April of each year	An MS4. Required to adopt a Stormwater Pollution Prevention Program (SWPPP) to reduce the discharge of pollutants to the maximum extent practicable. The SWPPP covers six minimum control measures: 1. Public education and outreach; 2. Public participation/involvement; 3. Illicit discharge detection and elimination; 4. Construction site runoff control; 5. Post-construction site runoff control; and 6. Pollution prevention/good housekeeping.
	Contact	See general contact information at end of table	Ted Schoenecker 651-266-7116

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	Ramsey County
			ted.schoenecker@co.ramsey.mn.us
Stormwater Treatment Standards	Authority	Sets stormwater quality and quantity (rate and volume) performance standards watershed-wide for areas within its jurisdiction that are at least as stringent as State Stormwater Standards.	
	Contact	See general contact information at end of table	
Impaired Waters	Responsibility	The MWMO is not a MS4. However, it may voluntarily work with the MS4's to plan and implement TMDL's within the watershed.	Ramsey County responsible for implementing measures to meet the defined waste load allocation for their Municipal Separate Storm Sewer System (MS4) for approved TMDLs
	Contact	See general contact information at end of table	See general contact information at end of table
Surface Water Management	Authority	- Adopts Water Management Plan (WMP) per approval of BWSR. 10-year WMP addresses MWMO standards, goals, strategies, implementation actions to be carried out, and descriptions of program areas. - Requires local governments to adopt their own Water Management Plan consistent with WMO Plan. - Reviews and approves local water management plans. Denial of local water management plan has potential to holdup approval of City comprehensive plan	Ramsey County is a Plan review authority that review and comment on the 60-day draft of the MWMO Plan
	Contacts	See general contact information at end of table	
Public Water Access	Authority		Maintains public water access in County parks, as applicable
	Contact		Ramsey County Parks and Recreation 651-266-8500
Monitoring Programs	Responsibility	Monitoring and Outfall Study. An ongoing program to establish baseline water quantity and quality data that can be used for management of outfalls and receiving waters. Six sites are	Lake water quality monitoring program, 29 lakes profile water chemistry throughout growing season; bacteriological testing of 11 County beaches; winter dissolved oxygen monitoring

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	Ramsey County
		monitored, five stormwater outfalls discharging to the River, and one site at Loring Pond.	
	Contact	See general contact information at end of table	(651) 266-7160
Floodplains-Flooding			
Floodplain Programs	Responsibility	Requires members to have a MDNR-approved Floodplain Ordinance as part of the review of local water management plans for inclusion of appropriate floodplain policies	
	Contact	See general contact information at end of table	
Localized Flooding Studies and Mapping	Responsibility	MWMO leads or participates in watershed flooding studies for member cities	- Mapping studies are performed at county level - Most recent Ramsey County Flood Insurance Rate Map (FIRM) effective 6/4/2010
	Contact	See general contact information at end of table	
Monitoring Programs	Responsibility	Mississippi river gage reading program	
Shoreland			
Shoreland Management Program	Responsibility	- Requires members to have a MDNR-approved Shoreland Ordinance - Reviews local water management plans for inclusion of appropriate shoreland management policies. - Provides guidance on restoration of eroded Mississippi Riverbank areas	
	Contact	See general contact information at end of table	
Monitoring Programs	Responsibility	Monitors Mississippi riverbank erosion	
	Contact	See general contact information at end of table	
Groundwater-Drinking Water			
Source Water Assessment	Responsibility	Share Mississippi River water quality data	

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	Ramsey County
Program			
	Contact	See general contact information at end of table	
Monitoring Programs	Responsibility	Monitor Mississippi River	
	Contact	See general contact information at end of table	
Wastewater Treatment			
NPDES Industrial and Municipal Wastewater	Responsibility	Funds programs to separate stormwater from entering sanitary sewer system.	
	Contact	See general contact information at end of table	
Inflow and Infiltration Program	Responsibility	Provide information on potential surface and groundwater interaction hazards	
	Contact	See general contact information at end of table	
Habitat-Ecological Resources			
Other Ecological Inventories	Responsibility	Conduct studies on a local watershed scale that inventory ecological data such as native plants and plant communities, rare plant and animal species, and functional landscapes	
Monitoring Programs			Completes aquatic plant population surveys; coordinates nuisance plant control of Ramsey County beaches and boat ramps; Operates aeration systems on six County lakes
			Public Works (651) 266-7160
Misc. Habitat/Ecological Studies			Active natural resource programming through Ramsey County Parks and Recreation https://www.ramseycounty.us/residents/parks-recreation/habitats-natural-resources-management

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	Ramsey County
Hazardous Waste			
Hazardous Waste	Responsibility		Administer Hazardous Waste regulations and programs in county. Issues licenses to businesses that generate hazardous wastes. Also conducts inspections, collects reports and enforcement. Offers programs for waste reduction and operates disposal sites.
	Contact		651-633-3279
Contaminated Sites Database	Responsibility	Gather information and data on contaminated soils and groundwater affecting groundwater and surface water interactions	
	Contact	See general contact information at end of table	
Power Generation			
Hydropower License	Responsibility	Reviews and comments on projects for effect on water quality, flow rate of Mississippi River	
	Contact	See general contact information at end of table	
Environmental Review			
Environmental Review	Responsibility	Reviews and comments on Major redevelopment EAW/EIS within the Watershed regarding impacts on water quality, rate, and volume	
	Contact	See general contact information at end of table	
Mississippi River Corridor Plans			
Mississippi River Corridor Plans	Authority		Ramsey County prepares or amends Mississippi River Critical Corridor Area plans, as required under Minnesota Rules, chapter 6106.0060, subp.7.
	Contact		See general contact information at end of table
	Responsibility		Ramsey County addresses MRCCA issues in its Comp Plan; no portion of the MRCCA in Ramsey

Water Resource-Related Activities of MWMO Member Organizations

Water Category and Topics	Activity Type	MWMO	Ramsey County
			County is located in MWMO
	Contact	See general contact information at end of table	See general contact information at end of table
General Contact Information			
		Mississippi Watershed Management Organization 2522 Marshall St NE, Minneapolis, MN 55413 Telephone: (612) 465-8780 Web: http://www.mwmo.org/	Ramsey County Telephone: (651) 266-8500 Web: http://www.co.ramsey.mn.us/home/index.htm

Appendix D

Soil Series Descriptions

Soil Series Descriptions

Soil Orders
Mollisols — This order covers a considerable land area of western and southern Minnesota and is the basis for the state's productive agricultural base. The formative syllable, *oll*, is derived from the Latin word *mollis*, or soft. Its most distinguishing feature is a thick, dark-colored surface layer that is high in nutrients. It occurs throughout the former prairie areas of Minnesota. The Latin term for soft in its name is descriptive in that most of these soils usually have a rather loose, low-density surface. Three suborders of mollisols occur in Minnesota: Aquolls, Udolls, and Ustolls.

Alfisols — This order covers a large land area in Minnesota, part of which is now cultivated and part forested. *Alf* is the formative element and is coined from a soil term, pedalfer. Pedalfers were identified in the 1930s as soils of the eastern part of the United States with an accumulation of aluminum and iron. The *alf* refers to the chemical symbols for aluminum (Al) and iron (Fe). Alfisols are primarily fertile soils of the forest, formed in loamy or clayey material. The surface layer of soil, usually light gray or brown, has less clay in it than does the subsoil. These soils are usually moist during the summer, although they may dry during occasional droughts. Two suborders of alfisols occur in Minnesota: Aqualfs and Udalfs.

Histosols — The formative element in the name is *ist* and comes from the Greek word histos, which means tissue. This is an appropriate association because these soils are formed from plant remains in wet environments like marshes and bogs. Although they occur throughout most of Minnesota, these soils are found most extensively in the north, in the beds of former glacial lakes. Histosols, or organic soils, have been termed peat and muck; in Soil Taxonomy they are Saprists, Hemists, and Fibrists.

Condensed Soils Series Descriptions
Source: USDA-NRCS Soil Survey Division
http://ortho.ftw.nrcs.usda.gov/cgi-bin/osd/osdname.cgi

Ramsey County Soils – 264
The Freeon series are Alfisols with the following characteristics:

- Very deep, moderately well drained soils
- Soil with a perched seasonal high water table at a depth of 2 to 3.5 feet for 1 month or more at some time during the period of September to June in most years
- Formed in loess or silty lacustrine deposits and in the underlying dense sandy loam till on ground moraines, end moraines, disintegration moraines, drumlins, and ice-walled glacial lake plains of Late Wisconsinan Age
- Permeability is moderate in the silty mantle, slow or moderately slow in the till subsoil, and very slow in the substratum.
- Slopes range from 0 to 20 percent
- Coarse-loamy, mixed, superactive, frigid Oxyaquic Glossudalfs
- Native vegetation is deciduous forest. Common trees are Sugar Maple, Black Cherry, American Basswood, White Ash, Yellow Birch, American Elm, Bigtooth Aspen, Quaking Aspen, Balsam Fir, Northern Red Oak, and Eastern Hophornbeam

Ramsey County Soils – 266
The Freer series are Alfisols that consist of:

- Poorly drained soils

- Soils formed in silty sediments of eolian or lacustrine sediments and noncalcareous dense loamy glacial till of Late Wisconsinan Age.
- Soils that are moderately deep or deep to dense till (paralithic contact)
- Soils that have moderate permeability in the silty mantle and very slow permeability in the dense till
- Slopes ranging from 0 to 3 percent
- Fine-loamy, mixed, superactive, frigid Aeric Glossaqualfs
- Native vegetation that was mixed deciduous forest or mixed deciduous-coniferous forest

Ramsey County Soils – 543
The Markey series is a hydric soil with the following characteristics:

- Very deep, very poorly drained organic soils
- Formed in herbaceous organic material 40 to 130 centimeters thick overlying sandy deposits in depressions on outwash plains, lake plains, flood plains, river terraces, valley trains, and moraines. Soils on nearby uplands are predominantly sandy.
- Saturated hydraulic conductivity is moderately slow to moderately rapid in the organic layers and rapid or very rapid in the sandy material.
- Slopes range from 0 to 2 percent
- Sandy or sandy-skeletal, mixed, euic, frigid Terric Haplosaprists
- Generally dominated by sapric material
- Most of this soil is in native vegetation. Most areas are forested with Black Ash, Quaking Aspen, Balsam Fir, Black Spruce, Tamarack, Northern White Cedar, and Paper Birch. Some areas are in cattails, marsh grasses, reeds, and sedges. A small part is used for permanent pasture.

Ramsey County Soils – 862 – Urban Land – Dundas Complex
The Dundas series is an Alfisol with the following characteristics:

- Very deep, poorly drained soils that formed in loamy calcareous till on moraines
- Soils on level, or nearly level, plane to slightly convex slopes on end or ground moraines. They formed mostly in friable calcareous, glacial till of Late Wisconsin Age.
- These soils have moderately slow saturated hydraulic conductivity. Poorly drained
- Slopes range from 0 to 2 percent
- Fine-loamy, mixed, superactive, mesic Mollic Endoaqualfs
- Native vegetation was mixed deciduous forest and prairie grass.

Ramsey County Soils – 132C – Hayden
The Hayden series is an Alfisol with the following characteristics:

- Deep, well drained soils
- Formed in calcareous loamy glacial till on glacial moraines and till plains
- These soils have moderate permeability
- Their slopes range from 2 to 40 percent
- Fine-loamy, mixed, superactive, mesic Glossic Hapludalfs
- On gently undulating through steep glacial moraines of the Des Moines and Grantsburg sublobe of the Late Wisconsinan glaciation. Montmorillonite is the dominant clay mineral in the glacial till.
- Native vegetation was deciduous forest of Maple, Basswood, Oak, and Elm.

Ramsey County Soils – 153B
The Santiago series is an Alfisol with the following characteristics:

- Well drained soils which are deep to a densic contact
- They formed in loess or silty lacustrine deposits and in the underlying dense sandy loam till on ground moraines, disintegration moraines, and end moraines
- Permeability is moderate in the silty mantle, slow or moderately slow in the lower part of the solum, and very slow in the substratum
- Slope ranges from 1 to 45 percent
- Coarse-loamy, mixed, superactive, frigid Haplic Glossudalfs
- Native vegetation is mixed hardwood forest with a few conifers. Common trees are Sugar Maple, American Basswood, Northern Red Oak, White Ash, American Elm, and Quaking Aspen with some White Pine and Red Pine

Ramsey County Soils – 155C
The Chetek series is an Alfisol with the following characteristics:

- Very deep, somewhat excessively drained soils which are shallow to sandy outwash
- They formed mostly in loamy alluvium and in the underlying sandy and gravelly outwash. Typically, they are on outwash plains and stream terraces but some are on moraines or kame terraces.
- Permeability is moderate or moderately rapid in the loamy mantle and rapid or very rapid in the sandy outwash.
- Slopes range from 0 to 45 percent
- Coarse-loamy, mixed, superactive, frigid Inceptic Hapludalfs
- The native vegetation is mixed deciduous and coniferous forest.

Ramsey County Soils – 342D
The Kingsley series is an Alfisol with the following characteristics:

- Very deep, well drained soils
- Formed in loamy glacial till on glacial moraines
- Soils that formed in nonacid, reddish brown sandy loam till located on convex slopes on complex undulating to steep moraines of Late Wisconsin age
- Soils that have moderate over moderately slow permeability
- Slopes range from 2 to 40 percent
- Coarse-loamy, mixed, superactive, mesic Mollic Hapludalfs
- The native vegetation was mixed deciduous forest. Present day vegetation is mainly oaks.

Ramsey County Soils – 857C – Urban Lands – Waukegan Complex
The Waukegan series are Mollisols with the following characteristics:

- Very deep, well drained soils
- Formed in 50 to 100 centimeters of loess or silty glacial alluvium and in the underlying sandy or sandy-skeletal glacial outwash
- These soils are on slightly concave to convex slopes on glacial outwash plains and valley trains.
- Slope ranges from 0 to 12 percent
- Fine-silty over sandy or sandy-skeletal, mixed, superactive, mesic Typic Hapludolls
- The native vegetation is Big Bluestem, Indiangrass, Switchgrass, and other grasses of the tall grass prairie.

Hennepin County Soils – D4 – Dorset sandy loam, (B) 2 to 6 percent slopes and (C) 6 to 12 percent slopes
The Dorset series is a Mollisol with the following characteristics:

- Very deep, somewhat excessively drained soils
- Soils formed in a thin loamy mantle and in underlying sandy and gravelly outwash sediments. They are on plane or convex slopes on outwash plains, valley trains, stream terraces and moraines.
- Slopes range from 0 to 35 percent
- Coarse-loamy, mixed, superactive, frigid Calcic Argiudolls
- Native vegetation is prairie grasses, later succeeded by mixed deciduous and coniferous forest.

Hennepin County Soils – D7A – Hubbard loamy sand, (A) 0 to 2 percent slopes, (B) 2 to 6 percent slopes and (C) 6 to 12 percent slopes
The Hubbard series are Mollisols with the following characteristics:

- Very deep, excessively drained soils
- Soils that formed in sandy glacial outwash on outwash plains, valley trains, and stream terraces. The materials are of the Late Wisconsin glaciation
- Slopes range from 0 to 35 percent
- Sandy, mixed, frigid Entic Hapludolls
- Native vegetation is principally tall grass prairie with scattered Bur Oak and Hazel

Hennepin County Soils – D8E – Sandberg Series
The Sandberg Series is a Mollisol with the following characteristics:

- Very deep, excessively drained soils
- Soils that formed in coarse or moderately coarse glacial outwash sediments or glacial beach deposits with or without a thin loamy mantle
- These soils are on outwash plains, glacial lake beaches, stream terraces, valley trains, and glacial moraines .
- Permeability is moderately rapid or rapid in the upper part and very rapid in the lower part.
- Slopes range from 0 to 45 percent
- Sandy, mixed, frigid Calcic Hapludolls
- Native vegetation is mixed prairie grasses with scattered oak hardwoods.

Hennepin County Soils – D8E – Sandberg Series
The Sandberg Series is a Mollisol with the following characteristics:

- Very deep, excessively drained soils
- Soils that formed in coarse or moderately coarse glacial outwash sediments or glacial beach deposits with or without a thin loamy mantle
- These soils are on outwash plains, glacial lake beaches, stream terraces valley trains, and glacial moraines.
- Permeability is moderately rapid or rapid in the upper part and very rapid in the lower part.
- Slopes range from 0 to 45 percent
- Sandy, mixed, frigid Calcic Hapludolls
- Native vegetation is mixed prairie grasses with scattered oak hardwoods.

Hennepin County Soils – D17A – Duelm loamy sand, 0 to 2 percent slopes
The Duelm series are Mollisols that consist of:

- Very deep, moderately well drained soils
- Soils that are on plane to slightly concave or convex positions on level to undulating outwash plains, stream terraces, and valley trains. Slope gradients are 0 to 3 percent. The soil

formed in Des Moines lobe sandy outwash sediments of Late Wisconsinan Age. These soils have slopes of 0 to 3 percent.
- Sandy, mixed, frigid Oxyaquic Hapludolls
- Native vegetation is mixed tall prairie grasses and deciduous forest.

Hennepin County Soils – D28B – Urban Land – Bygland Complex, 1 to 6 percent slopes
The Bygland series are Mollisols with the following characteristics:
- Very deep, moderately well drained soils
- Soils that formed in lacustrine sediments
- These soils are typically on plane to convex slopes on glacial lake plains and ice walled lakes within moraines. The soils formed in silty lacustrine sediments over 80 inches thick.
- Surface runoff is medium to high. Permeability is moderately slow. An apparent water table occurs in most years from 2.5 to 3.5 feet during the months April to June.
- The permeability is moderately slow.
- Slopes range from 0 to 20 percent.
- Fine, smectitic, frigid Oxyaquic Vertic Argiudolls
- Native vegetation is mixed hardwoods and prairie grasses..

Hennepin County Soils – D29B – Urban Land – Hubbard Complex, bedrock substratum, 0 to 8 percent slopes
The Hubbard series are Mollisols consisting of
- Very deep, excessively drained soils
- Soils that formed in sandy glacial outwash on outwash plains, valley trains and stream terraces. The materials are of the Late Wisconsin glaciation.
- Slopes range from 0 to 35 percent.
- Sandy, mixed, frigid Entic Hapludolls
- Native vegetation is principally tall grass prairie with scattered Bur Oak and Hazel.

Hennepin County Soils – D30A – Seelyeville
The Seelyeville series are Histosols that consist of:
- Very deep, very poorly drained soils
- Soils formed in organic materials more than 51 inches thick
- These soils are on glacial outwash plains, valley trains, flood plains, glacial lake plains, and glacial moraines.
- They have moderately rapid to moderately slow permeability.
- Slopes are 0 to 15 percent
- Euic, frigid Typic Haplosaprists
- Native vegetation primarily is sedges and grasses. Some areas have scattered Alders, Willow, Tamarack, and Bog Birch.

Hennepin County Soils –D31A—Urban land-Duelm complex, 0 to 2 percent slopes
The Duelm series are Mollisols that consist of:
- Very deep, moderately well drained soils
- Soils that are on plane to slightly concave or convex positions on level to undulating outwash plains, stream terraces, and valley trains. Slope gradients are 0 to 3 percent. The soil formed in Des Moines lobe sandy outwash sediments of Late Wisconsinan Age. These soils have slopes of 0 to 3 percent.
- Sandy, mixed, frigid Oxyaquic Hapludolls
- Native vegetation is mixed tall prairie grasses and deciduous forest.

Hennepin County Soils – D33 – Urban Land – Dorset, (B) 0 to 8 percent slopes and (C) 8 to 18 percent slopes

The Dorset series are Mollisols with the following characteristics:

- Very deep, somewhat excessively drained soils
- Soils formed in a thin loamy mantle and in underlying sandy and gravelly outwash sediments. They are on plane or convex slopes on outwash plains, valley trains, stream terraces and moraines.
- Slopes range from 0 to 35 percent.
- Coarse-loamy, mixed, superactive, frigid Calcic Argiudolls
- Native vegetation is prairie grasses, later succeeded by mixed deciduous and coniferous forest.

Hennepin County Soils - D34B - Urban land-Hubbard complex, 0 to 8 percent slopes

The Hubbard series are Mollisols with the following characteristics:

- Very deep, excessively drained soils
- Soils that formed in sandy glacial outwash on outwash plains, valley trains and stream terraces. The materials are of the Late Wisconsin glaciation.
- Slopes range from 0 to 35 percent.
- Sandy, mixed, frigid Entic Hapludolls
- Native vegetation is principally tall grass prairie with scattered Bur Oak and Hazel.

Hennepin County Soils – D35A – Elkriver

The Elkriver series are Mollisols with the following characteristics:

- Very deep, somewhat poorly and moderately well drained soils
- Soils that formed in postglacial alluvium consisting of a coarse-loamy mantle and underlying sandy sediments on flood plains.
- Soils that have moderate and moderately rapid permeability in the upper part and rapid permeability in the underlying material.
- Slopes range from 0 to 3 percent.
- Coarse-loamy, mixed, superactive, frigid Cumulic Hapludolls
- Native vegetation is mixed prairie grasses and mixed deciduous forest.

Fordum is an inclusion in this Map Unit.

The Fordum series are Entisols with the following characteristics:

- Very deep, poorly drained soils
- Soils which are moderately deep to sand
- They formed in recent alluvium on flood plains.
- Permeability is moderate or moderately rapid in the loamy alluvium and rapid or very rapid in the sandy alluvium.
- Slopes range from 0 to 2 percent.
- Coarse-loamy, mixed, superactive, nonacid, frigid Mollic Fluvaquents
- Soils are on the lowest part of the floodplain adjacent to stream or river channels. Numerous abandoned meander, small overflow channels, and scours produce an irregular microrelief.
- Common trees are Silver Maple, Red Maple, Quaking Aspen, Big Tooth Aspen, Paper Birch, American Elm, White Spruce, and Yellow Birch. Tag Alder is common in many places. Some areas are in marsh vegetation of grasses, seeds, sedges, and shrubs.

D37F—Dorset, bedrock substratum-Rock outcrop complex, 25 to 65 percent slopes
The Dorset series are Mollisols with the following characteristics:

- Very deep, somewhat excessively drained soils
- Soils formed in a thin loamy mantle and in underlying sandy and gravelly outwash sediments. They are on plane or convex slopes on outwash plains, valley trains, stream terraces and moraines.
- Slopes range from 0 to 35 percent.
- Coarse-loamy, mixed, superactive, frigid Calcic Argiudolls
- Native vegetation is prairie grasses, later succeeded by mixed deciduous and coniferous forest.

Hennepin County Soils – D41C – Urban Land – Waukon Complex, 6 to 18 percent slopes
The Waukon series is an Alfisol with the following characteristics:

- Very deep, well drained soils
- Soils that formed in glacial till on glacial moraines.
- Permeability is moderate.
- Slopes range from 0 to 40 percent.
- Fine-loamy, mixed, superactive, frigid Mollic Hapludalfs
- Native vegetation was prairie grasses which later were succeeded by mixed hardwood forest.

Hennepin County Soils – L3C—Rasset sandy loam, 6 to 12 percent slopes
The Rasset series are Mollisols with the following characteristics:

- Very deep, well drained soils
- Soils that formed in 50 to 100 centimeters of loamy sediments and the underlying sandy and gravelly outwash.
- Soils on nearly level to convex slopes on outwash plains, valley trains, and moraines and on treads and risers of strath terraces.
- Slope ranges from 0 to 40 percent.
- Coarse-loamy, mixed, superactive, mesic Typic Argiudolls
- The native vegetation is mixed deciduous forest and Big Bluestem, Little Bluestem, Switchgrass, and other grasses of the tall grass prairie.

Hennepin County Soils – L52C—Urban land-Lester complex, 2 to 18 percent slopes
The Lester series are Alfisols with the following characteristics:

- Very deep, well drained soils
- Soils that formed in calcareous loamy till on till plains and moraines of the late Wisconsinan Age.
- Soils that have moderate permeability.
- Their slopes range from 5 to 70 percent.
- Fine-loamy, mixed, superactive, mesic Mollic Hapludalfs
- Native vegetation is savanna.

Hennepin County Soils – L53B—Urban land-Moon complex, 2 to 8 percent slopes
The Moon series are Alfisols that consist of:

- Very deep, moderately well drained soils
- Soils that formed in wind- or water-laid sandy material and the underlying till on moraines and till plains.
- Soils whose permeability is rapid in the upper sandy material and moderate or moderately slow in the underlying loamy till.

- Slope ranges from 0 to 5 percent.
- Loamy, mixed, active, mesic Arenic Oxyaquic Hapludalfs
- Native vegetation is deciduous forest.

Hennepin County Soils - L54A—Urban land-Dundas complex, 0 to 3 percent slopes
The Dundas series is an Alfisol with the following characteristics:

- Very deep, poorly drained soils that formed in loamy calcareous till on moraines.
- Soils on level, or nearly level, plane to slightly convex slopes on end or ground moraines. They formed mostly in friable calcareous, glacial till of Late Wisconsin Age.
- These soils have moderately slow saturated hydraulic conductivity. Poorly drained
- Slopes range from 0 to 2 percent.
- Fine-loamy, mixed, superactive, mesic Mollic Endoaqualfs
- Native vegetation was mixed deciduous forest and prairie grass.

Hennepin County Soils - L55—Urban land-Malardi complex, (B) 0 to 8 percent slopes and (C) 8 to 18 percent
The Malardi series is a Mollisol with the following characteristics:

- Very deep, somewhat excessively drained soils that formed in loamy outwash sediments.
- Soils on nearly level or convex slopes on outwash plains, stream terraces, and collapsed glacial alluvium within ground moraines and end moraines.
- Surface runoff potential is negligible to medium.
- Slopes range from 0 to 35 percent.
- Coarse-loamy, mixed, superactive, mesic Typic Argiudoll.
- Native vegetation was mixed deciduous forest and prairie grass of the tall grass prairie.

Hennepin County Soils -L62—Koronis-Kingsley-Malardi complex, (C2) 6 to 12 percent slopes, eroded and (E) 18 to 35 percent slopes
The Koronis series is with the following characteristics:

- Very deep, well drained soils that formed in loamy glacial till on moraines.
- Permeability is moderate or moderately rapic.
- Slopes range from 2 to 40 percent.
- Fine-loamy, mixed, superactive, mesic Mollic Hapludalfs
- Native vegetation was savanna or prairie later succeeded by mixed hardwood forest.

Hennepin County Soils – U1A, U2A, and U5A – Udorthents, Wet Substratum – Soils
These are all soils mapped without reference to a soil series, identified by the NRCS as highly disturbed, cut and fill, or impervious surface. These three units are mapped as disturbed soils with wet substratum due to filling or draining activities.

Hennepin County Soils – U3B, U4A, and U6B – Udorthents, Cut and Fill – Soils
These are all soils mapped without reference to a soil series, identified by the NRCS as highly disturbed, cut and fill, or impervious surface. There is no indication that these soils were hydric soils prior to disturbance.

1929 Hennepin County Soil Survey

The 1929 Hennepin County Soil Survey mapped portions of Minneapolis prior to development, and subsequent soil disturbance that effectively removed native soil characteristics. To a large degree, the

Northeast portion of the project area has not been mapped since the first soils series. Two predominant map units were described during the 1920s survey in Northeast Minneapolis. The dominant soil unit in the northeast corner of the MWMO area was mapped as Hayden Loam, with Webster Silty Clay Loam forming extensive areas in depressions and swales leading downslope to the west.

The Soil Survey described the entire county as "originally covered with hardwood forests," except for some of the sandy plains along the Minnesota and Mississippi Rivers.

Hayden Loam – This soil was described in the 1929 survey as a light-gray or gray surface soil ranging in texture from fine sandy loam to loam. The upper part when moist is sticky and plastic, and when dry becomes somewhat hard. "The fine texture of the subsoil allows it to retain moisture well. The deeper part of the subsoil consists of friable . . . sandy clay loam or clay loam containing considerable lime. In areas in which the surface is more rolling, the soil has a tendency to wash, the finer material being carried to the lowlands, leaving the brown heavier upper subsoil exposed. Therefore, the lower slopes of many of the steeper hills have a finer-textured soil. In some places erosion has formed small gullies, but sheet erosion has been more damaging."

"Most of the Hayden loam has a sufficiently coarse-textured surface soil that, after being saturated with water, dried out rather rapidly, thus allowing the land to be worked early in the spring. With the exception of the well-drained sands, this soil is among the first in the county to dry in the spring and accordingly is the first to be worked. It is naturally productive . . . Most of the land devoted to pasture consists of wooded and hilly tracts."

This is to a large degree, the 1929 soil description

The modern soils series provides a generally similar description. Features of the modern description of the **Hayden Series** are:

- Forest ecosystem Alfisols
- Deep, well drained soils that formed in calcareous loamy glacial till on moraines and till plains.
- Permeability is moderate
- Slopes range from 2 to 40 percent.
- Fine-loamy, mixed, superactive, mesic Glossic Hapludalfs
- Plane or convex slopes on gently undulating to steep moraines of the Des Moines and Grantsburg sublobe.
- Native vegetation was deciduous forest of Maple, Basswood, Oak, and Elm.

Webster Silt Loam - The other common soils mapped in the northeast portion of Minneapolis were Webster and peat. Peat soils are soils of poorly decomposed organic matter. The map units D30A (Hennepin County) and 543 (Ramsey County) are typical modern mapped units of organic peat or muck. The Webster soils are described in the 1929 Soil Survey as dark-colored poorly drained sandy loam to clay loam. The upper part of the subsoil is either dark-gray or light-gray, more or less stained with blotches of orange, yellow, and red. The subsurface material is mostly clay loam, sticky when wet, and somewhat impervious to percolation.

The soil is located in depressions surrounded by steeply sloping uplands. The upper layer is covered with a fine coating of silty material at the outer edge of depressions. The soil is described as typical of potholes smaller than an acre which cannot be show on the map because of their small size. In Northeast Minneapolis, the multiple small depressions indicated on the map, but not identified as Webster, were likely viewed as this series.

This soil was described as typical of soil borders of peat bogs as a narrow fringe. The soil was described as typical of small basins with no surface outlet, typical of the till mounds of the eastern edge of the MWMO. The survey suggests that much of this map unit was farmed as it was typical of farm fields, though too small to be farmed around.

The modern NRCS description is as follows:

The Webster Series are Mollisols that consist of:

- Very deep, poorly drained, moderately permeable soils
- Soils that formed in glacial till or local alluvium derived from till on uplands.
- Webster soils are on relatively undissected till plains of Wisconsin age.
- Slope ranges from 0 to 3 percent.
- Fine-loamy, mixed, superactive, mesic Typic Endoaquolls
- Native vegetation is predominantly wet-site tall prairie grasses.

Appendix E

Rare Species Index and Blanding's Turtle Information

Environmental Review Fact Sheet Series

Endangered, Threatened, and Special Concern Species of Minnesota

Blanding's Turtle

(*Emydoidea blandingii*)

Minnesota Status:	Threatened	State Rank[1]:	S2
Federal Status:	none	Global Rank[1]:	G4

HABITAT USE

Blanding's turtles need both wetland and upland habitats to complete their life cycle. The types of wetlands used include ponds, marshes, shrub swamps, bogs, and ditches and streams with slow-moving water. In Minnesota, Blanding's turtles are primarily marsh and pond inhabitants. Calm, shallow water bodies (Type 1-3 wetlands) with mud bottoms and abundant aquatic vegetation (e.g., cattails, water lilies) are preferred, and extensive marshes bordering rivers provide excellent habitat. Small temporary wetlands (those that dry up in the late summer or fall) are frequently used in spring and summer -- these fishless pools are amphibian and invertebrate breeding habitat, which provides an important food source for Blanding's turtles. Also, the warmer water of these shallower areas probably aids in the development of eggs within the female turtle. Nesting occurs in open (grassy or brushy) sandy uplands, often some distance from water bodies. Frequently, nesting occurs in traditional nesting grounds on undeveloped land. Blanding's turtles have also been known to nest successfully on residential property (especially in low density housing situations), and to utilize disturbed areas such as farm fields, gardens, under power lines, and road shoulders (especially of dirt roads). Although Blanding's turtles may travel through woodlots during their seasonal movements, shady areas (including forests and lawns with shade trees) are not used for nesting. Wetlands with deeper water are needed in times of drought, and during the winter. Blanding's turtles overwinter in the muddy bottoms of deeper marshes and ponds, or other water bodies where they are protected from freezing.

LIFE HISTORY

Individuals emerge from overwintering and begin basking in late March or early April on warm, sunny days. The increase in body temperature which occurs during basking is necessary for egg development within the female turtle. Nesting in Minnesota typically occurs during June, and females are most active in late afternoon and at dusk. Nesting can occur as much as a mile from wetlands. The nest is dug by the female in an open sandy area and 6-15 eggs are laid. The female turtle returns to the marsh within 24 hours of laying eggs. After a development period of approximately two months, hatchlings leave the nest from mid-August through early-October. Nesting females and hatchlings are often at risk of being killed while crossing roads between wetlands and nesting areas. In addition to movements associated with nesting, all ages and both sexes move between wetlands from April through November. These movements peak in June and July and again in September and October as turtles move to and from overwintering sites. In late autumn (typically November), Blanding's turtles bury themselves in the substrate (the mud at the bottom) of deeper wetlands to overwinter.

IMPACTS / THREATS / CAUSES OF DECLINE

- loss of wetland habitat through drainage or flooding (converting wetlands into ponds or lakes)
- loss of upland habitat through development or conversion to agriculture
- human disturbance, including collection for the pet trade* and road kills during seasonal movements
- increase in predator populations (skunks, raccoons, etc.) which prey on nests and young

*It is illegal to possess this threatened species.

RECOMMENDATIONS FOR AVOIDING AND MINIMIZING IMPACTS

These recommendations apply to typical construction projects and general land use within Blanding's turtle habitat, and are provided to help local governments, developers, contractors, and homeowners minimize or avoid detrimental impacts to Blanding's turtle populations. **List 1** describes minimum measures which we recommend to prevent harm to Blanding's turtles during construction or other work within Blanding's turtle habitat. **List 2** contains recommendations which offer even greater protection for Blanding's turtles populations; this list should be used *in addition to the first list* in areas which are known to be of state-wide importance to Blanding's turtles (contact the DNR's Natural Heritage and Nongame Research Program if you wish to determine if your project or home is in one of these areas), or in any other area where greater protection for Blanding's turtles is desired.

List 1. Recommendations for all areas inhabited by Blanding's turtles.	**List 2. *Additional* recommendations for areas known to be of state-wide importance to Blanding's turtles.**
GENERAL	
A flyer with an illustration of a Blanding's turtle should be given to all contractors working in the area. Homeowners should also be informed of the presence of Blanding's turtles in the area.	Turtle crossing signs can be installed adjacent to road-crossing areas used by Blanding's turtles to increase public awareness and reduce road kills.
Turtles which are in imminent danger should be moved, by hand, out of harms way. Turtles which are not in imminent danger should be left undisturbed.	Workers in the area should be aware that Blanding's turtles nest in June, generally after 4pm, and should be advised to minimize disturbance if turtles are seen.
If a Blanding's turtle nests in your yard, do not disturb the nest.	If you would like to provide more protection for a Blanding's turtle nest on your property, see "Protecting Blanding's Turtle Nests" on page 3 of this fact sheet.
Silt fencing should be set up to keep turtles out of construction areas. It is critical that silt fencing be removed after the area has been revegetated.	Construction in potential nesting areas should be limited to the period between September 15 and June 1 (this is the time when activity of adults and hatchlings in upland areas is at a minimum).
WETLANDS	
Small, vegetated temporary wetlands (Types 2 & 3) should not be dredged, deepened, filled, or converted to storm water retention basins (these wetlands provide important habitat during spring and summer).	Shallow portions of wetlands should not be disturbed during prime basking time (mid morning to mid- afternoon in May and June). A wide buffer should be left along the shore to minimize human activity near wetlands (basking Blanding's turtles are more easily disturbed than other turtle species).
Wetlands should be protected from pollution; use of fertilizers and pesticides should be avoided, and run-off from lawns and streets should be controlled. Erosion should be prevented to keep sediment from reaching wetlands and lakes.	Wetlands should be protected from road, lawn, and other chemical run-off by a vegetated buffer strip at least 50' wide. This area should be left unmowed and in a natural condition.
ROADS	
Roads should be kept to minimum standards on widths and lanes (this reduces road kills by slowing traffic and reducing the distance turtles need to cross).	Tunnels should be considered in areas with concentrations of turtle crossings (more than 10 turtles per year per 100 meters of road), and in areas of lower density if the level of road use would make a safe crossing impossible for turtles. Contact your DNR Regional Nongame Specialist for further information on wildlife tunnels.
Roads should be ditched, not curbed or below grade. If curbs must be used, 4 inch high curbs at a 3:1 slope are preferred (Blanding's turtles have great difficulty climbing traditional curbs; curbs and below grade roads trap turtles on the road and can cause road kills).	Roads should be ditched, not curbed or below grade.

ROADS cont.	
Culverts between wetland areas, or between wetland areas and nesting areas, should be 36 inches or greater in diameter, and elliptical or flat-bottomed.	Road placement should avoid separating wetlands from adjacent upland nesting sites, or these roads should be fenced to prevent turtles from attempting to cross them (contact your DNR Nongame Specialist for details).
Wetland crossings should be bridged, or include raised roadways with culverts which are 36 in or greater in diameter and flat-bottomed or elliptical (raised roadways discourage turtles from leaving the wetland to bask on roads).	Road placement should avoid bisecting wetlands, or these roads should be fenced to prevent turtles from attempting to cross them (contact your DNR Nongame Specialist for details). This is especially important for roads with more than 2 lanes.
Culverts under roads crossing streams should be oversized (at least twice as wide as the normal width of open water) and flat-bottomed or elliptical.	Roads crossing streams should be bridged.
UTILITIES	
Utility access and maintenance roads should be kept to a minimum (this reduces road-kill potential).	
Because trenches can trap turtles, trenches should be checked for turtles prior to being backfilled and the sites should be returned to original grade.	
LANDSCAPING AND VEGETATION MANAGEMENT	
Terrain should be left with as much natural contour as possible.	As much natural landscape as possible should be preserved (installation of sod or wood chips, paving, and planting of trees within nesting habitat can make that habitat unusable to nesting Blanding's turtles).
Graded areas should be revegetated with native grasses and forbs (some non-natives form dense patches through which it is difficult for turtles to travel).	Open space should include some areas at higher elevations for nesting. These areas should be retained in native vegetation, and should be connected to wetlands by a wide corridor of native vegetation.
Vegetation management in infrequently mowed areas -- such as in ditches, along utility access roads, and under power lines -- should be done mechanically (chemicals should not be used). Work should occur fall through spring (after October 1st and before June 1st).	Ditches and utility access roads should not be mowed or managed through use of chemicals. If vegetation management is required, it should be done mechanically, as infrequently as possible, and fall through spring (mowing can kill turtles present during mowing, and makes it easier for predators to locate turtles crossing roads).

Protecting Blanding's Turtle Nests: Most predation on turtle nests occurs within 48 hours after the eggs are laid. After this time, the scent is gone from the nest and it is more difficult for predators to locate the nest. Nests more than a week old probably do not need additional protection, unless they are in a particularly vulnerable spot, such as a yard where pets may disturb the nest. Turtle nests can be protected from predators and other disturbance by covering them with a piece of wire fencing (such as chicken wire), secured to the ground with stakes or rocks. The piece of fencing should measure at least 2 ft. x 2 ft., and should be of medium sized mesh (openings should be about 2 in. x 2 in.). It is ***very important*** that the fencing be **removed before August 1st** so the young turtles can escape from the nest when they hatch!

REFERENCES

[1]Association for Biodiversity Information. "Heritage Status: Global, National, and Subnational Conservation Status Ranks." NatureServe. Version 1.3 (9 April 2001). http://www.natureserve.org/ranking.htm (15 April 2001).

Coffin, B., and L. Pfannmuller. 1988. Minnesota's Endangered Flora and Fauna. University of Minnesota Press, Minneapolis, 473 pp.

REFERENCES (cont.)

Moriarty, J. J., and M. Linck. 1994. Suggested guidelines for projects occurring in Blanding's turtle habitat. Unpublished report to the Minnesota DNR. 8 pp.

Oldfield, B., and J. J. Moriarty. 1994. Amphibians and Reptiles Native to Minnesota. University of Minnesota Press, Minneapolis, 237 pp.

Sajwaj, T. D., and J. W. Lang. 2000. Thermal ecology of Blanding's turtle in central Minnesota. Chelonian Conservation and Biology 3(4):626-636.

CAUTION

BLANDING'S TURTLES

MAY BE ENCOUNTERED IN THIS AREA

The unique and rare Blanding's turtle has been found in this area. Blanding's turtles are state-listed as Threatened and are protected under Minnesota Statute 84.095, Protection of Threatened and Endangered Species. Please be careful of turtles on roads and in construction sites. For additional information on turtles, or to report a Blanding's turtle sighting, contact the DNR Nongame Specialist nearest you: Bemidji (218-308-2641); Grand Rapids (218-327-4518); New Ulm (507-359-6033); Rochester (507-280-5070); or St. Paul (651-259-5764).

DESCRIPTION: The Blanding's turtle is a medium to large turtle (5 to 10 inches) with a black or dark blue, dome-shaped shell with muted yellow spots and bars. The bottom of the shell is hinged across the front third, enabling the turtle to pull the front edge of the lower shell firmly against the top shell to provide additional protection when threatened. The head, legs, and tail are dark brown or blue-gray with small dots of light brown or yellow. A distinctive field mark is the bright yellow chin and neck.

BLANDING'S TURTLES DO NOT MAKE GOOD PETS
IT IS ILLEGAL TO KEEP THIS THREATENED SPECIES IN CAPTIVITY

SUMMARY OF RECOMMENDATIONS FOR AVOIDING AND MINIMIZING IMPACTS TO BLANDING'S TURTLE POPULATIONS

(see Blanding's Turtle Fact Sheet for full recommendations)

- This flyer should be given to all contractors working in the area. Homeowners should also be informed of the presence of Blanding's turtles in the area.
- Turtles that are in imminent danger should be moved, by hand, out of harms way. Turtles that are not in imminent danger should be left undisturbed to continue their travel among wetlands and/or nest sites.
- If a Blanding's turtle nests in your yard, do not disturb the nest and do not allow pets near the nest.
- Silt fencing should be set up to keep turtles out of construction areas. It is critical that silt fencing be removed after the area has been revegetated.
- Small, vegetated temporary wetlands should not be dredged, deepened, or filled.
- All wetlands should be protected from pollution; use of fertilizers and pesticides should be avoided, and run-off from lawns and streets should be controlled. Erosion should be prevented to keep sediment from reaching wetlands and lakes.
- Roads should be kept to minimum standards on widths and lanes.
- Roads should be ditched, not curbed or below grade. If curbs must be used, 4" high curbs at a 3:1 slope are preferred.
- Culverts under roads crossing wetland areas, between wetland areas, or between wetland and nesting areas should be at least 36 in. diameter and flat-bottomed or elliptical.
- Culverts under roads crossing streams should be oversized (at least twice as wide as the normal width of open water) and flat-bottomed or elliptical.
- Utility access and maintenance roads should be kept to a minimum.
- Because trenches can trap turtles, trenches should be checked for turtles prior to being backfilled and the sites should be returned to original grade.
- Terrain should be left with as much natural contour as possible.
- Graded areas should be revegetated with native grasses and forbs.
- Vegetation management in infrequently mowed areas -- such as in ditches, along utility access roads, and under power lines -- should be done mechanically (chemicals should not be used). Work should occur fall through spring (after October 1st and before June 1st).

Compiled by the Minnesota Department of Natural Resources Division of Ecological Resources, Updated March 2008
Endangered Species Environmental Review Coordinator, 500 Lafayette Rd., Box 25, St. Paul, MN 55155 / 651-259-5109

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Data valid for one year

Minnesota Natural Heritage Information System: Rare Features Database
Index Report of records within 1 mile radius of:
Mississippi WMO 3rd Generation Watershed Management Plan
Multiple TRS
Hennepin and Ramsey Counties

Element Name and Occurrence Number	Federal Status	MN Status	State Rank	Global Rank	Last Observed Date	EO ID #
Anoka, Dakota, Hennepin, Ramsey, [...] County, MN						
Ligumia recta (Black Sandshell) #337 Location Description: T32N R25W S29, T28N R23W S28, T33N R26W S26, T28N R23W S20, T [...]		SPC	S3	G5	2007-09-26	30421
Anoka, Hennepin County, MN						
Truncilla donaciformis (Fawnsfoot) #4 Location Description: T30N R24W S34, T118N R21W S12, T30N R24W S27		N/A	SNR	G5	2007-08-13	34655
Anoka, Ramsey County, MN						
Sedimentary unit or sequence (late wisconsin) (Sedimentary Unit or Sequence (Late Wisconsin)) #30 Location Description: T30N R23W S31, T30N R23W S30, T30N R24W S25, T30N R24W S36		N/A	SNR	GNR	1984	5988
Blue Earth, Brown, Carver, Chippewa, [...] County, MN						
Polyodon spathula (Paddlefish) #4 Location Description: T27N R24W S23, T115N R23W S16, T115N R23W S17, T115N R38W S28, T [...]		THR	S2	G4	2004-12-04	16501
Dakota, Hennepin, Ramsey County, MN						
Elliptio dilatata (Spike) #201 Location Description: T28N R23W S23, T28N R23W S21, T29N R23W S30, T29N R24W S25, T [...]		SPC	S3	G5	2000-06-PRE	33668
Truncilla donaciformis (Fawnsfoot) #1 Location Description: T28N R23W S17, T28N R22W S6, T28N R23W S21, T28N R23W S22, T [...]		N/A	SNR	G5	2007-09-12	34325
Dakota, Hennepin, Ramsey, Scott County, MN						
Quadrula nodulata (Wartyback) #10 Location Description: T28N R22W S7, T28N R23W S28, T28N R23W S14, T27N R24W S27, T [...]		END	S1	G4	2007-09-26	17141
Hennepin County, MN						
Acipenser fulvescens (Lake Sturgeon) #204 Location Description: T28N R24W S9, T28N R24W S8, T28N R24W S16, T28N R24W S17		SPC	S3	G3G4	1998-10-20	29926
Bat Colony (Bat Concentration) #29 Location Description: T29N R24W S25		N/A	SNR	GNR	1988	9606
Bat Colony (Bat Concentration) #40 Location Description: T29N R24W S23		N/A	SNR	GNR	2000-02-20	26176

Printed March 2009
Data valid for one year

Minnesota Natural Heritage Information System: Rare Features Database
Index Report of records within 1 mile radius of:
Mississippi WMO 3rd Generation Watershed Management Plan
Multiple TRS
Hennepin and Ramsey Counties

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Hennepin County, MN						
Colonial Waterbird Nesting Area (Colonial Waterbird Nesting Site) #988 Location Description: T28N R24W S23, T28N R24W S22		N/A	SNR	GNR	1998	23723
Colonial Waterbird Nesting Area (Colonial Waterbird Nesting Site) #1037 Location Description: T118N R21W S13, T29N R24W S3, T118N R21W S12		N/A	SNR	GNR	2004-03-23	31550
Decodon verticillatus (Waterwillow) #1 Location Description: T118N R21W S9, T118N R21W S10, T118N R21W S4, T118N R21W S2, T [...]		SPC	S3	G5	1953-08-12	4428
Decodon verticillatus (Waterwillow) #2 Location Description: T118N R21W S15, T118N R21W S11, T118N R21W S10, T118N R21W S14, T [...]		SPC	S3	G5	1946-08-07	4429
Empidonax virescens (Acadian Flycatcher) #40 Location Description: T28N R24W S9		SPC	S3B	G5	1983-06-05	2946
Emydoidea blandingii (Blanding's Turtle) #100 Location Description: T28N R24W S2, T29N R24W S35		THR	S2	G4	1986-05-14	1742
Emydoidea blandingii (Blanding's Turtle) #119 Location Description: T28N R24W S23, T28N R24W S22		THR	S2	G4	1986-09-24	6823
Emydoidea blandingii (Blanding's Turtle) #423 Location Description: T28N R23W S18		THR	S2	G4	1989-09-20	10310
Emydoidea blandingii (Blanding's Turtle) #481 Location Description: T28N R24W S13, T28N R24W S12		THR	S2	G4	1989-07-01	11209
Emydoidea blandingii (Blanding's Turtle) #943 Location Description: T29N R24W S19, T29N R24W S20		THR	S2	G4	2000-09-29	27256
Erythronium propullans (Dwarf Trout Lily) #47 Location Description: T029N R24W S29	LE	END	S1	G1	2005-04-20	32311
Etheostoma microperca (Least Darter) #16 Location Description: T29N R24W S6, T29N R24W S5		SPC	S3	G5	1931-05-14	6530
Etheostoma microperca (Least Darter) #192 Location Description: T29N R24W S33		SPC	S3	G5	2006-08-21	34710
Falco peregrinus (Peregrine Falcon) #43 Location Description: T29N R24W S22	No Status	THR	S2B	G4	2006	9565

Printed March 2009
Data valid for one year

Minnesota Natural Heritage Information System: Rare Features Database
Index Report of records within 1 mile radius of:
Mississippi WMO 3rd Generation Watershed Management Plan
Multiple TRS
Hennepin and Ramsey Counties

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Hennepin County, MN						
Falco peregrinus (Peregrine Falcon) #65 Location Description: T29N R23W S30, T29N R24W S25, T29N R24W S26	No Status	THR	S2B	G4	2006	2789
Falco peregrinus (Peregrine Falcon) #67 Location Description: T29N R24W S23, T29N R24W S26	No Status	THR	S2B	G4	2006	26813
Falco peregrinus (Peregrine Falcon) #76 Location Description: T29N R24W S3	No Status	THR	S2B	G4	2007	26817
Falco peregrinus (Peregrine Falcon) #82 Location Description: T29N R24W S27	No Status	THR	S2B	G4	2006	31265
Gaura biennis (Biennial Gaura) #1 Location Description: T28N R23W S18, T28N R23W S17		NON	SNR	G5	1971-10-16	4720
Huperzia porophila (Rock Clubmoss) #3 Location Description: T28N R23W S17, T28N R23W S18		THR	S2	G4	1902-09-24	4971
Mesic Prairie (Southern) Type #5 Location Description: T28N R23W S19, T28N R23W S17, T28N R23W S20, T28N R23W S18		N/A	S2	GNR	1990-07	312
Microtus ochrogaster (Prairie Vole) #14 Location Description: T28N R23W S17, T28N R23W S18		SPC	S3	G5	1917-04	2650
Notropis anogenus (Pugnose Shiner) #45 Location Description: T28N R24W S9, T28N R24W S8, T28N R24W S16, T28N R24W S17		SPC	S3	G3	1948-05-13	6500
Notropis anogenus (Pugnose Shiner) #46 Location Description: T29N R24W S30, T29N R24W S32, T29N R24W S31, T29N R24W S29		SPC	S3	G3	1941-06-05	6499
Pipistrellus subflavus (Eastern Pipistrelle) #19 Location Description: T29N R24W S25		SPC	S3	G5	1988	9605
Pipistrellus subflavus (Eastern Pipistrelle) #28 Location Description: T29N R24W S23		SPC	S3	G5	2000-02-20	26175
Psathyrella rhodospora (A Species of Fungus) #3 Location Description: T29N R23W S32, T29N R23W S30, T29N R23W S31		END	S1	G1?	2001-06-13	31914
Rana catesbeiana (Bullfrog) #30 Location Description: T29N R24W S17		NON	S4	G5	2006-08-03	33381
Southern Wet Ash Swamp Class #38 Location Description: T28N R23W S18, T28N R23W S17		N/A	S2	GNR	1994-05-12	20938

Printed March 2009
Data valid for one year

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Index Report of records within 1 mile radius of:
Mississippi WMO 3rd Generation Watershed Management Plan
Multiple TRS
Hennepin and Ramsey Counties

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Hennepin County, MN						
Tamarack Swamp (Southern) Type #97 Location Description: T29N R24W S30, T29N R24W S29		N/A	S3	GNR	1998-01-26	22787
Valeriana edulis ssp. ciliata (Valerian) #25 Location Description: T28N R24W S5, T29N R24W S28, T29N R24W S32, T29N R24W S31, T [...]		THR	S2	G5T3	1891-05	5850
Wilsonia citrina (Hooded Warbler) #16 Location Description: T29N R24W S30, T29N R24W S20, T29N R24W S29, T29N R24W S19		SPC	S3B	G5	1979-05-10	25060
Hennepin, Ramsey County, MN						
Actinonaias ligamentina (Mucket) #6 Location Description: T28N R23W S19, T28N R23W S17, T28N R23W S16, T28N R23W S8, T [...]		THR	S2	G5	1977-08	1410
Alasmidonta marginata (Elktoe) #114 Location Description: T28N R23W S22, T28N R23W S21, T28N R23W S20, T28N R23W S17		THR	S2	G4	2001-07-19	31513
Carex formosa (Handsome Sedge) #2 Location Description: T28N R23W S8, T29N R23W S31, T28N R23W S5, T28N R23W S6, T [...]		END	S1	G4	1924-06-11	3982
Carex plantaginea (Plantain-leaved Sedge) #1 Location Description: T28N R23W S18, T28N R23W S20, T28N R23W S17		END	S1	G5	1903-05-06	4074
Cycleptus elongatus (Blue Sucker) #49 Location Description: T28N R23W S17		SPC	S3	G3G4	2003-05-16	21082
Cycleptus elongatus (Blue Sucker) #92 Location Description: T28N R23W S17, T28N R23W S20		SPC	S3	G3G4	2007-04 and 08	28393
Falco peregrinus (Peregrine Falcon) #63 Location Description: T28N R23W S17	No Status	THR	S2B	G4	2005	5720
Lampsilis higginsi (Higgins Eye) #34 Location Description: T28N R23W S8	LE	END	S1	G1	2002-05-30	33164
Ligumia recta (Black Sandshell) #19 Location Description: T28N R23W S19, T28N R23W S17, T28N R23W S16, T28N R23W S8, T [...]		SPC	S3	G5	1977-08	2526
Ligumia recta (Black Sandshell) #260 Location Description: T28N R23W S17		SPC	S3	G5	2000-08-18	28348
Native Plant Community, Undetermined Class #907 Location Description: T28N R23W S18, T28N R23W S17		N/A	SNR	GNR	1994-08-10	20940

Printed March 2009
Data valid for one year

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Mississippi WMO 3rd Generation Watershed Management Plan
Multiple TRS
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Hennepin, Ramsey County, MN						
Quadrula nodulata (Wartyback) #29 Location Description: T28N R23W S5, T29N R23W S30, T29N R24W S25, T28N R23W S8, T29N R23W S31		END	S1	G4	2001-07-17	31456
Stream erosion (holocene) (Stream Erosion (Holocene)) #4 Location Description: T28N R23W S18, T28N R23W S8, T28N R23W S7, T28N R23W S17		N/A	SNR	GNR	1972	142
Ramsey County, MN						
Carex formosa (Handsome Sedge) #1 Location Description: T28N R23W S17, T28N R23W S20		END	S1	G4	1937-06-17	3981
Cicindela lepida (Little White Tiger Beetle) #6 Location Description: T29N R23W S21, T29N R23W S16, T29N R23W S17		THR	S2	G3G4	1924-07-08	26810
Elaphe vulpina (Western Fox Snake) #17 Location Description: T28N R23W S4, T29N R23W S33, T28N R23W S3, T29N R23W S27, T [...]		NON	S4	G5	1939-10-12	8075
Liparis liliifolia (Lilia-leaved Twayblade) #1 Location Description: T29N R23W S17, T29N R23W S16, T29N R23W S20, T29N R23W S21		NON	SNR	G5	1969-06-06	4922
Nicrophorus americanus (American Burying Beetle) #6 Location Description: T29N R23W S22, T29N R23W S16, T29N R23W S21		NON	SX	G2G3	1935-07-05	11815
Nicrophorus americanus (American Burying Beetle) #7 Location Description: T29N R23W S29, T29N R23W S20, T29N R23W S21		NON	SX	G2G3	1921	11816
Psathyrella rhodospora (A Species of Fungus) #4 Location Description: T29N R23W S21		END	S1	G1?	2004-10	31930

Records Printed = 62

Appendix F

Joint and Cooperative Agreement regarding Bassett Creek Tunnels

Joint and Cooperative Agreement for Boundary Change

Bassett Creek Watershed Management Commission

Middle Mississippi River Watershed Management Organization

APPROVED BY CITY COUNCIL
OCT 2 9 1999
CITY CLERK

JOINT AND COOPERATIVE AGREEMENT FOR BOUNDARY CHANGE

This Agreement is made this 28 day of Sept, 2000, by and between the City of Minneapolis, a Minnesota municipal corporation; the Bassett Creek Watershed Management Commission, a Minnesota joint powers organization; and the Middle Mississippi River Watershed Management Organization, a Minnesota joint powers organization.

I. BACKGROUND

1.1. The Bassett Creek Watershed Management Commission is a Minnesota joint powers organization created pursuant to Minnesota Statutes, Section 471.59 and is the successor in interest to the Bassett Creek Flood Control Commission and the Bassett Creek Water Management Commission by amendments to the joint powers agreement which originally formed the Bassett Creek Flood Control Commission in 1968, as amended in 1984 and 1993.

1.2. The Bassett Creek Watershed Management Commission (which, together with its predecessor organizations, is hereinafter referred to as "Bassett Creek WMO") is a watershed management organization pursuant to Minnesota Statutes, Sections 103B.205 to 103B.255 for the Bassett Creek watershed that flows to the Mississippi River. The boundaries established by the joint powers agreement are delineated on a map of the watershed on file and of record with the Minnesota Board of Water and Soil Resources. That part of the Bassett Creek watershed lying within the City of Minneapolis is shown on Attachment One, which is attached to this agreement and hereby made a part hereof.

1.3. In the 1900s, an underground conduit was constructed to divert the surface water flowing from the Bassett Creek watershed under the highly developed area of Minneapolis to the Mississippi River. That tunnel (the "Old Tunnel") was, and continues to be, owned and operated by the City of Minneapolis.

1.4. Between 1976 and 1992, a project was undertaken to plan, design, construct and operate, among other things, a new tunnel (the "New Tunnel") under the City of Minneapolis south of and roughly parallel to the Old Tunnel. This major flood control project was a cooperative effort of the member cities of the Bassett Creek WMO, the Minnesota Department of Transportation, and the Department of the Army.

1.5. The relationships and obligations of the parties as they related to the construction of the New Tunnel were defined in the following series of agreements between and among the parties, which agreements are attached to, and hereby made a part of, this agreement:

1. Local Cooperative Agreement between Department of the Army and the City of Minneapolis, Minnesota for Flood Protection on Bassett Creek, Hennepin County, Minnesota; June 27, 1986. (Attachment Two)

2. Agreement entered into pursuant to provisions of the joint powers agreement establishing the Bassett Creek Water Management Organization relating to the construction of an improvement project in cooperation with the U.S. Corps of Army Engineers.

Minneapolis and Minnetonka	June 16, 1986 (Attachment Three)
Minneapolis and Robbinsdale	June 17, 1986 (Attachment Four)
Minneapolis and Plymouth	July 7, 1986 (Attachment Five)
Minneapolis and New Hope	June 9, 1986 (Attachment Six)
Minneapolis and Golden Valley	July 16, 1986 (Attachment Seven)
Minneapolis and Medicine Lake	June 10, 1986 (Attachment Eight)
Minneapolis and Crystal	June 17, 1986 (Attachment Nine)
Minneapolis and St. Louis Park	June 11, 1986 (Attachment Ten)

3. Agreement No. 58881 between the State of Minnesota and the City of Minneapolis, State Project No. 2781-122; December 30, 1977; 2nd Street North Tunnel. (Attachment Eleven)

4. Agreement No. 64742 between the State of Minnesota, Department of Transportation and the City of Minneapolis, State Project No. 2789-51; May 27, 1988; 3rd Avenue North Tunnel. (Attachment Twelve)

1.6. Most of the surface water draining from the Bassett Creek watershed was diverted to the New Tunnel, leaving a relatively small area of the watershed continuing to discharge through the Old Tunnel directly to the Mississippi River. The area of the Bassett Creek Watershed that continues to flow through the Old Tunnel is shown on Attachment One as the "Area Tributary to old Bassett Creek tunnel."

1.7. In periods of extreme flooding, water from the Bassett Creek watershed which cannot be accommodated by the New Tunnel will flow overland to the Old Tunnel. To accommodate the diversion of a 48-inch storm sewer from the Old Tunnel to the New Tunnel at station 140+81, an overflow must be maintained from Bassett Creek to the Old Tunnel. During a 100-year flood, 50 cubic feet per second will overflow into the Old Tunnel. With this exception and the exception of the area described in Section 1.6, the waters of the Bassett Creek watershed now flow to the Mississippi River through the New Tunnel.

1.8. A portion of the Bassett Creek watershed abuts the area under the jurisdiction of the Middle Mississippi River Watershed Management Organization (hereinafter referred to as the "Middle Mississippi River WMO"), a joint powers organization and watershed management organization created and operated pursuant to Minnesota Statutes, Section 471.59 and Sections 103B.205 to 103B.255. The Middle Mississippi River WMO manages the local drainage area adjacent to the Mississippi for nearly its entire length through the City of Minneapolis. Prior to the diversion of waters from the Bassett Creek watershed to the New Tunnel, the upstream reaches of the Bassett Creek watershed were diverted to the Old Tunnel along with Minneapolis local drainage. Therefore, it was appropriate that the entire area tributary to the Old Tunnel should be included within the Bassett Creek watershed. However, now that the waters of the upper Bassett Creek

watershed no longer flow into this tunnel along with the Minneapolis local drainage, it is more appropriate that that part of the Bassett Creek watershed that flows to the Old Tunnel be managed by the Middle Mississippi River WMO along with the other subwatersheds making up the Minneapolis local drainage area.

1.9. For this reason, and to facilitate financing of planned local public improvements in the area tributary to the Old Tunnel, the City of Minneapolis has requested that the area tributary to the Old Tunnel currently under the jurisdiction of the Bassett Creek WMO be transferred, by a boundary change, to the jurisdiction of the Middle Mississippi River WMO.

1.10. The request of Minneapolis is that the area tributary to the Old Tunnel be transferred to the Middle Mississippi River WMO. The transfer of this area would isolate a small part of the Bassett Creek watershed which is tributary to the New Tunnel and leave it surrounded by area under the jurisdiction of the Middle Mississippi River WMO. The Bassett Creek Commissioners have concluded that this isolated area, consisting of approximately 67 acres, and depicted on Attachment One as the "Area tributary to New Tunnel within Bassett Creek WMO" should also be transferred to the jurisdiction of the Middle Mississippi River WMO. Transfer of this area to the Middle Mississippi River WMO would mean that runoff to the New Tunnel would include runoff coming from land previously in the Bassett Creek watershed over which the Bassett Creek WMO would not have control. There is also currently an area within the Middle Mississippi River WMO boundaries that drains to the New Tunnel but that is not under the jurisdiction of the Bassett Creek WMO. This area, which is approximately 106 acres in size, is labeled on Attachment One as the "Area tributary to New Tunnel within MMRWMO". The parties to this agreement have determined that it is appropriate that an agreement be reached which addresses, among other things, the management of storm water within this area over which the Bassett Creek WMO will not have jurisdiction but which contributes storm water that could affect the adequacy of Bassett Creek systems to manage the volume of storm water or impair water quality for which Bassett Creek WMO could have responsibility or liability.

1.11. The drainage area contributing to the New Tunnel from I-94 and a portion of Minneapolis, west of I-94, is 375 acres. The design assumed the watershed was 42 percent impervious and the calculated peak discharge was 785 cubic feet per second (cfs). This area is tributary to the New Tunnel at the wye at Station 6200. The drainage area contributing to the New Tunnel from I-394 and portions of Minneapolis is 159 acres. The design assumed the watershed was 85 percent impervious and the calculated peak discharge was 284 cfs. This area is tributary to the New Tunnel at Station 860. Minneapolis drains 33-acre watershed with 85 percent impervious surface, and a peak discharge of 82 cfs to the New Tunnel at Station 6365. The Bassett Creek watershed flows into the New Tunnel at Station 6700 and the total tributary watershed is 39.6 square miles. Severe rainfalls on the Bassett Creek watershed cause two peaks to occur at the New Tunnel entrance, one approximately 2 to 6 hours into the storm and the second 20 to 25 hours later. The first peak, 1,030 cfs, occurs at the same time as the peak from I-394, I-94, and Minneapolis drainage areas. The sum of the peak discharges, 2,181 cfs, were used to design the New Tunnel downstream of the wye at Station 6280. The design discharge for the New Tunnel from the wye to Station 860 was 1,314 cfs and the design discharge for the New Tunnel from Station 860 to the entrance was 1,030 cfs. Any changes to the watershed areas, impervious surface area, or inlets to the New Tunnel that add to these design discharges will cause flood damage upstream of the New Tunnel entrance with the design storm.

11.12. The comments of the Minnesota Board of Water and Soil Resources on the proposed boundary change have been solicited pursuant to Minnesota Statutes, Section 103B.211, Subd. 2, received and duly considered by the parties.

1.13. All members of both the Bassett Creek WMO and Middle Mississippi River WMO have authorized the boundary change by duly approved resolutions of their city councils.

1.14. Accordingly, the parties to this agreement wish to effect the change of boundary described in this agreement and to assign duties and responsibilities relating to water

management in areas in which the parties have a common interest and to maintenance of capital facilities, and other duties and responsibilities for administrative matters relating to the change in boundary.

II. BOUNDARY CHANGE

2.1. Upon approval of the boundary change by all cities that are members of the Bassett Creek and Middle Mississippi River WMOs, and approval and execution of this agreement by both the Bassett Creek and Middle Mississippi River WMOs, the chairs of both organizations are authorized and directed to file jointly an amended map or other description of the two watersheds in which the areas labeled "Area tributary to old Bassett Creek tunnel" and "Area tributary to New Tunnel within Bassett Creek WMO", which are more particularly described on Attachment One attached hereto and hereby made a part hereof, are removed from the area under the jurisdiction of the Bassett Creek WMO and added to the area under the jurisdiction of the Middle Mississippi River WMO, whereupon the boundary change will be effective.

III. ADMINISTRATIVE EXPENSE REIMBURSEMENT

3.1. The City of Minneapolis will reimburse the Bassett Creek WMO for all expenses incurred in connection with, and as a result of, the boundary change including, but not limited to, engineering fees, legal fees, printing costs, postage, and other such expenses incurred in connection with the consideration of, planning for, and effecting the boundary change including attendance at meetings, negotiating contracts, drafting documents, communications with the Minnesota Board of Water and Soil Resources, evaluating and making necessary changes to the Bassett Creek WMO's surface water management plan, and the like.

3.2. The City of Minneapolis shall reimburse the Bassett Creek WMO for such expenses incurred within 30 days of receipt of an invoice therefor from the Bassett Creek WMO.

3.3. Bassett Creek WMO shall provide such reasonable detail of expenses incurred as may be requested by Minneapolis. Books and records of the Bassett Creek WMO relating to such invoices shall be open to inspection by representatives of the City of Minneapolis at any reasonable time.

IV. MINNEAPOLIS CONTRIBUTION TO BASSETT CREEK WATERSHED MANAGEMENT COMMISSION BUDGET AND EXPENSES

4.1. The City of Minneapolis will pay its assessment to the Bassett Creek WMO for all year 2000 assessments, costs and expenses in accordance with the joint powers agreement creating the Bassett Creek WMO in all respects as though the boundary change had not occurred. For all year 2001 assessments, costs and expenses shall be allocated in accordance with the terms of the joint powers agreement based on the amended boundary.

V. OBLIGATIONS RELATING TO OLD TUNNEL

5.1. The City of Minneapolis shall continue to own and be responsible for the Old Tunnel and shall continue to maintain and operate its storm drainage systems so as to provide, during a 100 year flood event, a capacity of fifty cubic feet per second for flood overflow of stormwaters which cannot be accommodated in the New Tunnel, as described in paragraph 1.7.

VI. OBLIGATIONS RELATING TO THE NEW TUNNEL

6.1. Regulation of public and private projects.

6.1.1. Neither Minneapolis nor the Middle Mississippi River WMO will construct public improvements or authorize private projects which will increase the area tributary

to the New Tunnel beyond the area within the adjusted Middle Mississippi River WMO boundaries shown on Attachment One as "Area tributary to New Tunnel within Bassett Creek WMO" and "Area tributary to New Tunnel within MMRWMO" without the written approval of Bassett Creek WMO.

6.1.2. Neither Minneapolis nor the Middle Mississippi River WMO will construct public improvements or authorize private projects which will add connections or outlets to the New Tunnel without the written approval of Bassett Creek WMO.

6.1.3. Neither Minneapolis nor the Middle Mississippi River WMO will construct public improvements or projects or authorize private projects which will change the rate of runoff to the New Tunnel for any property affected, in cubic feet per second, for the 10, 50 or 100 year rainfall events without the prior written approval of Bassett Creek WMO.

6.1.4. In determining whether to approve projects or activities described in Sections 6.1.1, 6.1.2, and 6.1.3, the standard which will be applied is that only projects which will not increase either the first or second peak flows to the New Tunnel will be approved.

6.1.5. The Bassett Creek WMO may authorize its engineer to approve projects or activities described in Sections 6.1.1, 6.1.2, and 6.1.3, without formal action by the Bassett Creek WMO Commission, on such terms and conditions as may be specified by the Bassett Creek WMO Commissioners from time to time.

6.2. Compliance with future water quality standards. Following the change of boundary, the New Tunnel will carry waters to the Mississippi River from areas within both the Bassett Creek and Middle Mississippi River WMO areas of jurisdiction. The parties recognize that federal, state, or regional authorities may impose storm water quality standards in the future. If this should occur, it will be desirable to have in place a means of allocating

responsibility between the two WMOs for compliance with such standards. Accordingly, the parties agree to follow the following procedure:

6.2.1. First, the Bassett Creek and Middle Mississippi River WMOs will work together to attempt to ensure that if target pollution loads, or other standards, are established, they are established at the boundaries of the WMOs so that responsibility for the quality of urban storm water runoff is determined separately for each WMO.

6.2.2. If the parties are not successful in having target pollution loads or other standards established at the boundaries of their jurisdictions, the Bassett Creek and Middle Mississippi River WMOs agree to use water quality data or water quality modeling techniques to establish responsibility for load reductions. If adequate water quality data is available for the Bassett Creek WMO and the portions of the Middle Mississippi River WMO tributary to the New Tunnel, the data will be used to represent a representative base condition for the quality of existing runoff. If the water quality loads for a base condition can be determined for both WMOs based on sampling data, the responsibility for load reductions will be determined in the same proportion as their contribution to the total load. If the water quality loads for the representative base condition can be determined for one of the WMOs based on adequate water quality data, then the responsibility for load reductions will be determined by water quality modeling. The model used to establish the "Target Pollution Loads" will be calibrated to the water quality data for the portion of the watershed that data is available for. The model will be used to calculate loads for the portion of the watershed that water quality data is not available for and for the entire watershed. Responsibility for load reductions will be determined in the same portions as the measured loads and calculated loads to the calculated total load.

VII. MISCELLANEOUS PROVISIONS

7.1. The parties will attempt in good faith to resolve any controversy or claim arising out of or relating to this agreement promptly by negotiations between representatives of the parties. If the controversy or claim is not resolved within 60 days of the first meeting of the parties' representatives, the parties agree to engage in mediation of the dispute with a mutually acceptable neutral third party before seeking a solution in court. Fees for the services of any neutral third party shall be shared equally between or among the parties involved.

CITY OF MINNEAPOLIS

By _____

Its _____

And _____

Its _____

ATTEST:

_____

Its _____

BASSETT CREEK WATERSHED
MANAGEMENT COMMISSION

By _____

Its Chairman

And _____

Its Secretary

ATTEST:

_____

Its Attorney

MIDDLE MISSISSIPPI WATERSHED
MANAGEMENT COMMISSION

By _____

Its Chair, 9-5-2000

And _____

Its VICE CHAIR, 9-5-2000

ATTEST:

Thomas W. Pearl, 9-5-2000

Its staff manager

Approved as to form

_____

Asst. City Attorney

CITY OF MINNEAPOLIS

By Sharon Sayles Belton
Mayor

Attest Steven J. Ristuben
City Clerk
Assistant

Countersigned Mary Fox-Stroman
Asst Finance Officer

Date

Approved as to form ~~and execution~~:

Corey M. Conover
Assistant City Attorney

STATE OF MINNESOTA
COUNTY OF HENNEPIN

The foregoing instrument was acknowledged before me this 21st day of August 1999, by Sharon Sayles-Belton, the Mayor of the City of Minneapolis, a municipal corporation organized and existing under the laws of Minnesota, on behalf of the corporation.

Notary Seal:

STEVEN J. RISTUBEN
NOTARY PUBLIC-MINNESOTA
HENNEPIN COUNTY
My Commission Expires Jan. 31, 2005

Steven J. Ristuben
Notary Public Signature

STATE OF MINNESOTA
COUNTY OF HENNEPIN

The foregoing instrument was acknowledged before me this 22 day of August, ~~1999~~ 2000, by Steve Ristuben, the Assistant City Clerk of the City of Minneapolis, a municipal corporation organized and existing under the laws of Minnesota, on behalf of the corporation.

Notary Seal:

MERRY KEEFE
NOTARY PUBLIC-MINNESOTA
HENNEPIN COUNTY
My Commission Expires Jan. 31, 2005

Merry Keefe
Notary Public Signature

STATE OF MINNESOTA
COUNTY OF HENNEPIN

The foregoing instrument was acknowledged before me this 29th day of September, ~~1999~~ 2000, by Mary Fox-Stroman, the Assistant Finance Officer, of the City of Minneapolis, a municipal corporation organized and existing under the laws of Minnesota, on behalf of the corporation.

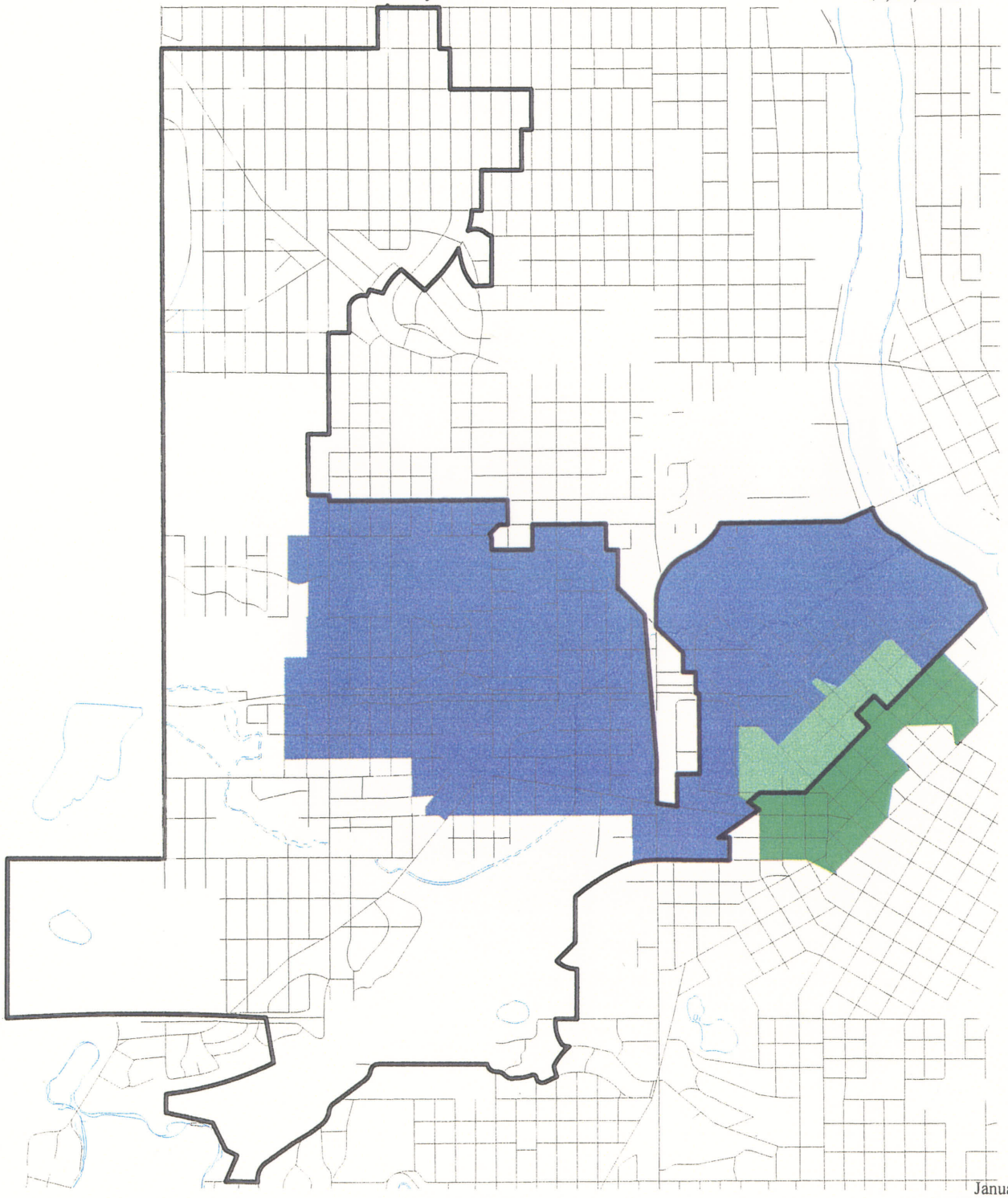
Notary Seal:

Pauline Laviolette
Notary Public Signature

PAULINE LAVIOLETTE
NOTARY PUBLIC-MINNESOTA
My Commission Expires Jan. 31, 2005

Bassett Creek WMO

	1998 pay 1999 Tax Capacity
Existing Bassett Creek Boundary	$11,128,002.00
Area tributary to Bassett Creek	$5,228,603.00
Area tributary to New Tunnel within Bassett Creek WMO	$736,370.00
Area tributary to New Tunnel within MMRWMO	$3,099,431.00
Area tributary to old Bassett Creek tunnel	$5,159,398.00



January 21, 1999

ATTACHMENT ONE

Appendix G

Public Comments and Issues Identification

2522 Marshall Street NE
Minneapolis, Minnesota 55418-3329

612-465-8780
contacts@mwmo.org

mwmo.org

Public Survey Review Summary

OVERVIEW

An internal review of public commentary via the public opinion survey was conducted by MWMO staff. Using content analysis, responses to the public survey questions were reviewed to provide MWMO Staff, Board and CAC with pertinent information in considering public interests in the new 10-year Watershed Management Plan. Results are displayed as a quantitative categorization of tagged responses to a variety of questions relative to MWMO's work in the watershed, helping to illustrate the key items of interest or concern for the public.

METHODOLOGY

Review of public input was centered around a survey that was distributed through MWMO's communication channels. The survey was created in Summer of 2019 to gauge pubic interest and concerns around a variety of topics. These are the questions that were posed:

1. *Do you live in the Watershed? (Yes/No)*
2. *Where do you go to enjoy nature and what kinds of activities do you like to do? (Open Response)*
3. *What do you perceive as being the biggest sources of pollution in streams, wetlands, lakes and/or rivers in your community? (Open Response)*
4. *What environmental changes would you like to see take place in your community, and how could the MWMO support those changes? (Open Response)*
5. *Would you be willing to share any demographic information about yourself (such as your age, race, gender, or zip code)? (Open Response)*
6. *If you want to receive the e-newsletter, enter your email address. (optional)*
7. *Have you interacted with MWMO staff in the past? (Selection of which staff/organization connections respondent has had)*

These questions allowed MWMO staff to relate responses back to specific areas of work, environmental issues and public interests, and analyze across results to infer areas of importance in planning for the future.

Data was processed and analyzed based upon the type of question posed and type of response allowed. More effort, intention and planning were required in order to process open response

type questions. Using a content analysis process for the public comments, staff coded responses in a manner that categorizes comments around question-specific tags. These coincide with relative MWMO subject matter, projects and programs to provide context for how public comments can be applied to key strategies and issues to address in the 10-year Watershed Management Plan. Tabulated results are included in this summary, along with key words found in answers that led to assigned coding and tagging of that answer.

QUESTIONS, DATA TAGGING EXAMPLES AND RESULTS

Each page below has a description of the specific question, related notes around data coding tags, and tabulated results. Each question is listed separately, with corresponding tagging information and results. Staff will use this information as needed in considering updates for the 10-year plan, as will the Citizen Advisory Committee.

QUESTION 1: DO YOU LIVE IN THE WATERSHED

Watershed Tag Notes

Tags were determined as yes/no responses.

Watershed Tag Results

Watershed	Number of Tags
Yes	289
No	146
Did Not Answer	3

QUESTION 2: WHERE DO YOU GO TO ENJOY NATURE AND WHAT KINDS OF ACTIVITIES DO YOU LIKE TO DO?

Activity Tag Notes

Tags were determined by combining like activity types and associated content or context related to that activity. Below is a set of tags and examples of content associated via key words or inferences attributed to those activities.

Activity	Tag	Content Examples
Walking	WALK	Walk, walking, stroll
Hiking	HIKE	Hike, hiking
Riding bike	BIKE	Bike, biking, bicycle, bike paths
Viewing nature	NATURE	Watching pollinators, wildlife, critters
Canoeing	CANOE	Canoe, canoeing
Fishing	FISH	Fish, fishing, fisher
Kayaking	KAYAK	Kayak, kayaking
Bird Watching	BIRD WATCH	Bird watching, birds, birding
Camping	CAMP	Camp, camping
Running	RUN	Run, running, runner, jog, jogging
Pet Walking	ANIMAL	Dog, walking dog, walk the dogs, dog park
Photography	PHOTO	Taking photos, photography, pictures, photograph
Swimming	SWIM	Swim, swimming
Winter Activities	WINTER	Cross country, skiing, snowshoe, snowshoeing
Boating	BOAT	Boat, boating, boathouse
Hunting	HUNT	Hunt, hunting, hunter
Playing Sports	SPORT	Sports, basketball, play, disc, golf, rollerblade
Hammocking	HAMMOCK	Hammock, setting up hammock
Trash or invasive species removal	TRASH	Litter, picking-up, trash, invasive species

Activity Tag Results

Activity	Number of Tags
Walking	156
Hiking	138
Riding bike	131
Viewing nature	80
Canoeing	44
Fishing	43
Kayaking	38
Bird Watching	34
Camping	28
Running	23
Pet Walking	19
Photography	18
Swimming	17
Winter Activities	15
Boating	14
Hunting	13
Playing Sports	13
Hammocking	5
Trash or invasive species removal	4

Location Tag Notes

Tags were determined by location types and associated content or context related to that location rather than specific names of locations. For instance, mentions of specific parks or trails would be tagged as a park or trail; specific names register too few tags to be significant in analysis. Below is a set of tags and examples of content associated via key words or inferences attributed to those types of locations.

Location	Tag	Content Examples
Parks	PARK	Park, parks, specific names of parks
River	RIVER	River, rivers, creek, creeks
Trail	TRAIL	Trail, trails, path, paths
Lake	LAKE	Lake, lakes
Nature Center/Preserve	CENTER	nature center, conservatory, gardens, preserves
Greenspace	GREENSPACE	Greenspace, natural areas, neighborhood steets
Woods	FOREST	Woods, wooded, wooded area, forest, forests
Pond	POND	Pond, ponds

Location Tag Results

Location	Number of Tags
Parks	228
River	161
Trail	111
Lake	108
Nature Preserve / Garden	43
Greenspace	34
Woods	12
Pond	3

QUESTION 3: WHAT DO YOU PERCIEVE AS BEING THE BIGGEST SOURCES OF POLLUTION IN STREAMS, WETLANDS, LAKES, AND/OR RIVERS IN YOUR COMMUNITY?

Pollutant or Issue Tag Notes

Tags were determined by combining like issue/pollutant types and associated content or context related to those pollutant issues. Below is a set of tags and examples of content associated via key words or inferences attributed to those issues.

Pollutant or Issue	Tag	Content Examples
Runoff	RO	Runoff, stormdrain, drains, sewers
Trash	TRSH	Trash, litter, waste, bottles, cans, debris
Excess Nutrients	EN	Fertilizer, fertilizers, grass clippings, leaves, algae
Salt/Chloride	SALT	Salt, salting, chloride, winter road maintenance
Industry	IND	Industry, industries, corporate
Chemicals	CHEM	Chemical, chemicals
Automotive	AUTO	Oil, gas, cars, bus, trucks, trucking
Pesticides	PEST	Pesticide, pesticides, herbicide, herbicides, fungicide
Pet Waste	PW	Pet waste, animal waste, poop, dog
Erosion Control	EC	Erosion, soil, soils, sediment, dirt
Development	DEV	Development, developers, high-rises, buildings near river
Bacteria/Disease	BD	Bacteria, disease, specific bacteria or diseases
Invasive Species	IS	Invasive species, invasive, specific species
Microplastics	MICRO	Microplastic, microplastics
Habitat	HAB	Pollinator, bees, habitat, prairie, woods, forest
Climate Change	CC	Climate, climate change
Northern Metals	NM	Northern Metals
Medication	MED	Pharmaceuticals, pharma, medicine, medication
Emerging Contaminants of Concern (general)	ECC	Emerging contaminants, specific emerging contaminants
Shoreham Yards	SY	Shoreham Yards
GAF	GAF	GAF

Pollutant or Issue Tag Results

Pollutant or Issue	Number of Tags
Runoff	222
Trash	133
Excess Nutrients	132
Salt/Chloride	72
Industry	59
Chemicals	57
Automotive	40
Pesticides	33
Pet Waste	28
Erosion Control	26
Development	13
Bacteria/Disease	8
Invasive Species	7
Microplastics	6
Habitat	6
Climate Change	6
Northern Metals	6
Medication	3
Emerging Contaminants of Concern (general)	3
Shoreham Yards	3
GAF	2

QUESTION 4: WHAT ENVIRONMENTAL CHANGES WOULD YOU LIKE TO SEE TAKE PLACE IN YOUR COMMUNITY, AND HOW COULD THE MWMO SUPPORT THOSE CHANGES?

Focus Area Notes and Tag Results by Group

Focus areas were determined through past 10-year plan efforts and further development of key areas of work as decided by MWMO staff. Below is a set of tags, examples of content associated via key words or inferences attributed to those activities and results by grouping of focus area.

Focus Areas	Tag	Content Examples	Number of Tags
Water Rate/Volume- Infiltration	WRV-INF	Infiltration, runoff, soaking in ground	58
Water Rate/Volume- Flooding	WRV-FL	Flood, floods, flooding	6
Water Rate/Volume- Drought	WRV-DR	Drought, droughts	0
Water Quality- Protection	WQ-P	Protect water, improve water, water quality	102
Water Quality- Upstream	WQ-UP	Upstream, further up river, specific cities and areas upstream	12
Water Quality- Groundwater	WQ-GW	Ground water	6
Water Quality- TMDL	WQ-TMDL	TMDL, TMDLs, total maximum daily load	0
Urban Stormwater Management	USM	Manage stormwater, green infrastructure, stormwater districts, permeable paver/pavement, cistern	106
Regulations/Enforcement- Improve	RE-IMP	Ban, bans, new laws, more regulation, advocate	69
Regulations/Enforcement- Consistency	RE-GEN	Enforce, enforcement, existing rules	18
Monitoring/Data			14
FSR- Financial and Strategic Responsibility	FSR	Funds, funding, strategies, specific member organizations mentioned	35
Emerging Issues (various)	EI	Climate, climate change, emerging, new pollutants, new issues	47

Emergency Response	ER	Emergency, emergencies	3
Education/Outreach- General	EO-STEW	Educate, teach, outreach, volunteers, inform, engagement	114
Education/Outreach- Connections	EO-CON	Collaboration, connections, partnerships, relationships	17
Education/Outreach- Communications	EO-COMM	Communications, emails, website, pamphlets, social media (various)	10
Ecosystem Health- Habitat	EH-HAB	Habitat, open space, natural areas, wilderness, pollinator, prairie, woods, forest, upland	102
Ecosystem Health- Water	EH-WAT	River, lakes, ponds, shoreline habitat	16

Focus Area Tag Results (by the greatest number of tags across all focus areas and statements)

Focus Areas of Work	Number of Tags
Education/Outreach- General	114
Urban Stormwater Management	106
Ecosystem Health- Habitat	102
Water Quality- Protection	102
Regulations/Enforcement- Improve	69
Water Rate/Volume- Infiltration	58
Emerging Issues (various)	47
FSR- Financial and Strategic Responsibility	35
Regulations/Enforcement- Consistency	18
Education/Outreach- Connections	17
Ecosystem Health- Water	16
Monitoring/Data	14
Water Quality- Upstream	12
Education/Outreach- Communications	10
Water Quality- Groundwater	6
Water Rate/Volume- Flooding	6
Emergency Response	3
Water Quality- TMDL	0
Water Rate/Volume- Drought	0

Issue Tag Notes

Similar to Question 3, these Issue Tags were determined as related to specific issues of interest in the responses in Question 4. There is some overlap, though there are also different issues related back to how MWMO performs its work. Reference Question 3 Issue Tag Notes for Content Examples.

Issue Tag Results

Issue (in replies to Question #4)	Number of Tags
Habitat	68
Trash	47
Runoff	34
Salt	31
Excess Nutrients	31
Chemicals	21
Pesticides	20
Access	16
Cost Share Programs	13
Climate Change	12
Pet Waste	12
Automotive	10
Transit	10
Diversity, Equity and Inclusion	7
Energy	6
Erosion Control	4
Microplastics	3

QUESTION 5: WOULD YOU BE WILLING TO SHARE ANY DEMOGRAPHIC INFORMATION ABOUT YOURSELF (SUCH AS YOUR AGE, RACE, GENDER, OR ZIP CODE)?

Demographic Tag Notes

Tags are associated with demographic information volunteered in responses.

Demographic Tag Results

Age	Number of Tags
No Reply	154
Under 20	5
20-29	39
30-39	52
40-49	50
50-59	52
60-69	58
70-79	18
80-89	5

Race/Ethnicity	Number of Tags
White	227
No Reply	184
Black	8
Native	4
Latinx	3
Asian	3
Hmong	3
Non-white (not specific)	2
Muslim	1
Indian	1
Jewish	1

Gender Identity	Number of Tags
Female	168
No Reply	155
Male	110
Other/Non-binary	1

ZIP Code (MWMO)	Number of Tags
55418	49
55413	30
55406	25
55414	16
55408	11
55421	11
55108	10
55403	9
55405	9
55412	8
55432	7
55404	4
55407	4
55416	3
55411	3
55401	2
55114	1
55415	1
55454	1

ZIP Code (Outside MWMO)	Number of Tags
55102	4
55106	4
55107	3
55113	3
55123	3
55419	3
55430	3
55443	3
55101	2
55103	2
55104	2
55112	2
55124	2
55330	2
55409	2
55410	2
55417	2
55422	2
55426	2
55428	2
55436	2
55441	2
55775	2
54751	1
55025	1
55033	1
55038	1
55044	1
55057	1
55065	1
55075	1
55082	1
55105	1
55116	1
55117	1
55118	1
55119	1
55128	1
55305	1
55319	1
55343	1
55345	1
55347	1
55364	1
55398	1
55398	1
55420	1
55423	1
55429	1
55431	1
55433	1
55442	1
55448	1
55450	1
55734	1
55901	1
55924	1
55940	1
55947	1
55987	1
56278	1
56301	1
56345	1
56442	1
56501	1
66418	1

QUESTION 6: IF YOU WANT TO RECEIVE THE E-NEWSLETTER, ENTER YOUR EMAIL ADDRESS

Email Tag Notes

No tags necessary; data set shows how many provided email addresses

Email Opt-In Results

178 respondents provided emails

QUESTION 7: HAVE YOU INTERACTED WITH MWMO STAFF IN THE PAST?

Organizational Contact Tag Notes

Tags were determined by multiple-choice options in the survey and tabulated by each selection.

Organizational Contacts Results

Contact/Connection	Number of Tags
Communications and Outreach Staff	121
Projects Staff	88
Planning Staff	63
Administrative Staff	49
Board Members	43
Citizen Advisors	41
Monitoring Staff	40
Executive Director	32

Appendix H Statuary Reviewer Comments and Responses

06/03/2021 MWMO's Staff Response to Reviewer Comments Submitted Prior to and During the 60 Day Statutory Review Period

	Agency	Date Received	Statutory Reviewer Comment	MWMO's Staff Response to Comment
1	Minneapolis Park and Recreation Board (MPRB)	9/22/2020	MWMO has helped in the past with land acquisition related to stormwater facilities in parks. Specifically along the upper river, both North and NE area. MPRB hopes this support will continue.	We agreed matching MPRB funding for land acquisition within the MRCCA and other possible locations related to stormwater is something the MWMO plans to continue.
2	Minneapolis Park and Recreation Board (MPRB)	9/22/2020	During the Master Planning process, MPRB has started to lay out their implementation priorities. Discussed continuation of partnership for potential grants. MPRB mentioned MWMO had provided letters of support in the past for state grants.	MWMO is willing to continue to provide this support.
3	Minneapolis Park and Recreation Board (MPRB)	9/22/2020	MPRB is open to additional assistance in public engagement. MPRB mentioned that MWMO identifying specific engagement tools would be helpful. Thought the Columbia project went well with a quick tutorial on stormwater management.	MWMO is willing to continue to provide this support.
4	Minneapolis Park and Recreation Board (MPRB)	9/22/2020	MPRB mentioned their board has a lot of projects within different phases of their lifecycle. Provides an opportunity for partnerships on new projects. Good to start thinking of projects throughout their whole lifecycle and how they will be maintained in the future.	MWMO agrees it is important to consider low cost maintenance during design as well as who has the skills and resources to maintain them throughout their full lifecycle
5	Minneapolis Park and Recreation Board (MPRB)	9/22/2020	MPRB would like to know of any tools that are coming up with the HH modeling and ecosystem modeling to see where opportunities or gaps are occurring.	MWMO will share any related work we do in this area with MPRB
6	Minneapolis Park and Recreation Board (MPRB)	9/22/2020	MPRB would like to continue to work with MWMO on maintenance opportunities related to the complete lifecycle of the BMP as well as additional monitoring work.	MWMO is open to more discussions on how we can partner with MPRB on monitoring and maintenance in the projects we do with them.
7	Minneapolis Park and Recreation Board (MPRB)	9/30/2020	There was no explicit reference to equity or environmental justice in the plan goals or a framework to ensure that projects increase equity and address environmental justice within the watershed. As we complete our next decade of projects and partnerships, an end product should be that the watershed is not only cleaner and greener but also more equitable and just. Explicit statements and goals around equity allow for environmental justice to be taken into consideration when prioritizing projects for planning and funding.	See new content in Sections 2,5,6,7 Noted: Following the approval of this 10yr Plan the MWMO will begin a planning process specific to equity and climate change resulting in plans or policy guidance that encompass all aspects of our organization. This planning process will invite those who would be impacted by the plans to participate in the process of developing them. The MWMO considers equity and climate change as more comprehensive issues that will permeate throughout all aspects of the MWMO's organization and the work we do. As such, additional goals or strategies on these topics may be added to Table 27 as staff and the MWMO Board develop the plans and policies needed to fully address these topics.
8	Minneapolis Park and Recreation Board (MPRB)	9/30/2020	The goal focus areas do not mention or explain how the MWMO is responding to climate change. The water quality, volume, and the ecosystem health focus areas will all be intrinsically affected by climate change, and the plan could explicitly state how the MWMO is addressing this challenge in each of these areas.	See new content in Sections 2,3,4,5,6,7 The MWMO considers equity and climate change as more comprehensive issues that will permeate throughout all aspects of our organization and the work we do. As such, additional goals or strategies on these topics may be added to Table 27 as staff and the MWMO Board develop the plans and policies needed to fully address these topics. While the MWMO does not currently have a equity or climate change plan we have been providing significant staff time and resources on direct implementation efforts that will address these issues. The MWMO has been working directly with the MPRB planning and asset management departments since 2018 to implement a restorative development feasibility study, and a capital project that will directly address issues of inequity and climate change in the City. We would like to see more departments working with us on direct implementation of equity and climate change projects. In addition, we consider the impacts of climate change with most everything that we do. From our educational messaging, to plants we recommend for projects, to sizing of stormwater practices, we are constantly addressing climate change in our work.

9	Minneapolis Park and Recreation Board (MPRB)	9/30/2020	The intent of the emerging issue focus area is unclear. Many new water quality issues have emerged in the last decade and it is unclear how or if they will be addressed by MWMO. How will the MWMO address and prioritize issues like the multitude of emerging contaminants that have been identified in the last decade and the decade to come.	It is important to acknowledge that not all contaminants are currently regulated and when possible we would like to support the determination of guidelines with monitoring and other expertise. We will meet state guidelines and regulations as they are developed.
10	Minneapolis Park and Recreation Board (MPRB)	9/30/2020	How will MWMO create relationships with previously unreached audiences for education and outreach, and how will the MWMO incorporate the values of diverse citizens of the watershed into planning and projects?	See Section 2 "Community Conversations Initiative" See Section 5 and 7 for revised focus areas, and activity areas for Communications and Outreach. Activity areas, now explicitly call out a greater focus and prioritized engagement to BIPOC communities. Through our Outreach programs MWMO continues to do education and outreach activities that engage diverse community groups. We partner with the MPRB on summer jobs for youth via the Green Team; Our Stewardship Fund Grant Program continues to provide a diversity of organizations with expertise and funding that helps communities connect with water resources in the MWMO https://www.mwmo.org/news/east-side-neighborhood-services-youth-become-water-watchers/ and much more. See Stewardship Fund at MWMO.org
11	City of Fridley	9/22/2020	City council and manager have identified parks as a priority. The City is transitioning into park specific plans and prioritization with work to be done. MWMO could start planning on how to be a part of the work together	We will continue to work with Fridley and other member cities on planning for stormwater and habitat in parks or other redevelopment. These sort of efforts utilize staff areas of expertise in Watershed Assessments, Planning and CIP programs. MWMO has also identified parks as a focus for stormwater management opportunities. Will continue to work with the City to determine park needs.
12	City of Fridley	9/22/2020	Any incentive for current commercial/industrial properties to redevelop to incorporate stormwater management?	Yes potentially, depending on the size and nature of the project MWMO would handle these areas via CIP or Stewardship Fund grants or long range planning and watershed assessments. MWMO and Fridley can start conversations early on to help facilitate these projects - have conversations with landowners and starting the education long-term when they work with the MWMO. Fridley to highlight known areas of potential development.
13	City of Fridley	9/22/2020	Fridley wants to initiate a rate reflecting and promoting best practices, a study of what are good options for us would be very helpful. Basis, credits, adjustments. Make it simple enough to apply and explain/justify. Looking for MWMO assistance.	More information is needed however, this is the type of project the MWMO would evaluate and consider assisting with via the Watershed Assessments program.
14	City of Fridley	9/22/2020	Can MWMO assist the City with a vulnerability assessment tied to recommended modeling, building elevation, impervious surface, and other requirements that will inform legislation and capital planning to minimize impacts?	More information is needed however, this is the type of project the MWMO would evaluate and consider assisting with via the Watershed Assessments program.
15	City of Fridley	9/22/2020	Can MWMO provide a regular (annual?) review of monitoring results, discussing interpretation of results. Look for opportunities to partner in monitoring and data collection. Enhancing our stormwater vocabulary, understanding what furthers our water quality mission. Perhaps this could be integrated into MS4 annual report.	Our Monitoring team will work with Fridley on these needs.
16	City of Fridley	9/22/2020	Team partnerships - Green Team expansion into Fridley, including recruitment of Fridley students/residents. A complete crew with training and supervision would best work for us. Apply these resources to assist in structured improvement and/or specific maintenance projects with City planning/direction and materials/tools.	Our outreach team will reach out to Fridley on this request.
17	City of Fridley	9/22/2020	Is there interest in providing an “outdoor classroom” for education on construction stormwater mitigation and BMP testing/implementation in Fridley? Paired with University of MN SWPPP training? Fridley is interested in a more hands-on learning approach	Our outreach team will reach out to Fridley on this request.
18	City of Fridley	9/22/2020	Is there interest in preserving specific wetlands/green spaces and if so, how do we identify? Is there a role for the MWMO?	Yes this is an interest of the MWMO. We have an existing historic waters study of Fridley that can provide some initial insight of past natural systems. The MWMO will also be developing a comprehensive habitat plan for the watershed. The work Fridley is considering could provide a good basis to start from.

19	City of Minneapolis	9/25/2020	Has MWMO developed a more in-depth study on more diverse public engagement? Citizen Advisory Committee or Stakeholder Engagement Plan? Will you be updating the goals of the pan for stakeholder engagement and getting more diverse public input?	For the plan process see: Section 2, Plan Comment and Review Opportunities. Currently the MWMO does not have a more in-depth study on more diverse public engagement. See 2.6 for Citizen Advisory Committee See Executive summary for MWMO's Community Conversations initiative We do not have a single stakeholder engagement plan. For projects the MWMO works though our member cities and developers to engage the community. For future projects, the MWMO may include minimum requirements for community engagement that project partners must achieve in order to receive expertise and funding support from the MWMO. Following the approval of this 10yr Plan the MWMO will begin a planning process specific to equity and climate change resulting in plans or policy guidance that encompass all aspects of our organization. This planning process will invite those who would be impacted by the plans to participate in the process of developing them. The MWMO considers equity and climate change as more comprehensive issues that will permeate throughout all aspects of the MWMO's organization and the work we do. As such, additional goals or strategies on these topics may be added to Table 27 as staff and the MWMO Board develop the plans and policies needed to fully address these topics.
20	City of Minneapolis	9/25/2020	The City would like to see a focus on climate change and resiliency in the plan update. These topics are a focus for Minneapolis, specifically localized flooding. Suggest MWMO consider other types of projects to fund, not just those for water quality or habitat benefits. Should consider innovative strategies for flood mitigation for project partnering.	MWMO has identified climate change in Section 4.5.1 Climate and Precipitation and has added additional content on climate change in Sections 2, 5, 6, 7 Although it currently is not a stand alone focus area, we consider the impacts of climate change with most everything that we do. From our educational messaging, to plants we recommend for projects, to sizing of stormwater practices, we are constantly addressing climate change with all of our work.
21	City of Minneapolis	9/25/2020	Consider a Technical Advisory Committee to gather input from multiple agencies and discuss focus topics.	MWMO reached out to all agencies for input on TAC process. No other reviewers voiced a similar request to pull multiple reviewers together in discussions. Others were ok with meeting individually with MWMO staff to resolve issues specific to their organizations. There was little interest in convening a large group. BWSR accepted MWMO's proposal to hold individual meetings with interested agencies prior to the 60 day release, and we are offering individual meetings with review agencies again before the 90 day release if there are still unresolved comments. If multiple entities want to meet on a specific set of topics they can let us know and we will arrange it.
22	City of Minneapolis	9/25/2020	The City values previous work with MWMO, especially outreach activities. Would like to see this continue and to build on this area.	See section 7: The MWMO will continue to work with our member cites on outreach.
23	City of Minneapolis	9/25/2020	Continue to look at strategies and ways to partner for BMP maintenance, specifically on newer types of BMPs. This is currently a challenge for Minneapolis.	MWMO has started to monitor performance of BMPs, and has kept track of maintenance work and costs for many capital projects. We are willing to continue to work with Minneapolis on maintenance related to district and regional systems. We are tracking all past CIP and grant projects, and are working with MPRB and Minneapolis on a green infrastructure youth jobs and maintenance initiatives. We will continue this work in Minneapolis and within other member communities in other parts of the watershed.
24	City of Minneapolis	9/25/2020	Groundwater topics often falls into the gaps. Where is the MWMO in the planning process to address groundwater concerns?	The MWMO references regional studies to understand how groundwater may impact a given planning initiative and related specific project site. On site groundwater investigations are completed for MWMO capital projects. The MWMO carries out desktop and field studies on groundwater and as well as references resources like the upcoming DNR's Ground Water Atlas - Part B to help us continue to determine the viability of infiltration within the watershed
25	City of Minneapolis	9/25/2020	Equity - Additional discussions should be added in the plan and equity must be a priority.	Additional content on equity has been added to sections 2,5,6,7
26	City of Minneapolis	9/25/2020	Has the MWMO been tracking demographics with current public responses/comments to the plan?	Survey requested zip code but not ethnicity
27	City of Minneapolis	9/25/2020	Discussed the idea of MWMO creating their own watershed wide public engagement plan or using the City's. Minneapolis suggested that equitable public engagement should at least be added to the MWMO goals with a data set to support it.	See Section 3.6 MWMO Capital Project Funding For projects the MWMO works though our member cities and developers to engage the community. For future projects, the MWMO may include minimum requirements for community engagement that project partners must achieve in order to receive expertise and funding support from the MWMO.

28	City of Minneapolis	9/30/2020	The MWMO should complete, or provide to stakeholders if it has been completed, a gaps-analysis to evaluate the successes and limitations of the past 10-year plan. What has worked well for the Organization, what has been less successful, what are the lessons learned, etc. Without this reflection it is difficult to understand the appropriate direction the WMO is proposing.	See Section 2 "Where We Have Been and Where we are Going" The general conclusion of BWSR's 2018 Performance Review and Assistance Program "The Mississippi WMO has a good record of accomplishment in implementation of their water management plan. The organization has demonstrated how a systematic approach to water management can be delivered. The WMO's compliance with the BWSR performance standards applicable to WMOs means they are, for the most part, meeting the essential administrative, planning and communication practices. The WMO's partners reinforce these conclusions in their strong marks for communication, quality of work, initiative, follow-through and relations with customers."
29	City of Minneapolis	9/30/2020	The goals and policies section, Section 5, describes a public and stakeholder engagement process. If this section is describing the work that was done as part of the previous plan development that should be made clear.	See Section 5: Based on the public comments received between 2019 and 2021 the existing focus statements remain relevant.
30	City of Minneapolis	9/30/2020	In Section 5 there is no update to focus areas or goals. This leaves out significant issues that have arisen in the past 10-years including climate change, resiliency, green infrastructure, equity, and maintenance. These areas are critical for an updated plan to address: - Climate Change – understanding and responding to climate change and the impacts on water resources and habitat - Resiliency – the impacts will be felt by systems, including increased flooding, heat island impacts, invasive species, and contaminants of emerging concern - Green infrastructure – capturing the rain drop where it lands. This is not a new concept but if supporting this as an initiative is a priority for the Organization it should be addressed - Equity and social justice – MWMO encompasses many areas of concentrated poverty and BIPOC communities. How were these communities engaged in the plan development process and how will these communities be served by the updated plan. Environmental justice is critical for moving everyone forward, not just	See Section 5: Based on the public comments received between 2019 and 2021 the existing focus statements remain relevant. With the caveat that rather than try to narrow the more comprehensive issues of equity and climate change into a single focus area the MWMO sees these issues permeating throughout all aspects of our organization and the work we do. As such, these topics are addressed under many of the focus areas' challenges section.
31		9/30/2020	We believe that the stakeholder engagement process has been insufficient to date... A stakeholder process with JPA cities and stakeholders like MnDOT and the MPRB should be implemented.	MWMO reached out to all agencies for input on TAC process. No other reviewers voiced a similar request to pull multiple reviewers together in discussions. Others were ok with meeting individually with MWMO staff to resolve issues specific to their organizations. There was little interest in convening a large group. BWSR accepted MWMO's proposal to hold individual meetings with interested agencies prior to the 60 day release, and we are offering individual meetings with review agencies again before the 90 day release if there are still unresolved comments. If multiple entities want to meet on a specific set of topics they can let us know and we will arrange it.
32	City of Minneapolis	12/17/2020	The MWMO's Watershed Management Plan calls for focusing more resources on an organizational equity strategy and reducing the impacts of climate change. While these are listed as important factors in the narrative of the Plan there is little evidence of that in the focus areas, goals, or implementation strategies laid our in the Plan. These are significant issues that will need to drive decision-making into the next decade and the absence is noticeable. Please provide additional details on how the WMO sees equity and climate change influencing focus areas and MWMO goals and implementation actions.	See new content in Sections 2,3,4,5,6,7 The MWMO considers equity and climate change as more comprehensive issues that will permeate throughout all aspects of our organization and the work we do. As such, additional goals or strategies on these topics may be added to Table 27 as staff and the MWMO Board develop the plans and policies needed to fully address these topics. While the MWMO does not currently have a equity or climate change plan we have been providing significant staff time and resources on direct implementation efforts that will address these issues. The MWMO has been working directly with a few Minneapolis departments since 2016 to implement a restorative development feasibility study, and a capital project that will directly address issues of inequity and climate change in the City. We would like to see more City departments work with us on direct implementation of equity and climate change projects. In addition, we consider the impacts of climate change with most everything that we do. From our educational messaging, to plants we recommend for projects, to sizing of stormwater practices, we are constantly addressing climate change in our work.
33	City of Minneapolis	12/17/2020	There is a significant amount of information in the Plan that has not been updated from the MWMO's 2011-2021 Watershed Management Plan. There are numerous inaccuracies and outdated information that should be reviewed and updated. These inaccuracies have been called out where they were recognized but there may be others that were not identified. MWMO staff should complete a full review and update of the Plan to ensure that the most accurate and up-to-date information is presented to the public and is guiding decisionmaking in the watershed. The City of Minneapolis Water Resources Management Plan was sent to the WMO on August 1, 2019 to assist with the Plan development and it can be found at: http://www2.minneapolismn.gov/publicworks/stormwater/stormwater_local-surface	Updates have been made to sections using Mpls data, including maps, water resource data, flood areas, etc.
34	City of Minneapolis	12/17/2020	The City of Minneapolis and the MPRB submitted preliminary comments on the draft plan. Please provide documentation on how those comments were received and incorporated into this draft of the Plan.	All comments received preliminary or from the 60 day review are addressed in this response to comments workbook. If anything has been missed we can address it in our meeting with Minneapolis or any of the other review agencies.

35	City of Minneapolis	12/17/2020	Please ensure that a comprehensive response to comments document is released to all stakeholders to facilitate understanding of how all of our comments have been addressed or are being met within the Plan.	Noted: all predraft and 60 comments and responses are in this document; original letters and emailed comments along with document will be in the appendix of the final plan.
36	City of Minneapolis	12/17/2020	Please clarify the sources and dates for the data incorporated into the Plan figures.	A PDF of sources used and figures updated was included with this response to comments document. This source Information will be included at the end of the plan for the 90 day release
37	City of Minneapolis	12/17/2020	2.0 Executive Summary *Comments received from the public (Appendix G) during the 10-year plan update are the basis for the focus areas and focus statements, which continue to guide the development and implementation of MWMO's goals and strategies.* - With comments and feedback from the public forming the basis for the focus areas and focus statements that guide the development and implementation of MWMO's goals and strategies how has the watershed reached out to BIPOC communities to ensure that their comments and concerns are being addressed. Please provide the WMO's public engagement plan as it relates to these audiences.	Section 2, Plan Comment and Review Opportunities. The MWMO reached as many audiences we could with the tools we have available. As stated, a survey was our primary tool for gathering information from the general public. We used a variety of outlets to try to reach as broad of an audience as possible regarding the survey and direct feedback. We utilized outreach events, and capital project meetings to talk with people about the plan; newsletter releases; website notices; govdelivery email releases; and mailings were sent out to all neighborhood organizations announcing the plan update and the survey opportunity. These efforts started in the summer of 2019 and ended in March of 2021. In addition we opened up the 60 statutory review period to the general public and a public hearing will be held at the MWMO's July Board meeting.
38	City of Minneapolis	12/17/2020	2.0 Executive Summary Public comments were gathered through an extensive watershed survey effort. - Please describe this survey effort; avenues for distribution, community partners, dialogue partners, details on outreach events such as schedule, location, and target audience.	Section 2, Plan Comment and Review Opportunities. The MWMO reached as many audiences we could with the tools we have available. As stated, a survey was our primary tool for gathering information from the general public. We used a variety of outlets to try to reach as broad of an audience as possible regarding the survey and direct feedback. We utilized outreach events, and capital project meetings to talk with people about the plan; newsletter releases; website notices; govdelivery email releases; and mailings were sent out to all neighborhood organizations announcing the plan update and the survey opportunity. These efforts started in the summer of 2019 and ended in March of 2021. In addition we opened up the 60 statutory review period to the general public and a public hearing will be held at the MWMO's July Board meeting.
39	City of Minneapolis	12/17/2020	2.0 Executive Summary *The MWMO set aside a two-seek pre-draft review period and the 60-day review period to meet with statutory reviewers on an individual basis to ensure reviewers have as much time as needed to clarify and questions or resolve any priority issues.* - Please describe how these meetings with stakeholders and statutory reviewers were used to influence the current Plan contents.	All comments received preliminary or from the 60 day review are addressed in this response to comments workbook as well as in new content added into the plan.
40	City of Minneapolis	12/17/2020	2.0 Executive Summary *The team now monitors the river bathymetry to track the impact of no dredging on river morphology.* This is fascinating information. How will this tracking be reported to the public and/or member organizations and other stakeholders like the MPCA, DNR, and Army Corps of Engineers?	Information on our monitoring program and their findings shared with the general public, private and governmental enties via our website. Udai Singh USingh@mwmo.org or one of his staff will follow up on specific requests for information and coordinate monitoring activities with other organizations. https://www.mwmo.org/monitoring-and-reports/water-quality-monitoring/mississippi-river-monitoring/
41	City of Minneapolis	12/17/2020	2.7 Focus Areas How are response to climate change, climate resiliency, and equity being addressed within these focus areas?	See Section 5: Based on the public comments received between 2019 and 2021 the existing focus statements remain relevant. With the caveat that rather than try to narrow the more comprehensive issues of equity and climate change into a single focus area the MWMO sees these issues permeating throughout all aspects of our organization and the work we do. As such, these topics are addressed under many of the focus areas' challenges section.
42	City of Minneapolis	12/17/2020	2.7 Focus Areas: Communications and Outreach Focus Area Are there specific initiatives towards increasing communication and outreach with BIPOC communities? This should be it's own goal within this Focus Area if it is a priority	See Section 5 and 7 for revised focus areas, and activity areas for Communications and Outreach. Activity areas, now explicitly call out a greater focus and prioritized engagement to BIPOC communities.
43	City of Minneapolis	12/17/2020	2.7 Focus Areas: Ecosystem Health Focus Area The effects of climate change include an increase in invasive flora and fauna. This is a significant driver in ecosystem health and is not reflected in the goals here.	Updates have been made to the section 5.5 Ecosystem Health focus area, as well as the implementation table to reflect climate change considerations including invasive flora.

44	City of Minneapolis	12/17/2020	3.0 Member Authorities and Responsibilities *The MWMO's volume control standards … and are consistent with the Minnesota Pollution Control Agency's Construction Stormwater Permit volume control requirements.* - This is not precisely accurate. The MPCA's General Construction Stormwater Permit only requires permanent stormwater management and volume control if there has been a net increase of 1 acre of impervious surface on the project. While the MWMO's standards may be the same as the GCP the triggers are not the same. Please clarify your language accordingly.	This is general language in the introduction and is appropriate for this section of the plan. The actual trigger and standard in the plan is stated very clearly. No change was made.
45	City of Minneapolis	12/17/2020	3.0 Member Authorities and Responsibilities *Although triggers vary, the MWMO is surrounded by watershed organizations that require retaining approximately the first 1 inch of runoff onsite. These currently include the Capitol Region Watershed District, the Minnehaha Creek Watershed District, the Rice Creek Watershed District, the Coon Creek Watershed District, the Shingle Creek Watershed Management Commission, and the Bassett Creek Watershed Management Commission. In addition, the MWMO's volume standard is in line with the Minnesota Pollution Control Agency's current Construction Stormwater Permit requirements of retaining 1-inch volume onsite. This is a requirement that all MS4s must meet.* - As mentioned in the previous comment, the standard may be the same but the trigger is not. And the General Construction permit doesn't just apply to MS4s it applies to all construction projects that disturb more than one acre, regardless of jurisdiction. conflating these two different NPDES permits is confusing two different permit programs within the NPDES regulatory umbrella. Precision and clarity within a regulatory document are important.	The actual trigger and standard in the plan is stated very clearly. No change was made.
46	City of Minneapolis	12/17/2020	3.0 Member Authorities and Responsibilities *3.1.2 Limiting Costs of Stormwater Treatment* - This section is very vague. Does the MWMO have a plan to implement this? Are there any concrete numbers or directions towards understanding what the limitations of cost should be on projects? Is there going to be a future study into this area? There is no direction on how this information will be used when implementing WMO rules and regulations.	To date, the MWMO has not implemented this concept, and has continued to work with landowners on what is seen as the most cost effective solution to achieve MWMO standards for a site. We also have an alternative design sequence flow chart for developers to follow. We are keeping the language as it provides direction on what we may do when other options are exhausted.
47	City of Minneapolis	12/17/2020	3.0 Member Authorities and Responsibilities *2. Rate control: Runoff rates for the proposed activity shall meet the member cities and MS4 runoff rate control requirements.* - The MS4 General Permit and the Phase I MS4 permit held by the City of Minneapolis do not have rate control requirements.	It is up to member cities and MS4s to set their runoff rate control requirements. The MWMO does not have rate control standards we expect cities to adopt and enforce. We do have a water quality/volume control standard that every city within the watershed has adopted, We anticipate that Minneapolis will be enforcing an equivalent volume standard when ordinance update goes into affect in January 2022.
48	City of Minneapolis	12/17/2020	3.0 Member Authorities and Responsibilities *The Minnesota Department of Transportation (MnDOT) must operate in compliance with the MWMO's Standards within the same timeframe as MWMO's member cities.* - As MnDOT is not a member of the MWMO and MWMO does not have formal permit authority how will the Organization's standards be enforced with those projects?	It is our understanding that MNDOT has stated the City cannot regulate them but MNDOT is subject to our Watershed Standards. The MWMO reviews MNDOT projects within the watershed to assure they are compliant with our Standards.

49	City of Minneapolis	12/17/2020	3.0 Member Authorities and Responsibilities *c. Inspection and maintenance plans (wet ponds, infiltration basins, raingardens, storm sewer systems, etc.)* - Please clarify what the Organization is seeking with this requirement. All stormwater management facilities have individual O&M plans associated with them. is the Organization looking to receive a copy of all of them or is it looking to receive a template based on the Facility type?	Member Cities need to have their records on hand and updated as needed. These topics need to be addressed in Member Cities Local Water Plans. See Table 6: Local Water Plan Content Requirements 7. Provide a summary of the member organization's Storm Water Pollution Prevention Program and conformance with the requirements of the Environmental Protection Agency's National Pollutant Discharge Elimination System (NPDES) for municipal separate storm sewer systems (MS4s) or summarize relevant plans and programs of the member organization that address: a. Inspection and maintenance plans (wet ponds, infiltration basins, raingardens, storm sewer systems, etc.) b. Street sweeping, right-of-way maintenance, road icing, salt storage, snow plowing, and snow storage programs c. Spill response and containment plans d. Identify who (e.g. private, city, state entities) is responsible for inspection, operation, and maintenance of all storm water infrastructure, public works facilities, and natural and artificial watercourses within in the MWMO's city boundaries.
50	City of Minneapolis	12/17/2020	3.0 Member Authorities and Responsibilities *e. Spill response and containment plans* - Please clarify for what facilities, properties, and activities the Organization would like spill response plans for. Is this a requirement of member cities or will cities be required to solicit this information from private properties?	See prior response
51	City of Minneapolis	12/17/2020	3.0 Member Authorities and Responsibilities *h. Describe how the city will comply with County groundwater plan requirements* - Hennepin County does not have a formally adopted Groundwater Plan. Please clarify this requirement in light of no formal document within the City.	If the County does not have an adopted plan The City should explain what actions if any, they will take related to managing groundwater
52	City of Minneapolis	12/17/2020	4.0 MWMO Resource Inventory *4.2.4 Soils* - One area where the MWMO may be able to assist the City is with soil mapping. the City has a vast inventory of data and underground mapping dating back to the original installation of city sanitary infrastructure in the early 1900s. This mapping includes detailed information on soils but it has not be digitized and applied to larger areas. There is a need to take this data and use it to create a more accurate and comprehensive understanding of underground conditions that would expand our current understanding of "urban soils."	Our Historic Waters Study from 2008 used the City's historic soil plat maps extensively in our research to detail soil data from pre-settlement conditions. This study georeferenced this information to present day locations in the watershed. Recreating a historic record of soils, vegetation, recharge and discharge areas throughout the watershed. The MWMO has been using this study to inform our planning assumptions for restoration should occur in the watershed. https://www.mwmo.org/monitoring-and-reports/watershed-assessment/historic-waters-of-the-mississippi-watershed-management-organization/
53	City of Minneapolis	12/17/2020	4.0 MWMO Resource Inventory *The Hmong community served as a pilot group for this thorough cultural analysis with respect to water resources management. The information in the report informs the design and implementation of focused stewardship campaigns about water. The MWMO and its partners may repeat and adapt this approach for other communities in the MWMO.* - The MWMO completed it's work with Hmong community over 13 years ago. Is there realistically any intention of repeating and adapting that approach for other communities in the MWMO? If so please describe how the insights gained from this cultural analysis have influenced MWMO education and outreach activities and engagement with other diverse community groups.	Yes through our Outreach programs MWMO continues to do education and outreach activities that engage diverse community groups. We partner with the MPRB on summer jobs for youth via the Green Team; Our Stewardship Fund Grant Program continues to provide a diversity of organizations with expertise and funding that helps communities connect with water resources in the MWMO https://www.mwmo.org/news/east-side-neighborhood-services-youth-become-water-watchers/ and much more. See Stewardship Fund at MWMO.org
54	City of Minneapolis	12/17/2020	4.0 MWMO Resource Inventory *4.4.5 Redevelopment Opportunities* - While the City has identified areas that are likely to redevelop and experience significant shifts in land use there is no way for the city to predict when these changes will occur and when developers and developments will be brought forward in the Planning process. Involving the MWMO "early" in the process may not be possible due to the timing of development submittal and regulatory requirements around timelines and City approvals.	We don't agree that there is nothing the City can do to get out ahead of the social, environmental, and economic issues related to the redevelopment process and advance planning that leads up to it. We would appreciate the chance to further discuss this with the City.
55	City of Minneapolis	12/17/2020	4.0 MWMO Resource Inventory *4.4.6 Surface and Groundwater Appropriations Currently there is not permitting in place for appropriations that draw less than 10,00 gallons per day or 1 million gallons per year.* - There is not permitting in place at the state level for addressing groundwater appropriations of less than 10,000 gallons per day or 1 MGY. However there are many watershed management organizations that have established this permitting. Does the MWMO have any intention of taking on this permitting role?	The MWMO is a non-regulatory/permitting entity with only a few public waters basins, all of which are surround by public land with potable water sources. As such, setting up a permit program and having the city set up a complementary enforcement program that would not be used does not seem to be an appropriate use of public funds.
56	City of Minneapolis	12/17/2020	4.0 MWMO Resource Inventory *4.4.8 Potential Environmental Hazards MS4s are defined by the Minnesota Pollution Control Agency (MPCA) as conveyance systems owned or operated by an entity such as a state, city, town, county, district, or other public body having jurisdiction over disposal of stormwater or other wastes.* - This definition is not consistent with the MPCA's definition. There is no provision for disposal of "other waste" as you have in your definition. MS4s are only regulated to discharge stormwater and authorized non-stormwater discharges, none of which are "wastes". Please update this language for clarity.	MWMO has updated plan language to reflect "and authorized non-stormwater discharges".

57	City of Minneapolis	12/17/2020	4.0 MWMO Resource Inventory *Permit Holder and Permit ID* - The correct permit number for the City of Saint Paul is MN0061263	St. Paul permit number has been updated, thank you.
58	City of Minneapolis	12/17/2020	4.0 MWMO Resource Inventory *Figure 40* - Please provide the source and date for this information presented in this figure.	We updated the data and map with most recently released information. (MPCA industrial stormwater permit sites, 2014.)
59	City of Minneapolis	12/17/2020	4.0 MWMO Resource Inventory *Impacts to Water Resource: Changes to availability of Drinking Water Supplies, Water air temperature* - Can you clarify what this means. I am unfamiliar with this term, or it is a typo.	Corrected to read "water temperature"
60	City of Minneapolis	12/17/2020	4.0 MWMO Resource Inventory *Water Boundary Movement and Displacement: Decreased Groundwater Recharge* - It is interesting that this is listed as an issue after the past few years have seen unprecedentedly high groundwater levels that are having affects on property owners and on lake levels.	No Change Made. There is much to be learned about the specific cyclical nature of groundwater recharge. Avoiding the reduction of recharge areas in a fully developed urban area is important to maintaining groundwater supplies over the long term.
61	City of Minneapolis	12/17/2020	4.0 MWMO Resource Inventory *Based on the study, the Combined Sewer Overflow (CSO) Program requires the removal of both public and private stormwater inflows to the sanitary sewer system. The Program's 2009 report of 2008 activities reports zero CSO events within the city of Minneapolis in 2007 and 2008. However, eight potential CSO discharge locations still remain. The elimination of all potential CSO discharge locations may not be feasible in every case without causing a public health or safety hazard. However, additional Program activities (including rain leader inspection and infiltration and inflow reductions) are being undertaken to reduce the volume of stormwater flows to the sanitary system. The city of Minneapolis and the Metropolitan Council continue to operate under the expired permit, which includes recording and data requirements for all CSO events as well as maintaining operation and maintenance data for CSO events and elimination efforts.* - his information needs to be updated and corrected. Please see the City's WRMP , Chapter 4 for correct information-7 CSO regulators-there have been no CSO discharges to the River since 2006 that were caused by rainfall events. -The joint Met Council/City of Mpls CSO permit was terminated in 2018.	See section 4.52 ...Revised plan language reflects the City's WRMP .
62	City of Minneapolis	12/17/2020	4.0 MWMO Resource Inventory *Metropolitan Council Surcharge Program* - Please review the information in this section. It does not appear to have been updated from the 2011-2021 MWMO Plan and is not current.	Revised and updated.
63	City of Minneapolis	12/17/2020	4.0 MWMO Resource Inventory *The City of Minneapolis Local Surface Water Management Plan identifies in its Figure 4-6 the location and status of known flood areas (City of Minneapolis, 2006). The Local Surface Water Management Plan indicates that the following projects are completed or were under construction at that time (City of Minneapolis, 2006)* - Please update this information to reflect the City's 2018 Water Resources Management Plan; the information presented in this section is out of date.	Revised and updated information to reflect the City's 2018 Water Resources Management Plan. Removed Figure 48 flood areas and updated language in this section to reflect Mpls WRMP.
64	City of Minneapolis	12/17/2020	4.0 MWMO Resource Inventory *4.5.5 Floodplain and Shoreland* - There should be some mention of the Mississippi River Critical Corridor rules and how they impact all communities that lay along the River.	See Section 4.5.5 for updated content on Shoreland Management, MRCCA and Buffer Law. As a part of our plan update, the MWMO is developing web based guidance on with the current status of our Member cities plans / ordinances for the MRCCA. The link will be inserted in the final Plan.
65	City of Minneapolis	12/17/2020	4.0 MWMO Resource Inventory *The most recent FIRM update in the Twin Cities metropolitan area was September 2, 2004* . - This is incorrect. The most recent FIRM updates in the Twin Cites were in 2016.	Updated to 2016
66	City of Minneapolis	12/17/2020	5.0 Watershed Issues, Goals, and Strategies *Ten watershed focus areas* It is surprising that Climate Resiliency is not considered significant enough to include as a focus area. Can the MWMO indicate how they will be measuring response to climate change and resiliency within their Plan goals?	See new content in Sections 2,3,4,5,6,7 The MWMO considers equity and climate change as more comprehensive issues that will permeate throughout all aspects of our organization and the work we do. As such, additional goals or strategies on these topics may be added to Table 27 as staff and the MWMO Board develop the plans and policies needed to fully address these topics. While the MWMO does not currently have a equity or climate change plan we have been providing significant staff time and resources on direct implementation efforts that will address these issues. The MWMO has been working directly with a few Minneapolis departments since 2016 to implement a restorative development feasibility study, and a capital project that will directly address issues of inequity and climate change in the City. We would like to see more City departments work with us on direct implementation of equity and climate change projects. In addition, we consider the impacts of climate change with most everything that we do. From our educational messaging, to plants we recommend for projects, to sizing of stormwater practices, we are constantly addressing climate change in our work. We use Atlas 14, we consider incorporation of climate resilient trees in our habitat restorations, like sycamore. We look to retain as much runoff on site as possible. We always try to include pretreatment devices that dissipate flow before entering BMPs, as we know rains are becoming more and more flashy.

67	City of Minneapolis	12/17/2020	5.0 Watershed Issues, Goals, and Strategies *5.4 Focus Area: Communications and Outreach* - There needs to be a more direct focus on engaging BIPOC communities in the WMO. These communities need to reflected in the decision making in the Organization. The MWMO should look at additional equity initiatives to ensure that all residents of the watershed are included in outreach messaging and invitations to decision making.	See Executive summary for MWMO's "Community Conversations initiative" We do not have a single stakeholder engagement plan. For projects the MWMO works though our member cities and developers to engage the community. For future projects, the MWMO may include minimum requirements for community engagement that project partners must achieve in order to receive expertise and funding support from the MWMO. Following the approval of this 10yr Plan the MWMO will begin a planning process specific to equity and climate change resulting in plans or policy guidance that encompass all aspects of our organization. This planning process will invite those who would be impacted by the plans to participate in the process of developing them. We are creating a specific district stormwater project engagement plan for the Upper Harbor Terminal project, where North Minneapolis and BIPOC communities can be directly engaged in informing future decisions.
68	City of Minneapolis	12/17/2020	5.0 Watershed Issues, Goals, and Strategies *5.4 Focus Area: Communications and Outreach* - The Organization should include an equity metric to determine how well they are reaching disadvantaged communities and those with diverse backgrounds. Relying on existing participants in MWMO activities will miss the opportunity to engage others that would otherwise not have a seat at the table.	Following the approval of this 10yr Plan the MWMO will begin a planning process specific to equity and climate change resulting in plans or policy guidance that encompass all aspects of our organization. This planning process will invite those who would be impacted by the plans to participate in the process of developing them. The MWMO considers equity and climate change as more comprehensive issues that will permeate throughout all aspects of our organization and the work we do. As such, additional goals or strategies on these topics may be added to Table 27 as staff and the MWMO Board develop the plans and policies needed to fully address these topics.
69	City of Minneapolis	12/17/2020	6.0 MWMO Financials *MWMO Capital Improvement Projects: Greening in the Public Right of Way* - Thank you for continuing this program. This led to the successful completion of several projects and we anticipate more projects being developed and implemented.	We intend to continue the Greening in the ROW program, and look forward to future discussions and project opportunities to further integrate green infrastructure, stormwater management, and habitat restoration within the ROW with our member communities.
70	City of Minneapolis	12/17/2020	6.0 MWMO Financials *Table 27* - Please clarify meaning of abbreviations.	See updated content Section 6.2 Layout and Content Guidance on Table 27
71	Anoka Conservation District	9/24/2019	Promoting riverbank and green infrastructure cost share programs.	
72	Anoka Conservation District	9/24/2019	Continue to find cost effective stormwater management at all scales.	
73	Anoka Conservation District	9/24/2019	Use of data to guide long-term management, including continuing to fund stormwater retrofit analyses to identify cost effective practices that could lead to implementation within Anoka County.	Providing funding for feasibility studies, riverbank restoration and green infrastructure, at all scales continues to be a central part of MWMO's Plan . The following request is addressed in the plan Sections mentioned below. See section 5.0 for annual meeting with partners to discuss upcoming CIP schedules See Section 7.1 : Watershed Assessments MWMO's work planning and funding activities are guided on an annual basis by the Plan and MWMO Board. As an example Section 6.1 MWMO's Capital Improvement Schedule has many projects that include green infrastructure. See Section 6 Focus area and statement in Table 27: Ecosystem Health (EH) EH 1 Protect, create, and enhance vegetated areas, springs, native plant communities, habitat, open space, and green infrastructure. These strategies allow for a continuum of related green infrastructure activities. See section 3.6 MWMO Capital Project Funding Natural Resource-Oriented Land Management and Ecological Restoration: The MWMO wants to support the restoration of diverse and functional natural landscapes, enhance areas of biological significance, or protect rare or endangered species. The MWMO seeks projects that are aligned with long-term planning and management efforts to create more connected landscapes, reduce habitat fragmentation, and enhance habitat complexity.
74	BWSR	9/24/2019	Prioritized Implementation Program (Capital Improvement Program). The implementation program should be clear in identifying what implementation actions the MWMO will accomplish in the next ten years regardless of whether or not they receive any new grant funding.	See Table 26: MWMO Capital Improvement Schedule 2021 to 2026 The implementation actions shown in Table 26 for the next 5 years are not depended on MWMO's receipt of grant funding. However, this implementation program is depended on the readiness of the partners identified, any feasibility studies that will proceed each project, and assurances that partners funding not related to MWMO's estimated costs is secured.

75		9/24/2019	Procedure to evaluate progress for implementation activities at a minimum of every two years.	See 7.1 MWMO Project Expertise and Services All projects undertaken and services provided have an evaluation component. Evaluations measure the impact of MWMO's efforts and are a critical part of improving its projects and activities. Evaluations clearly state objectives, measure results, and serve as a valuable tool in documenting the success of the MWMO's implementation plan. The MWMO includes results of the evaluations as part of its annual reporting and financial summary submitted to BWSR.
76		9/24/2019	Define process for evaluating implementation of local water plans.	Please see section 3.3 and 3.4 for local water plan requirements and MWMO review process.
77	BWSR	9/24/2019	Define who is responsible for inspection, operation and maintenance of stormwater facilities in the MWMO.	The MWMO is only responsible for inspection, operations and maintenance of stormwater facilities on land owned by the MWMO. On some large capital projects e.g. the Towerside District Stormwater system the MWMO may provide temporary administrative services to build and establish stormwater infrastructure. However, even in this case, the landowners are still ultimately responsible for inspections, operations and maintenance of stormwater facilities on parcels they own.
78	BWSR	9/24/2019	If the MWMO has or proposes an incentive type program it needs to be defined in the plan (the plan can also include a reference to MWMO website for more detailed information on the program).	See Section 7: Stewardship initiatives are a part of the Outreach area of staff expertise. See Section 3.6: Where the Stewardship fund grant program and the capital project grant program are defined.
79	BWSR	9/24/2019	Continue to utilize information from State studies developed for the Mississippi River – Twin Cities HUC-8 including TMDLs and WRAPS to drive implementation programs and targeting.	Yes, as noted the MWMO plans to continue to utilize State studies developed for the Mississippi River in the work we do.
80	BWSR	9/24/2019	The MWMO should include a reference to the Twin Cities Metropolitan Area Chloride TMDL and incorporate elements of the Chloride Management Plan.	See Section 4.5.2 Impaired Waters and (Table 23) of our plan for new content. We will work with our partners on opportunities to offset chlorides making it to the Mississippi River.
81	BWSR	12/17/2020	There may be an opportunity for collaboration with MDAs Emerging Farmers activities (See: https://www.mda.state.mn.us/business-dev-loans-grants/emerging-farmers) with the MWO Restorative Development initiative (Demographics section 4.4.1; Table 14 in the plan). Note the legislative report and Emerging Farmers' Work Group formed the past year to see how this may fit into the urban farming activities the MWMO is involved with.	Noted. We will review the MDAs Emerging Farmers activities and see how it could intersect with the restorative development goals as outlined in the plan.
82	BWSR	12/17/2020	The Plan identifies goals consistent with those identified in Minnesota Rule 8410.0080 within its ten focus areas. We acknowledge that these are unchanged from the current MWMO Plan and remain consistent with the needs of an urban watershed.	Correct. Staff reviewed more recent public input received, discussed internally as well as with our Board of Commissioners, and determined that the focus areas outlined in the 2011-2020 WMP are still in line with our organizations current focus areas.
83	BWSR	12/17/2020	The plan includes a five-year Capital Improvement Program (CIP). While we recognize the commitment to review of the Plan every two years and completing amendments as necessary, programming and costs are required for the ten-year Plan cycle. Without a ten-year CIP, BWSR staff will not be able to make a ten-year Plan approval recommendation.	Changes Made: See Section 6.0 Financials - Table 25: MWMO's Budget Forecasts have been updated to include 2021 - 2031 estimates. See Section 6.1 Capital Improvement Schedule: The introduction paragraph has been updated to address implementation of future CIP's.
84	BWSR	12/17/2020	The discussion of prioritization is helpful for partners and stakeholders to recognize the factors that the MWMO is basing it on (i.e. the degree to which it advances improvements in water quality, habitat, and flood reduction in the watershed).	Noted thanks
85	BWSR	12/17/2020	We appreciate the high prioritization of Creation and Implementation of Diversity, Equity and Inclusion Plan.	Following the approval of this 10yr Plan the MWMO will begin a planning process specific to equity and climate change resulting in plans or policy guidance that encompass all aspects of our organization. This planning process will invite those who would be impacted by the plans to participate in the process of developing them. The MWMO considers equity and climate change as more comprehensive issues that will permeate throughout all aspects of our organization and the work we do. As such, additional goals or strategies on these topics may be added to Table 27 as staff and the MWMO Board develop the plans and policies needed to fully address these topics.
86	BCWMC	9/24/2019	Section 2.1 of the 2016 MWMO Plan amendment incorrectly characterizes the 2000 agreement (see attached page with highlighted incorrect text). Please revise this text – see the correct text on page 100 in Section 4.5.2 of the 2016 MWMO Plan amendment (see attached page with highlighted text). During the planning process, we recommend that the MWMO coordinate with the City of Minneapolis regarding flows beyond the 50 cfs overflow that the Old Tunnel must accommodate.	Noted. Staff have updated the plan language in section 2.1 to correctly reflect the 2000 agreement between the MWMO and BCWMC.
87	BCWMC	9/24/2019	Figure 48 on page 113 of the 2016 MWMO Plan amendment (also attached) shows the Minneapolis storm tunnel system and tunnel condition ranking. The figure shows the new Bassett Creek tunnel, and that no information is available regarding its condition. The BCWMC performed an inspection of the upper reach of the new tunnel (double box culvert) in 2014 and of the lower reach of the new tunnel (deep tunnel) in 2008, in coordination with the City of Minneapolis and the U.S. Army Corps of Engineers. Inspection reports are available, if the MWMO is interested. Another tunnel inspection is to be completed as soon as it can be arranged.	noted. MWMO is updating this map, and will likely take out the tunnel ranking across the watershed. The map of major storm tunnels may still exist in the plan, but showing an up to date ranking of them will not be included.

88	BCWMC	9/24/2019	Page 140 and Table 19 of Section 6.1 of the 2016 MWMO Plan amendment (see attached highlighted pages) describe a proposed Old Bassett Creek Tunnel Water Quality and Water Conservation Improvements project. If this project carries forward into the fourth generation plan, please include language regarding coordination with BCWMC, similar to the highlighted text on page 140. Also, the BCWMC completed its watershed-wide XP-SWMM model (Phase 2 model), which is available for the City of Minneapolis to use or the MWMO to use (if requested by the City of Minneapolis) to help analyze the potential impacts of a weir in the old tunnel (e.g., will there be overflows to the new tunnel).	Funding for the OBCT has gone to cleanout of accumulated sediment only thus far, and will likely remain the same moving forward. There was some feasibility of looking into the installation of a weir to work as a temporary storage of runoff, but is no longer being explored. The language around this CIP in the plan has been updated to better represent the work MWMO is doing. We also appreciate knowing that the BCWMC has conducted an XP-SWMM model for the area, and we will utilize if it could inform future decisions.
89	BCWMC	11/18/2020	The BCWMC reviewed the plan specifically for references to Bassett Creek and the Bassett Creek tunnel. We appreciate the inclusion of information in Section 2.1 History, and Section 4.5.2 Surface Water/Water Resources regarding the old and new Bassett Creek tunnels and the requirements of the 2000 Joint and Cooperative Agreement between the MWMO and the BCWMC that apply to the tunnels. We also appreciate the MWMO's stated intent to coordinate with the BCMWC on the design of the "Old Bassett Creek Tunnel: Water quality and water conservation improvements" project and the reference to the 2000 Joint and Cooperative Agreement (from Section 6.1 Capital Improvement Schedule).	noted, thank you
90	DNR	9/24/2019	Recommends using DNR Watershed Health Assessment Framework tool to plug MWMO goals into this framework to identify gaps, prioritize actions and examine opportunities. General watershed management strategies: - Keep water where it falls by protecting and restoring wetlands, ensuring water courses are connected to their floodplains, and managing stormwater runoff with rate control and volume reduction standards - Protect and create buffers of native perennial vegetation along watercourses and water bodies - Reduce the flow of water volume and nutrients through ditches and drainage systems - Design culverts and bridges to retain floodplain functions and bank stability on natural channels and other drainage systems - Support land use planning and practices that protect, restore, and enhance priority resources - Maintain and enhance perennial vegetation including protection of working forest lands - Promote conservation practices on agricultural lands and drainage systems - Use water efficiently and implement conservation measures that further reduce water demand	Thank you for the comment. While we have yet to fully utilize the watershed health assessment framework, we have downloaded the relevant information and could use it as a tool to help inform future decisions and prioritization. Some of the layers within the tool are similar to studies we have done within our watershed in the past, where we may already have more detailed information to make informed decisions on. But, the tool could definitely be helpful, and we will keep it on hand for future planning efforts.
91	DNR	9/24/2019	DNR Recommended Action: MWMO plays an important role in urban stormwater management and DNR encourages the WMO to continue to work with its partners to: - Monitor and protect the water quality of the WMO's water resources - Implement best management practices to reduce stormwater runoff - Investigate new stormwater management techniques - Promote green infrastructure - Address storm sewer infrastructure capacity and corresponding flooding problems	noted, thank you. We will continue to work with our partners to accomplish our goals of improved water quality, quantity and habitat in our urban watershed.
92	DNR	12/10/2020	4.2.1 Potential Limitations to Infiltration (Table 7); 4.2.2 Topography and Geomorphology. It is important to note that soil structure is irreplaceable, and damaging it reduces soil function including infiltration. A soil texture in hydrologic soil group B may have an infiltration rate closer to that of hydrologic soil group D in an urban/disturbed setting where it has been filled or compacted. Decompaction techniques have only a short-term effect and cannot restore soil structure. In addition to soil texture classification, soil structure should be assessed and/or an infiltration test should be performed to verify design infiltration rates to prevent infiltration basin failure.	Noted: As stated: "...helpful from a planning level perspective, any information required for development purposes requires a site scale review..." This figure and table are for very High level (e.g. a perspective from 30,000 ft) preliminary planning in the watershed. I provides a initial glance of where limitations to infiltration may occur. The MWMO completes a site level review of soils on all projects we do.
93	DNR	12/10/2020	4.3.2 Rare Biological Features. A significant portion of the Mississippi Watershed is within the habitat zone of the federally endangered, Rusty-patched Bumble Bee. Excellent programs such as Lawns to Legumes are raising awareness and providing resources to help homeowners/businesses create pollinator habitat within urban environments. We encourage LGUs to promote the use of native landscaping where possible through wildlife-friendly permits and ordinances.	noted. We have recently completed an Ecological Systems Plan with the MPRB that identifies areas most ideal to add pollinator habitat, to help enhance corridors by adding greater patches between large existing habitat areas. We will definitely continue to work to add pollinator habitat throughout the watershed in a methodical way for the foreseeable future.
94	DNR	12/10/2020	4.5.2 Surface Water/Water Resources (Table 23). A significant number of waterbodies within the watershed are impaired due to excess levels of chloride. Chloride released into local lakes and streams does not break down, and instead accumulates in the environment, potentially reaching levels that are toxic to aquatic wildlife and plants. Consider promoting local business and city applicator participation in the Smart Salting Training offered through the Minnesota Pollution Control Agency as a strategy for addressing polluted stormwater. More information and resources can be found at this website. Many winter maintenance staff who have attended the Smart Salting training — both from cities and counties and from private companies — have used their knowledge to reduce salt use and save money for their organizations.	Noted: MWMO actively participates in smart salting workshops, marketing the program to contractors within our watershed. We also communicate the trainings to our partners in hopes of spreading the work to get as many contractors trained through the program as possible. We partner with Fortin Consulting on these trainings.

95	DNR	12/10/2020	Also, according to this recent study by the University of Minnesota, household water softeners are an important point source of chloride. Minnesota generally has groundwater with high levels of calcium and magnesium that must be removed through softening in order to improve taste and prevent lime scale buildup in appliances, pipes and water fixtures. The majority of home water softeners use sodium chloride (NaCl) in a softening process that replaces calcium and magnesium ions with sodium, while the chloride ions are discharged in the wastewater and eventually end up in the environment. Each community that uses well water needs to determine which tool is appropriate for their situation. This factsheet suggests ways for homeowners to optimize their water softener salt use, while this link provides resources for cities and examples of how other communities in Minnesota are addressing their high chloride levels.	Noted, we have updated our 4.4.8 Potential Environmental Hazards language to site this information, and we will look into future results from this topic to inform future decisions on pollutant targeting within our watershed. https://www.pca.state.mn.us/water/skinny-water-softeners https://www.pca.state.mn.us/water/chloride-salts
96	DNR	12/10/2020	Section 4.5 addresses aspects of hydrology through a majority of the methods used to analyze hydrologic change. Actionable methods exist to assess, model, regulate or minimize/mitigate impacts from these changes to hydrology. Aspects relating to groundwater are thorough/robust. Specific high value resources have great background and goals spelled out.	noted. We are actively updating our H&H and P8 models of our watershed to help inform these decisions on where we are seeing flooding occur, as well as where the largest pollutant loadings occur. We will use this data to help inform not only project prioritization, but the type of project to focus on to create the greatest positive impacts to our urban watershed.
97	DNR	12/10/2020	In Sections 4.4.6 and 4.4.9, the document identifies the Division of Waters. The correct name for the Division is now the Division of Ecological and Water Resources (EWR).	Correction made: Division of Ecological and Water Resources (EWR).
98	DNR	12/10/2020	Though one reviewer noted that the plan “Anticipated factors of, and mitigating and adapting to climate change are discussed”, another felt that the plan could do more: “the plan should emphasize climate change impacts to water management with current climate projections over the next 10 years, and support projects that proactively design for reducing these impacts.”	Noted. MWMO has updated the precipitation tables to include the most current and updated future precipitation projections. While MWMO does not have plans to update our water quality/quantity standards, we are using our H&H modeling to inform decisions around where, attempting to capture greater than the 1.1" rain event could make sense to alleviate structural impacts or downstream flooding.
99	Met Council	9/24/2019	Council staff will be looking for the plan to address the issues and problems in the watershed and include projects or actions and funding to address the issues and problems. At a minimum the watershed should address: 1. Any problems with lake and stream water quality and quantity including information on impaired waters in the watershed and the WMO’s role in addressing the impairments	See Section 4.5.2 Table 23 identifies impaired waters within the MWMO. MWMO does not own any MS4s, nor have we created any individual water resource specific management plans. We will assist our partners with priority projects they have identified to address water resource specific impairments.
100	Met Council	9/24/2019	2. Flooding issues in the watershed, including from urban flooding	Updates included in section 4.5.4 (check LWMPs: Mpls, St Anthony, Fridley, Columbia heights LWMP's add brief text update)
101	Met Council	9/24/2019	3. Stormwater rate control issues in the watershed	See section 4.5.2, 4.5.3 (check LWMPs: Mpls, St Anthony, Fridley, Columbia heights LWMP's add brief text update)
102	Met Council	9/24/2019	4. Impacts of water management on the recreation opportunities	Updates included in section 4.4.7 (check LWMPs: Mpls, St Anthony, Fridley, Columbia heights LWMP's add brief text update)
103	Met Council	9/24/2019	a. In particular for Mississippi WMO, a focus on parks. Along with the Mississippi National River and Recreation Area, there are a number of regional parks which the Council has made a substantial investment in through its park implementing powers: Above the Falls Regional Park, Anoka County Riverfront/Islands of Peace Regional Park, Central Mississippi Riverfront Regional Park, Minnehaha Regional Park, Mississippi Gorge Regional Park, and North Mississippi Regional Park	The MWMO is involved with Regional parks and Trails. We Partner with the MPRB who seeks funding from Met Council for regional parks and trails. One project we are currently working on with MPRB and Wall Companies is Towerside Phase II District Stormwater System (Malcom Yards). This is a 23-acre redevelopment project that will have a regional trail passing through the center of it. with a significant amount of additional public space added due to stormwater easements + privately owned park spaces (POPS). See Section 6.1 CIP Schedule The MWMO has invested much time and resources into regional parks throughout our watershed. This includes the Mississippi River Gorge, Riverfront Regional and Islands of Peace parks, just to name a few. We have ongoing erosion pin monitoring along the riverbanks for these parks, and intend to continue to monitor them, with a long term investment on preserving the bank stabilization and ecological function these parks provide.
104	Met Council	9/24/2019	5. Impact of soil erosion problems on water quantity and quality	See section 5.1 MWMO has been working to better understand soil erosion along the riverbanks of our watershed. In 2008 we put out a bioengineering manual to give the public a better understanding of how plants can be utilized to retain soil and stabilize the slope even while being inundated. Staff have been monitoring erosion bank pins at multiple sites along the river, and are working with some of the larger river bank land owners (MPRB, Anoka County Parks) to implement these bioengineering practices with reconstruction projects at the parks.
105	Met Council	9/24/2019	6. The general impact of land use practices on water quantity and quality	See sections 4.4.2 - 4.4.5 includes information that MWMO uses related to historic, present and future land use. Being an urban watershed, we are closely watching future land use decisions, as redevelopment leads to some of the greatest opportunities to integrate stormwater management into previously untreated water.

106	Met Council	9/24/2019	a. The watershed should pay special attention to the Mississippi River Corridor Critical Area, which extends the length of the watershed jurisdiction	See section 4.5.2 and 4.5.5 We definitely have a focus on the MRCCA. From habitat restoration prioritization, to development and ordinance review and comment, we continue to have a presence on development and habitat connectivity within the MRCCA. Over the last 10 years we have provided matching funds to park Board to purchase land within the MRCCA. Protection and restoration of habitat within the MRCCA has been a central focus for the MWMO since 2003.
107	Met Council	9/24/2019	7. Policies and strategies related to monitoring of area water resources	Section 5.3 defines our issues, goals and strategies related to monitoring, including indicators and performance measures. We also have section 7, where our Monitoring Program area outlines its program specific objectives.
108	Met Council	9/24/2019	8. Policies and strategies related to use of best management practices	Section 3 outlines our standards and typical requirements of partner BMPs. Section 5 and 7 include our focus areas and program areas related to stormwater management
109	Met Council	9/24/2019	9. Issues concerning the interaction of surface water and groundwater in the watershed	Section 4.5 explains MWMO knowledge on surface and groundwater within the watershed. Within our long range implementation table in section 6.2, we identify many goals and strategies we intend to implement related to surface and ground water interaction within the watershed. One current example is at Columbia Park, where we are monitoring the interaction between surface and groundwater, and how that influences regional stormwater management, and flood mitigation.
110	Met Council	9/24/2019	10. A list of the requirements for local surface water management plans	Section 3.2 and 3.3 identify local water plan adoption timelines and content requirements
111	Met Council	9/24/2019	11. Erosion and sediment control standards and requirements	Section 3.1 identifies MWMO standards related to water. 3.1.3 specifies MWMO erosion and sediment control standards
112	Met Council	9/24/2019	12. Volume reduction goals at least as restrictive as requirements in the NPDES construction general permit	MWMO standards expect that the first 1.1" runoff be retained onsite. Further detail can be found within section 3.1 MWMO standards.
113	Met Council	9/24/2019	13. Capital improvement plan (CIP) with itemized list of actions, estimated costs, and timeline	See section 6.1 for most up to date CIP for 2021-2026 (6.0 Financials Table 25 includes a CIP budget forecast through 2031).
114	Met Council	9/24/2019	14. Specifics on long-term maintenance of projects identified in the capital improvement plan, including identification of entities responsible for funding and conducting maintenance, as well as how long-term maintenance will be documented.	MWMO standards identify maintenance needs and requirements for projects in the watershed. Through the MWMO CIP, it is expected that landowners of MWMO projects maintain the BMPs for a minimum of 20 years, or the life expectancy of the BMP.
115	Met Council	12/15/2020	While the plan is consistent with Council policies, the connection between the ten identified focus areas and implementation actions could be improved. As noted in our response to your request for information (dated 9/19/2019) the Council is particularly interested in the plan containing a logical progression, starting with identification of issues, leading to prioritization of those issues, leading to creation of a detailed CIP that itemizes specific actions along with estimated costs and dates for completion.	See Section 2.7 which identifies the issues (10 Focus areas which are broken out into 19 issue statements). See section 4 Resource Assessment, for the watershed's characteristics of that influence the what, why, when, where, and how the issues in this Plan are addressed. See Section 5.0 Watershed Issues, Goals, and Strategies for a more in depth discussion of the ten publicly derived focus areas, that present the challenges and needs the MWMO has to address over the next 10 years. These focus areas are the underpinnings of MWMO's goals and strategies making Section 5 is a pivotal point in the plan as it informs and establishes much of the content found in Section 6. Section 6 includes: MWMO's financials, programmatic activities, MWMO's Capital Improvement Schedule (Table 26), and The MWMO's Ten-Year Implementation Schedule (Table 27) which, aligns MWMO's key strategies with lead staff work areas, and ranks the strategies as a low, medium or high priority over the next ten years.
116	Met Council	12/15/2020	Table 27 of the plan is indicated to be MWMO's Ten-Year Implementation Schedule Implementation Actions, but only includes goals and strategies related to each focus area, not actions. The capital improvement program (CIP) projects are described before the implementation schedule, in Section 6.1 and Table 26. The items in the CIP are not associated with the focus areas or goals identified in Table 27. We would recommend the implementation schedule be expanded to include specific actions related to each goal and strategy, followed by the CIP referencing the implementation schedule.	See Section 7.1 MWMO Project Expertise and Services: While the MWMO Watershed Management Plan lays out the general work flow for the organization, it does not provide the year–to-year specific planning and work detail necessary to implement the goals of the plan. In addition to the Plan, the Board periodically carries out strategic planning that must be incorporated into the annual workplan of staff. Each year, MWMO staff develops an annual workplan to present to the Board of Commissioners. The annual workplan provides a schedule and details of the projects and activities to be completed each year. The process takes place concurrently with the MWMO budget process to ensure funds are directed to the priority projects and activities. The MWMO conducts an annual prioritization and selection of projects and activities based on available funding for capital projects, planning initiatives, research and watershed studies, communication and outreach initiatives and monitoring. These projects and activities selected and implemented will advance the organization's goals and strategies while responding to changing resource conditions and financial constraints of the MWMO The order items are presented in the plan does not prevent staff's annual workplan activities or projects brought to the MWMO Board from being guided by the plan. Both staff workplan activities and Requests for Board Action and funding(resolutions based on Table 27) are based on goals and strategies found in Table 27. This nested level of planning that continues directly down to the daily activities of staff allow us to stay on track and accomplish the goals and strategies set out in the plan.

117	Met Council	12/15/2020	The plan also only includes a 5-year CIP. The plan will need to be amended sometime before the end of the first five years to examine the future capital needs of the WMO.	MWMO intends to continually review and update the CIP likely every 2-3 years. This has been past practice with the last 10 year plan.
118	Met Council	12/15/2020	Many subsections of Section 4: MWMO Resources Inventory, do not appear to have been updated since the previous plan. We recommend the WMO carefully review this entire section, especially those sections that have no information described beyond the year 2010. Section 3 of the plan allows member organizations to adopt all or part of the MWMO plan by reference; for this adoption to be effective the MWMO plan needs to be current.	MWMO is reviewing and updating this section as data becomes available. We have updated multiple sections, tables and maps since the 60 day release.
119	Met Council	12/15/2020	In particular, the Council would like to ensure the following sections are updated to reflect current information. Where noted we have included specific information from Council staff in an appendix to this letter that can be used to update the plan.	Intentionally Blank
120	Met Council	12/15/2020	Section 4.4.1: Demographics. Table 15: Population Projections for Cities within the MWMO and Table 16: Minneapolis 2006 Population by Race appear to be from the previous plan and are unnecessary with the inclusion of Table 10: Population projections for cities within the MWMO and Table 11: Race andethnicity within the MWMO	Demographics section has been updated with 2010 Census data and Met Council 2014-2018 population, as well as updated areas of concentrated poverty/ ACP50
121	Met Council	12/15/2020	Section 4.5.2: Surface Water/Water Resources, subsection on Combined Sewer Overflow. This information is outdated. Please work directly with the City of Minneapolis to update this content. Some updated information is contained in the City's 2018 Water Resources Management Plan.	See Section 4.5.2: We have updated the section with recent information from City's WRMP
122	Met Council	12/15/2020	Section 4.5.2: Surface Water/Water Resources, subsection on Metropolitan Council Surcharge Program. This information is outdated. Updated information on this section is attached in the appendix for your reference.	Section 4.5.2: Surface Water/Water Resources, subsection on Metropolitan Council Surcharge Program. We have updated the section with recent information from City's WRMP
123	Met Council	12/15/2020	Section 4.5.2: Surface Water/Water Resources, subsection on Impaired Waters and Table 23: Impaired Waters of the MWMO. Please state the reference year for the Section 303(d) list, so that any member communities adopting this plan can update the table to the current reference as appropriate.	We have stated the reference year for the Section 303(d) list, Table 23: Impaired Waters of the MWMO. This was the 2018 MPCA Impaired Waters List. So that any member communities adopting this plan can update the table to the current reference as appropriate
124	Met Council	12/15/2020	Section 4.5.4: Flood-Prone Areas. Please update the section that references flood mitigation projects in the Minneapolis Local Surface Water Management Plan to include content from the 2018 Water Resources Management Plan.	Section 4.5.4: Flood-Prone Areas. We have updated this section with references to flood mitigation projects in the Minneapolis found in the 2018 Mpls Water Resources Management Plan.
125	Met Council	12/15/2020	Section 4.5.4: Flood-Prone Areas, Figure 49. Please reference the time period for this information and update if appropriate.	Section 4.5.4: Flood-Prone Areas, Figure 49. We removed this map as it was referencing outdated information.
126	Met Council	12/15/2020	Section 4.5.5: Floodplain and Shoreland. Please update information on FEMA flood mapping. The Flood Insurance Rate Maps (FIRM) references are out of date. This may also mean that Figure 50: FEMA Designated Flood Plains in the MWMO needs to be updated.	Section 4.5.5: Floodplain and Shoreland. Updated The Flood Insurance Rate Maps (FIRM) references. Figure 50 is current. This layer is from 2020. The effective FIRM maps for Hennepin and Ramsey Counties are 2016 and 2010, respectively, so the data is a bit older but is the most recent for the area. (https://files.dnr.state.mn.us/waters/watermgmt_section/floodplain/flood-map-updates-timeline.pdf)
127	Met Council	12/15/2020	Section 4.5.7: Groundwater Resources. The information on Metropolitan Council groundwater modeling is outdated. Updated information on this section is attached in the appendix for your reference.	Section 4.5.7: Groundwater Resources. Updated information on Metropolitan Council groundwater modeling using information provided in attached appendix
128	Met Council	12/15/2020	Finally, the Council appreciates the WMO's focus on equity in its plan. Equity is a key outcome highlighted in the Council's Thrive 2040 plan. We especially appreciate that the WMO references the Council's new work on equity and rethinking areas of concentrated poverty.	noted. Section 5 and 7 have had edits to better identify within our focus areas and program areas equity explicitly aligns with our work.
129	MPCA	9/24/2019	Impairments - We have identified 11 non-mercury/non-toxic impaired water bodies that are completely or partially within the boundary of the MWMO sub-watershed boundary as of the 2018 EPA approved 303(d) impaired waters list. Five of these impaired waterbodies have an approved TMDL plan with the remaining six having targeted TMDL completion dates within the timeframe of this updated water plan. Nutrient/eutrophication biologic indicators, chloride, fecal coliform (E.coli), Total Suspended Solids (TSS) (South Metro Mississippi Turbidity TMDL) remain issues within some of the surface waters within the WMOs boundaries (See Table on Next Page)	See section 3 LWMP requirements for TMDL's See section 4 new content added Both table 23 and figure 45 use the 2018 EPA approved 303(d) impaired waters list.
130	MPCA	9/24/2019	MS4- We recommend the MWMO continue to work with member organization to achieve compliance with their MS4 permit and SWPPP as well as work with communities within their boundary to develop and adopt next-generation stormwater management strategies to minimize stormwater runoff and pollution and preserve natural resources. This could be through supporting the inclusion of low impact design (LID) standards, Minimal Impact Design Standards, and redevelopment standards into local ordinance and establishment of performance goals where appropriate. The MPCA's stormwater program maintains the Minnesota Stormwater Manual that servers as a resource for stormwater managers.	Yes we continue to work with our member cities on MS4 related activities and encourage them to go beyond permit requirements through their work with their MWMO on projects.

131	MPCA	9/24/2019	Chloride - The MPCA has identified reduction of chloride as from winter maintenance practices as an agency strategic plan. The MPCA has developed a set of studies, reports, and tools to help our partners to reduce chloride.	We have updated our 4.4.8 Potential Environmental Hazards language to site this information, and we will look into future results from this topic to inform future decisions on pollutant targeting within our watershed. https://www.pca.state.mn.us/water/skinny-water-softeners https://www.pca.state.mn.us/water/chloride-salts See Section 4.5.2 Impaired Waters and (Table 23) of our plan for new content. We will work with our partners on opportunities to offset chlorides making it to the Mississippi River. MWMO actively participates in smart salting workshops, marketing the program to contractors within our watershed. We also communicate the trainings to our partners in hopes of spreading the work to get as many contractors trained through the program as possible. We partner with Fortin Consulting on these trainings.
132	MPCA	9/24/2019	Climate Change Adaptation - The impacts of climate change may result in the increased frequency of storm events and volume of precipitation during these events. This could have a potential impact on surface water quality through increase soil erosion.	MWMO has updated the precipitation tables to include the most current and updated future precipitation projections. While MWMO does not have plans to update our water quality/quantity standards, we are using our H&H modeling to inform decisions around where, attempting to capture greater than the 1.1" rain event could make sense to alleviate structural impacts or downstream flooding.
133	MPCA	9/24/2019	In 2010, the MPCA began work in the Mississippi River – Twin Cities HUC-8 level watershed as part of the watershed approach to restoring and protecting water quality. The resulting monitoring and assessment report can be found at the following webpage. https://www.pca.state.mn.us/water/watersheds/mississippi-river-twin-cities	See update in Section: 4.5.2 Surface Water/Water Resources
134	MPCA	9/24/2019	In 2020, the MPCA will revisit the Mississippi River - Twin Cities Watershed to monitor and reassess lakes and streams and potentially develop any new or needed TMDLs and Watershed Restoration and Protection Strategy (WRAPS) Reports.	See update in Section: 4.5.2 Surface Water/Water Resources
135	RCWD	9/24/2019	The RCWD has great continued interest in pursuing a regional capital project at Village Green Apartments (460 Mississippi Street NE) in Fridley. The parcel is currently located within MWMO's political boundary, but is within the RCWD hydrologic boundary and contains a failed and filled-in regional stormwater basin that collects runoff from roughly 80 acres of urban land within the RCWD and conveys it to Lower Rice Creek and the Mississippi River. Various capital project iterations have been proposed here over the years to retrofit/reconstruct this basin for increased water quality treatment and local flood control. During a previous meeting with the City of Fridley, MWMO staff had indicated that the agency was not interested in participating in a project at this location. RCWD encourages the MWMO to again consider partnering with the RCWD, City and local landowner to make the project a reality.	With the new boundary change underway this project will be completely outside of the MWMO. The MWMO does not do capital projects outside the watershed unless there is a benefit within the watershed. However, we are willing to discuss the project further about work in MWMO that may have a positive impact to Village Green if we are contributing water to the site. Planning a CIP staff are open to discussing this project father. See section 5.0 for new Content added: "On an annual basis the MWMO will invite partners a on this list to meet and review with them our current capital improvement schedule. Allowing them the opportunities to partner with us on existing projects or suggest new projects."
136	RCWD	9/24/2019	The RCWD values its collaborative efforts and relationships with MWMO. We encourage the MWMO to continue these efforts and maintain partnerships and membership in the Anoka County Water Resource Outreach Collaborative, Metro Watershed Partners, Metro Children's Water Festival, Blue Thumb, and other regional collaborative activities.	We intend to continue to look for opportunities to collaborate with RCWD through partnerships and memberships
137	RCWD	9/24/2019	Based on available LiDAR topography, the RCWD intends to undertake a boundary revision process along the RCWD/MWMO border during our 2020-2029 WMP cycle. There are several areas where the political boundary between our agencies does not line up well with the hydrologic boundary. The RCWD looks forward to addressing this with the MWMO in the coming years. Current RCWD hydrologic mapping is available upon request.	We are supportive of this boundary revision process along the RCWD/MWMO border.
138	RCWD	11/5/2020	The Rice Creek Watershed District has one comment on MWMO's 10-year plan update, although it does not necessarily require any adjustments to the language of the plan: Section 7.3 (Administration of Legal Boundary): MWMO should be aware that the Rice Creek WD intends to undertake a thorough and sequential examination of the accuracy of its legal boundary in the coming decade. We are aware of locations where RCWD's original jurisdictional boundary - set in 1972 - does not match the current hydrological boundary. It is possible that recommendations for adjustment will be made along the MWMO-RCWD boundary in the coming years. If this occurs, RCWD will coordinate with MWMO to obtain concurrence on any boundary adjustments that may be proposed.	Your comment has been noted and we will continue to work with Rice Creek Watershed District as boundary changes are completed.
139	St. Anthony	9/24/2019	Included Existing and Future (2040) Land use plans for the city only	Updated St Anthony's Existing and Future (2040) Land use plans in the plan
140	St. Paul	9/24/2019	Regional (or District) systems. The city has expended considerable time and resources towards defining regional solutions for key redevelopment areas. This remains a priority issue for the city with the Towerside Innovation District as the key focus area. A high-level planning study across the Innovation District to reaffirm existing priority sites and identify second tier relevant sites would be an excellent short-term task.	We look forward to working more with St Paul Planning staff on District systems planning, design and implementation. With the help of St Paul Planning staff and neighborhoods, the MWMO and CRWD completed A Blue/Green Framework for the Creative Enterprise Zone (CEZ) and Towerside Innovation District (TID). This framework is now being used by the TID and CEZ in collaboration with city staff to guide and assist redevelopment in these areas to reuse stormwater for improving habitat, and creating more acres of privately owned public spaces.

141	St. Paul	9/24/2019	Water quality capacity. The city continues to evolve towards a green infrastructure program that not only provides compliance with MWMO plan water quality standards but would consider water quality and volume control on sites less than 1-acre. MWMO involvement may be sought to help guide the city in developing a water quality review program, identify resources or demands necessary, or otherwise partner to aid the city until internal capacity is established.	The MWMO planning staff are interested in learning more about standards for water quality and volume control on sites less than 1-acre.
142	St. Paul	9/24/2019	Natural resource management. The city strives to manage wetlands strategically. These efforts go above and beyond the city's role implementing the Wetland Conservation Act. The city intends to update its 2008 wetland management plan and would involve MWMO and other agencies accordingly. The city remains in discussion about potential permanent conservation initiatives and continues to evaluate how this could be carried out institutionally and/or in concert with watershed organization partners. Policies that reflect MWMO's position and desired role on these efforts would be very useful in the watershed plan amendment.	The MWMO planning staff interested in being apart of the City's update to its wetland management plan. A better understanding of what St Paul is considering regarding permanent conservation initiatives would be need prior adding policies or positions in the plan. Currently the MWMO does not hold or manage any conservation easements. If the is a need for a new policy to be added to the Plan the MWMO can do this via an amendment process. Typically we amend the plan every 2 years to keep up with change in the watershed.
143	St. Paul	9/24/2019	Other Priorities: Water reuse is a shared focus area with Saint Paul. This can be a key strategy for redevelopment or retrofit sites.	Reuse is a common goal on MWMO projects as well. Stormwater is a valuable resource that is essential for realizing many climate and equity relate needs in our communities.
144	St. Paul	9/24/2019	Climate resilience and flood resilience is a shared focus area with Saint Paul. The City of Saint Paul, in partnership with the Great Plains Institute, has developed a Climate Action & Resilience Draft Plan. The draft plan focuses on achieving carbon neutrality in city operations by 2030, and citywide by 2050. This work includes compiling data on energy use, transportation emissions, solid waste, and water treatment and distribution. A part of that Plan discusses flood threats and resilience, both regionally (river-related) and localized.	We will look for ways to incorporate St Paul's Climate resilience and flood resilience planning into the restorative development work we are doing.
145	St. Paul	12/15/2020	Section 3.1.3.1.c Stormwater Management Standards MWMO statement: In order to reduce regulatory complexity, a member may request the MWMO to allow stormwater rules set forth by adjacent watershed management organizations to govern development so long as they can be shown to be substantially equal to or greater than the level of protection afforded by the MWMO Standards. Saint Paul response: The City of Saint Paul has developed draft design standards that closely mimic those of Capitol Region Watershed District. It is our belief that these design standards, once adopted, will meet or exceed requirements of the MWMO.	MWMO's approval of the Cities LWMP was based on an agreement that the city's design standards, once adopted, will meet or exceed requirements of the MWMO. Please send a final copy of the City's approved Design standards or an opportunity to review if any changes were made.
146	St. Paul	12/15/2020	Section 3.1.3.2 Rate Control MWMO statement: Runoff rates for the proposed activity shall meet the member cities and MS4s runoff rate control requirements, using the member cities' and MS4s' required critical storm events (as defined by Atlas 14 Volume 8 and/or subsequent revisions). Runoff rates for the proposed activity and predevelopment shall be determined using an Atlas 14-based (nested, regional, state) rainfall distribution using NRCS-approved methodology. Saint Paul response: The City of Saint Paul has developed draft design standards that incorporate Atlas-14 rainfall depths, but currently regulate private development utilizing TP-40 rainfall depths. It is our belief that these design standards, once adopted, will meet or exceed requirements of the MWMO.	Please send a final copy of the City's approved Design standards or an opportunity to review if any changes were made.
147	St. Paul	12/15/2020	Section 4.4.8 Potential Environmental Hazards MWMO refers to Saint Paul's Phase I NPDES Permit Number as: MS400054, Saint Paul response: The City of Saint Paul's Phase I NPDES Permit Number is MN0061263	This update has been made. Thanks
148	St. Paul	12/15/2020	Section 4.5.2 Surface Water/Water Resources MWMO statement: A source water assessment area is typically mapped to show the land area over which protection measures should be taken to protect the water supply from contamination. A source water protection plan has been developed by the cities of St. Cloud, Minneapolis, and St. Paul, along with other local units of government through the Upper Mississippi River Source Water Protection Project. Saint Paul response: Believe reference should be made to Saint Paul Regional Water Services (as a regional entity), not the City of Saint Paul.	Section 4.5.2 Surface Water/Water Resources: Change has been made to: "Saint Paul Regional Water Services"
149	St. Paul	12/15/2020	Section 4.5.3 Stormwater System MWMO statement: The major Saint Paul storm system within the MWMO is the Eustis Tunnel in the Bridal Veil Creek region. The Saint Paul storm sewer network is available from the City in computer-aided design and drafting (CADD) format. Saint Paul response: Please refine the language to: The major Saint Paul storm system within the MWMO is the Eustis Branch, of the Saint Anthony Park Storm Tunnel, in the Bridal Veil Creek region. The Saint Paul storm sewer network is available from the City in GIS format.	Section 4.5.3 Stormwater System: text changed to: The major Saint Paul storm system within the MWMO is the Eustis Branch, of the Saint Anthony Park Storm Tunnel, in the Bridal Veil Creek region. The Saint Paul storm sewer network is available from the City in GIS format.

150	St. Paul	12/15/2020	Section 4.5.6 Surface Water and Water Quality & Quantity Modeling Saint Paul inclusion: In 2019-2020 Saint Paul worked with a consultant to generate a detailed Hydrologic & Hydraulic model of the Saint Anthony Park subwatershed, including areas within Saint Paul, Lauderdale, Falcon Heights, State Fair property, and University of Minnesota property. Also created was a P8 model for water quality assessments and prioritization of capital projects.	noted, section 4.5.6 has been updated to include most up to date modeling initiatives watershed wide.
151	Friends of the Mississippi River	11/9/2020	Page numbers on the text itself would be very helpful for clarifying the location of public comments and making the document easier to reference (rather than on the pdf scroller).	We will finalize formatting pages and links etc...with 90 day and final distribution, for now please use the Find function, key words and section references.
152	Friends of the Mississippi River	11/9/2020	The bibliography has multiple references out of order, including putting Minnesota Geological Survey before Minneapolis Park and Recreation Board. Some of the references in the text (e.g. MPRB, 2016a) are hard to locate in the bibliography and make locating the reference source difficult. Even if the reference itself is a link to another document, it should have supporting information in the bibliography, including the year and the corresponding letter “a” “b” etc.	We will finalize formatting pages and links etc...with 90 day and final distribution
153	Friends of the Mississippi River	11/9/2020	The term “exotic” is an outdated term when describing place of origin in relation to invasive species. “Non-native invasive species” is a more common and widely accepted term in the field of invasion biology.	Noted
154	Friends of the Mississippi River	11/9/2020	Some of the figure legends are difficult to differentiate. For example, in Figure 13, NRCS based vegetation, the Hennepin County portion of the legend has separate orange colors for “savanna” and “prairie or savanna” vegetation. Besides those categories seeming slightly redundant, the oranges are indistinguishable on the map. Changing the color legend would help with the maps interpretability.	Noted
155	Friends of the Mississippi River	11/9/2020	The rare features appendix (Appendix F) and associated tables (Table 9) uses data from 2009. This should be updated with more recent data. The call out boxes in the appendix even say “Printed March 2009. Data valid for one year.”	We submitted a request to DNR for the data on Monday, September 14, 2020 we have yet to receive the data. We will update the table prior to the 90 Day release or final posting depending on the speed of which we can receive the information.
156	Friends of the Mississippi River	11/9/2020	There seems to be no explanation of the prioritization and timing of the MWMO’s Capital Improvements Schedule. A better connection between Table 27: MWMO’s Ten Year Implementation Schedule Implementation Actions, which lists priority levels for goals and strategies such as habitat restoration projects, and the Capital Improvements Schedule, which allots funding and proposes timing for projects, would help partners and the public better understand how these allotments and timing decisions were decided upon.	See Section:3.6 MWMO Capital Project Funding See Section 4.4.5 Redevelopment Opportunities See Section: 5.0 The MWMO prioritizes projects based on their ability to meet our mission to improve water quality, habitat, and rate control. This is taken within the context of: available funding for capital projects; timing of planning initiatives; as well as information derived from research and watershed studies, outreach initiatives, and monitoring. We identified these specific areas in meetings with member cities during their LWMP process. These potential and upcoming project areas are discussed with member cities during annual project check-in's. They also come to our attention as we work with staff and Board members from our member organizations on other planning and projects. MWMO is in the process of developing a watershed planning tool that we can utilize in house to review specific areas of the watershed with internal and external resource/datasets to see where opportunities intersect so that we can be much more proactive in our watershed planning. This will help us when meeting with our members to identify opportunities to meet both our goals and the goals of others.
157	Friends of the Mississippi River	11/9/2020	In Section 6.1: Capital improvements schedule, FMR is not listed as a partner on the Nicollet Island project, despite bringing federal, county, and other funding toward the planning and restoration of the site and ultimately overseeing the creation and implementation of the site’s management plan (funded in part by MWMO’s planning and action grants). Only MWMO and MPRB are listed.	noted. We will add FMR as a partner under the Nicollet Island project, as FMR has played a critical role in the stabilization and restoration effort to date.
158	Friends of the Mississippi River	11/9/2020	“Invasive species management,” mentioned only once in the document (in the wildlife section when discussing creating healthy bird habitat), should be emphasized far more. The effects on water quality should be explicitly stated. Similarly, restoration of native vegetation is mentioned throughout the document. However, removal of invasive plant species is a key component of that restoration process that is rarely discussed. In fact, removal of invasive vegetation can often have immediate benefits on water quality (e.g. Larkin et al 2013). In the explanation in the Capital Improvements section, it would be better not only talk about restoration of native vegetation, but also explicitly link the removal of invasive vegetation to water quality benefits. The document does not do an adequate job of linking habitat and natural areas restoration to water quality benefits. These benefits should be driving the prioritization of restoration within the watershed. There need to be more stated links to the effects of invasive removal and restoration of native vegetation on water quality. For example, using models like RUSLE2 that demonstrate soil loss and allow comparison of different land cover types allows us to identify the benefits on water quality of turning ag land into prairie. Journal articles like Larkin et al. 2013 show the effects of removing invasive common buckthorn on decreasing erosion and sedimentation into waterways. Restoration is also a new priority in both the WQ (medium) and EH (high, but through redevelopment?) sections. This is good, but there’s little narrative to support the benefits of restoration. It’s good to see that habitat restoration is now explicitly included in Capital Improvement Projects. Priorities like reducing fragmentation and creating diverse, functional natural landscapes have far reaching benefits for wildlife and humans beyond simply improving water quality. We hope to see this reflected in projects that are funded in the next few years.	see Sections 2,5,7 for multiple social and environmental benefits of habitat and stormwater the can support it. Funding programs that focus solely on Invasive species removal is not a primary focus of the MWMO. Invasive species removal activities that are a subpart of a larger bank restoration project or restoring a comprehensive habitat corridor system throughout the watershed is more likely. The watershed is seeking opportunities to bring multiple benefits to the community as a result of the work we are doing.

159	MnDOT	12/14/2020	Page 38, Local Water Plans: MnDOT is referred to in this local water plan section which discusses local water plan and city comprehensive plan processes and reviews. MnDOT doesn't have a local water plan because it is not a city and doesn't follow the same processes/reviews as the cities do. As a State agency, MnDOT is also not required to comply with the WMO plan/standards. MnDOT does follow the standards to the best of its' ability within the trunk highway right-of-way. MID's is already a part of the MWMO Standards. Due to the above, please remove the mention of MnDOT in this local water plan section.	Statement has been removed
160	MnDOT	12/14/2020	Page 186, Capital Improvement Projects: One of the projects mentioned in this section is the Fridley: University Avenue Drainage Improvement Project. It mentions that the cities and MnDOT will work to identify and implement a stormwater management solution at University Avenue, near the intersection of 49th Ave NE with the goals of the project to reduce peak flows and improve water quality. It also mentions that practices to be considered may include vaults in the right of way. MnDOT practice is not to put vaults and underground storage directly under highways. Please remove this part referring to vaults under Highway 65/University Avenue.	noted. We have removed language around vaults, or any particular BMP at this time.
161	Hennepin County	12/16/2020	Climate change and its projected impacts on water resources felt noticeably absent from this plan, and we'd encourage you to consider climate change in a variety of places in your planning, especially in the opportunities/challenges section, as well as in some way as it relates to how your plan interacts/intersects with stormwater permitting for member cities.	See Section 4.5.1 Climate and Precipitation for additional content added on climate change See also Sections 2,3,4,5,6,7 Updates have been made to the section 5.5 Ecosystem Health focus area, as well as the implementation table to reflect climate change considerations including invasive flora. The MWMO considers equity and climate change as more comprehensive issues that will permeate throughout all aspects of our organization and the work we do. As such, additional goals or strategies on these topics may be added to Table 27 as staff and the MWMO Board develop the plans and policies needed to fully address these topics. In addition, we consider the impacts of climate change with most everything that we do. From our educational messaging, to plants we recommend for projects, to sizing of stormwater practices, we are constantly addressing climate change in our work. We use Atlas 14, we consider incorporation of climate resilient trees in our habitat restorations, like sycamore. We look to retain as much runoff on site as possible. We always try to include pretreatment devices that dissipate flow before entering BMPs, as we know rains are becoming more and more flashy. MWMO has updated the precipitation tables to include the most current and updated future precipitation projections. While MWMO does not have plans to update our water quality/quantity standards, we are using our H&H modeling to inform decisions around where, attempting to capture greater than the 1.1" rain event could make sense to alleviate structural impacts or downstream flooding.
162	Hennepin County	12/16/2020	Section 4.4.5 Redevelopment Opportunities – the language in the last couple sentences of this paragraph struck me as unusually noncommittal/reactionary, which has not been my experience with the MWMO, and so it just struck me as odd. In a watershed where most of your opportunities are going to be related to redevelopment, it seemed like approaching these sentences with a great sense of organizational agency would make sense. Getting together a map of these key areas seems like a really good idea. And "relying on member cities to request our assistance" just seems like it lacks strategy and intent, and leaves you vulnerable to individual staff departures at member cities (which are bound to occur). I suspect you do actually have a more strategic/intentional process in place to keep your pulse on the important redevelopment opportunities (even if that's just regular check-ins or something simple like that) – I'd suggest spelling that out.	We identified these specific areas in meetings with member cities during their LWMP process. These potential and upcoming project areas are discussed with member cities during annual project check-in's. They also come to our attention as we work with staff and Board members from our member organizations on other planning and projects. MWMO is in the process of developing a watershed planning tool that we can utilize in house to review specific areas of the watershed with internal and external resource/datasets to see where opportunities intersect so that we can be much more proactive in our watershed planning. This will help us when meeting with our members to identify opportunities to meet both our goals and the goals of others
163	Hennepin County	12/16/2020	Consider adding regional trail search areas to the plan – this could provide access to regional funding for projects that simply isn't available if you don't clearly identify those corridors in your planning documents	We will consider adding the regional trail search areas to our plan. We currently have existing regional parks and trails. While the MWMO does not fund trail construction we do partner with entities requesting funding for regional trails (e.g. MPRB requesting regional trail funding for trail that would connect the grand rounds missing link) In this case we are trying to integrate a District Stormwater system, parks, city ROW and privately owned public land into one larger seamless public space with multiple layers of benefits. At a minimum , we will consider this dataset when planning future projects and consider the layered benefits they could have, including future trail connections.
164	Hennepin County	12/16/2020	Update the plan to reflect new MS4 permittee requirements – these will (soon) be different from the construction stormwater permits, but the draft plan treats them as thought they are the same – an updated plan should clearly differentiate between the two.	We think these are adequately distinguished. We have identified MS4 permittees within the MWMO and have a separate section on construction stormwater permits. We are open for more clarification, if we miss understood the question.
165	Hennepin County	12/16/2020	Updated data would make it a more useful document - The MWMO's plan cites the previous 2030 city comprehensive plans (in the document and in the bibliography), which have been superseded by the 2040 plans. These should be used consistently in the document to provide the most useful information - Sometimes the document includes information from different versions of a city plan, which is confusing. - The document uses 2010 Census data, which at this point is quite old	We have updated this section/table to reflect all cities data we have for their 2040 comprehensive plans. Cities we have 2040 data for: Minneapolis, Columbia Heights, Lauderdale, St. Anthony Village. Cities we are still using 2030 data for: Fridley, Hilltop, St. Paul

166	Hennepin County	12/16/2020	In general, simplify language and structure and let key messages shine – I know there are a lot of statutory planning requirements, but those things often get in the way of the really good parts of this plan. Likely more than you're interested in doing at this stage for this plan, but maybe next time around, consider what could get shuttled to an Appendix in order to allow the plan to flow better and clearly articulate a vision/purpose. - Consider a re-work of the Executive Summary set an aspirational tone, summarize key messages, and elevate focus areas before launching into required plan content.	Well said. We considering a communications version that is more oriented for the general public consumption a quick read with key messages and a bit more color. This document is a more dry read given it is mean t to satisfy statoury requirements. Our audience is primarily for other governmental entities who we need to align our goals with; clarify our role and theirs; be clear about the services we offer; and the resources we have to manage; identify significant issues to be addressed etc...
167	Hennepin County	12/16/2020	And, not specifically related to this plan, but feedback I heard from our Transportation Department when discussing this plan, so something I wanted to pass along: it's confusing for them to figure out when and how they need to interact with you on projects – is this plan an opportunity to more clearly spell that out? Maybe this is just because we're the county and not one of your member cities, and if that's a problem that's unique to us then maybe we should just discuss outside of the context of plan review at some point, but didn't want to miss the opportunity to have that conversation.	noted. We are non regulatory, so we don't have any requirements for HC projects, that would be with the cities that enforce stormwater management within the MWMO. We would be open to meeting and further discussing opportunities for partnership with the county on capital projects, through similar timelines and project review as delineated for our member cities in section 3.
168	CPED	12/17/2020	On pdf pages 108 and 109 the existing and future land uses refer to the Minneapolis Plan for Sustainable Growth. We have adopted a new comprehensive plan, Minneapolis 2040, with a revised future land use map. https://minneapolis2040.com/	noted. We will work to update this before sending out the 90 day review. Here is the dataset we are using: http://opendata.minneapolismn.gov/datasets/future-land-use-and-built-form-2040 it appears to have been last updated January 2021. If this is wrong, please let us know and we can update the information
169	CPED	12/17/2020	On pdf page 135 related to the MRCCA, we will be adopting our MRCCA zoning ordinance (hopefully) this Friday (12/18/2020) with and effective date of January 1, 2021. http://www2.minneapolismn.gov/cped/planning/WCMSP-225822	See Section 4.5.5 for updated content on MRCCA As a part of our plan update, the MWMO is developing web based guidance on with the current status of our Member cities plans / ordinances for the MRCCA. The link will be inserted in the final Plan.

Appendix I

Design Sequence Flow Chart

version 7.22.2021

MWMO DESIGN SEQUENCE FLOW CHART

Conduct Site Review:
- Aerial Photos and Topographic Maps
- County Soil Surveys and other Soil Information as Available
- County Geologic Atlas
- Local Groundwater Levels
- DWSMA and Wellhead Protection Maps
- FEMA and Local Floodplain Maps
- Soil Borings and Site Survey
- MPCA Listing of Potentially Contaminated Sites
- Phase 1 and 2 Environmental Site Assessments
- TMDLs and Local Water Quality Standards
- Wetland Delineations, MNRAM Assessments, and Wetland Classifications
- Proposed Conditions, Conceptual/Preliminary Site Design
- Local zoning and land use requirements/ordinances, including stormwater rate control requirements
- Communication with Local Landowners, LGU, or Others Knowledgeable about the Site
- Site Inspection

Define Performance
Development and redevelopment projects: Retain on site a volume of 1.1 inches of runoff from the new and fully reconstructed impervious surfaces.

Linear projects: Retain on site the larger of 1.1" from the net increase in impervious area, or .55" from all new and fully reconstructed (D) impervious surfaces.

Does the project disturb one acre or more?
- No → MWMO performance goal does not apply
- Yes →

Is the project linear?
- Yes → Are there restraints due to lack of available ROW, off site drainage and/or rate control requirements? (F)
  - Yes → Is FTO Alternative No. 2 feasible?
    - Yes →
      - Select FTO Alternative No. 2
      - Provide documentation of offsite run on to project area
      - Provide documentation of lack of ROW.
    - No → Select FTO Alternative No. 3. Provide site survey, maps, regulations, and/or cost estimates documenting that meeting the original performance goal or FTO alternatives is not feasible in addition to other documentation as required by LGU.
  - No →
- No →

Are there zoning and land use requirements (density, parking, setbacks, etc.) that make the Performance Goal not feasible? (G)
- Yes → Is BMP relocation feasible?
  - No → Is FTO Alternative No. 1 feasible?
    - Yes →
      - Select FTO Alternative No. 1
      - Provide regulations, and/or cost estimates documenting infeasibility of meeting the original Performance Goal
    - No → Is FTO Alternative No. 2 feasible?
      - Yes →
        - Select FTO Alternative No. 2
        - Provide regulations, and/or cost estimates documenting infeasibility of meeting the original Performance Goal.
      - No → Select FTO Alternative No. 3. Provide site survey, maps, regulations, and/or cost estimates documenting that meeting the original performance goal or FTO alternatives is not feasible in addition to other documentation as required by LGU.
  - Yes →
- No →

Is the site located in a DWSMA, wellhead protection area, or within 200 feet of a drinking well?
- Yes → Can a local unit of government provide a higher level of engineering review to ensure a functioning system that prevents adverse impacts to groundwater?
  - No →
    - Select FTO Alternative No. 2
    - No infiltration practices allowed
    - Explore non-infiltration volume reduction practices
    - Provide DWSMA or well location map
  - Yes →
- No →

Are there existing or proposed structures or infrastructure (e.g., rate control BMPs, utilities, buildings, roadway, easements) that make the Performance Goal not feasible? (G)
- Yes → Is BMP relocation feasable?
  - No → Is FTO Alternative No. 1 feasible?
    - Yes →
      - Select FTO Alternative No. 1
      - Provide regulations, and/or cost estimates documenting infeasibility of meeting the original Performance Goal
    - No → Is FTO Alternative No. 2 feasible?
      - Yes →
        - Select FTO Alternative No. 2
        - Provide regulations, and/or cost estimates documenting infeasibility of meeting the original Performance Goal
      - No → Select FTO Alternative No. 3. Provide site survey, maps, regulations, and/or cost estimates documenting that meeting the original performance goal or FTO alternatives is not feasible in addition to other documentation as required by LGU.
  - Yes →
- No →

Are active karst areas within 1000 feet up-gradiant or 100 feet downgradiant of the BMP location?
- Yes → Can a local unit of government provide a higher level of engineering review to ensure a functioning system that prevents adverse impacts to groundwater?
  - No → Is BMP relocation onsite to a location without karst feasible?
    - No → Is FTO Alternative No. 2 feasible?
      - Yes →
        - Select FTO Alternative No. 2
        - No infiltration practices allowed
        - Explore non-infiltration volume reduction practices
        - Provide soil borings or report from a professional geologist or geotechnical engineer.
      - No → Select FTO Alternative No. 3. Provide site survey, maps, regulations, and/or cost estimates documenting that meeting the original performance goal or FTO alternatives is not feasible in addition to other documentation as required by LGU.
    - Yes →
  - Yes →
- No →

Is shallow groundwater or shallow bedrock present on site?
- Yes → Conduct detailed site investigation (i.e., borings, excavations, consultation with a professional geologist).
  - → Is there >5 feet of soil depth (> 10 feet is preferred) from bottom of BMP to bedrock and groundwater?
    - No → Is BMP relocation onsite to avoid shallow groundwater and bedrock feasible?
      - No → Can BMP be raised?
        - Yes → Raise BMP enough to ensure 5 feet (preferably 10 feet) of soil between bottom of BMP and top of bedrock and groundwater.
        - No → Is FTO Alternative No. 2 feasible?
          - Yes →
            - Select FTO Alternative No. 2
            - No infiltration practices allowed
            - Explore non-infiltration volume reduction practices
            - Provide soil borings or report from a professional geologist or geotechnical engineer.
          - No → Select FTO Alternative No. 3. Provide site survey, maps, regulations, and/or cost estimates documenting that meeting the original performance goal or FTO alternatives is not feasible in addition to other documentation as required by LGU.
      - Yes →
    - Yes →
- No →

Is there presence of contaminated soils and/or groundwater, or hotspot runoff? (H)
- Yes → Can hotspot or contamination be isolated or remediated to mitigate risk of increased contamination?
  - No →
    - Select FTO Alternative No. 2
    - No infiltration practices allowed
    - Explore non-infiltration volume reduction practices
    - Provide Phase I or II ESAs, or other documentation of potential contamination or hotspot runoff
    - Provide documentation of extent of contamination and remediation alternatives considered
  - Yes →
- No →

Are there very low infiltrating soils (<0.2 inches per hour)?
- Yes → Is BMP relocation onsite to a higher-infiltrating location feasible?
  - No → Can BMP be sized to drain dry within 48 hours (24 hours in locations that are tributary to trout streams)?
    - No → Provide soil boring or infiltration test results documenting low-infiltrating soils.
      - → Is FTO Alternative No. 1 (lower volume control standard) feasible, allowing the BMP to drain within 48 hours (24 hours in locations that are tributary to trout streams)?
        - Yes →
          - Select FTO Alternative No. 1
          - Provide soil boring or infiltration test results documenting high-infiltrating soils.
        - No →
          - Select FTO Alternative No. 2
          - No infiltration practices allowed
          - Explore non-infiltration volume reduction practices
          - Provide soil boring or infiltration test results documenting low infiltration rates.
    - Yes →
  - Yes →
- No →

Are there very high infiltrating soils (>8.3 inches per hour)? (E)
- Yes → Is BMP relocation onsite to a lower-infiltrating location feasible?
  - No → Can subgrade be modified to slow the rate of infiltration to less than 8.3 inches per hour?
    - No →
      - Select FTO Alternative No. 2
      - No infiltration practices allowed
      - Explore non-infiltration volume reduction practices
      - Provide soil boring or infiltration test results documenting high-infiltrating soils.
    - Yes →
  - Yes →
- No →

Are there adverse surface water hydrologic impacts from infiltration practices (e.g., impacting perched wetland)?
- Yes → Can the BMP be relocated onsite to avoid adverse hydrologic impacts?
  - No → Would BMP accommodating FTO Alternative No. 1 avoid adverse hydrologic impacts?
    - No →
      - Select FTO Alternative No. 2
      - Maximize infiltration BMPs to treat up to the 0.55 inch goal, if possible.
      - Explore non-infiltration volume reduction practices
      - Provide report documenting potential hydrologic impacts from infiltration on the site, prepared by registered engineer, hydrologist, or wetlands specialist.
    - Yes →
      - Select FTO Alternative No. 1
      - Maximize infiltration BMPs to treat more than 0.55 inch goal, if possible.
      - Provide report documenting potential hydrologic impacts from infiltration on the site, prepared by registered engineer, hydrologist, or wetlands specialist.
  - Yes →
- No →

Complete Design Using Performance Goal
(As modified by FTO Alternatives, if applicable)

MWMO Project Flexible Treatment Options (FTO)

The Flexible Treatment Options (FTO) alternatives presented here should be employed when the Performance Goal is not feasible and/or allowed. The designer should document the reasons why the Performance Goal and rejected FTO Alternatives are not feasible and/or allowed.

FTO 1
Applicant attempts to comply with the following conditions:
1.a. Achieve at least 0.55" volume reduction goal, and
1.b. Remove 75% of the annual TP load, and
1.c. Options considered and presented shall examine the merits of relocating project elements to address, varying soil conditions and other constraints across the site

FTO #2
Applicant attempts to comply with the following conditions:
2.a. Achieve volume reduction to the maximum extent practicable (as determined by the Local Authority), and
2.b. Remove 60% of the annual TP load, and
2.c. Options considered and presented shall examine the merits of relocating project elements to address, varying soil conditions and other constraints across the site.

FTO #3
The MWMO will develop a Memorandum of Understanding with individual member cities and MS4s to address off-site mitigation conditions.

Off-site mitigation (including banking or cash or treatment on another project, as determined by the Local Authority) will be equivalent to the volume reduction Performance Goal.

Notes:
A. Volume reduction techniques considered shall include infiltration, rainwater harvesting & reuse, bioretention, permeable pavement, tree boxes, grass swales and/or additional techniques included in the MIDS calculator or the Minnesota Stormwater Manual.
B. Applicant shall document the flexible treatment options decision sequence, following the order of alternatives presented here.
C. For Alternative #2, the applicant is encouraged to use BMPs that reduce volume. Secondary preference is to employ filtration techniques, followed by rate control BMPs.
D. Fully reconstructed impervious surfaces: Areas where impervious surfaces have been removed down to the underlying soils. Activities such as structure renovation, mill and overlay projects and other pavement rehabilitation projects that do not alter the underlying soil material beneath the structure, pavement or activity are not considered full reconstruction. In addition, other maintenance activities such as catch basin and pipe repair/ replacement, lighting, and pedestrian ramp improvements shall not be considered fully reconstructed impervious surfaces. Reusing an existing building foundation and re-roofing of an existing building are not considered fully reconstructed.
E. Soils that infiltrate too quickly may not provide sufficient pollutant removal before the infiltrated runoff enters groundwater.
F. A reasonable attempt must be made to obtain ROW during the project planning process.
G. Other, this is not an exhaustive list.
H. Hotspots includes any portion of a facility where infiltration is prohibited under an NPDES/ SDS industrial stormwater permit issued by the MPCA.

Adapted from MIDS Design Sequence Flow Chart, December 2013

Appendix J

MWMO 2021 WMP Data Sources and Updates

Updated Tables

Natural and Semi Natural Areas	Acres	% of Watershed
Disturbed Forested Wetlands	243.90	0.955%
Disturbed Forests	0.56	0.002%
Disturbed Grasslands	239.92	0.939%
Disturbed Shrublands	11.16	0.044%
Disturbed Woodlands	6.09	0.024%
Native Forested Wetlands	175.70	0.688%
Native Forests	73.24	0.287%
Native Grasslands	41.72	0.163%
Sparse Vegetation	1.21	0.005%
Water	907.40	3.552%
Totals	**1,700.90**	**6.659%**

MWMO Area (ac) **25,543.17**

Source:
MnDNR Natural and Semi-Natural Areas dataset (See Figure in plan).

Table Update Process:
1.) Verify the total acres of the MWMO (cell B17).
2.) Utilize the MnDNR Natural and Semi-Natural Areas dataset.
3.) Clip the land use data using the MWMO boundary.
4.) Sum the areas (acres) by type using a pivot table and add the land use to column A and total areas (acres) to column B.
5.) Column C is automatically calculated based on the MWMO total acreage.
6.) Totals (row 14) are automatically calculated by the table.

City	2010 Census[1]	2019 Estimate[1]	2040 Forecast[1]
Columbia Heights	17,572	19,040	20,821
Fridley	9,549	10,309	11,406
Hilltop	744	794	1,090
Minneapolis	207,748	236,695	263,365
Saint Anthony Village	4,406	4,832	4,714
Saint Paul	1,725	1,912	2,082
Lauderdale	356	366	442
Totals	**242,101**	**273,947**	**303,920**

[1] Population based on census data, estimates, and long-range forecasts from the Metropolitan Council. Populations adjusted by multiplying the percent of the city within the MWMO by the population of the city.

Source:
https://metrocouncil.org/Data-and-Maps/Research-and-Data/Annual-Population-Estimates.aspx
https://metrocouncil.org/Data-and-Maps/Research-and-Data/Thrive-2040-Forecasts.aspx

Table Update Process:
1.) Verify the % of each city within the MWMO (column b, rows 13-19).
2.) Fill in the census, estimate, and forecast data in rows 13-19 for the various years. Adjust year columns if necessary.
3.) Plan table (rows 1-10) will populate automatically.

City	% of City in MWMO	2010 Census	2019 Estimate	2040 Forecast
Columbia Heights	90.13%	19,496	21,124	23,100
Fridley	35.10%	27,208	29,374	32,500
Hilltop	100.00%	744	794	1,090
Minneapolis	54.30%	382,578	435,885	485,000
Saint Anthony Village	53.57%	8,226	9,020	8,800
Saint Paul	0.61%	285,068	315,925	344,100
Lauderdale	14.97%	2,379	2,442	2,950

* in both Hennepin and Ramsey Counties

Land Use	Acres	% of Watershed
Agricultural	17.6	0.1%
Golf Course	360.0	1.4%
Industrial and Utility	3165.4	12.4%
Institutional	2127.6	8.3%
Major Highway	1311.2	5.1%
Major Railway	760.9	3.0%
Manufactured Housing Parks	39.4	0.2%
Mixed Use Commercial	177.6	0.7%
Mixed Use Industrial	293.5	1.1%
Mixed Use Residential	255.2	1.0%
Multifamily	1674.4	6.6%
Office	530.2	2.1%
Open Water	879.2	3.4%
Park, Recreational, or Preserve	1567.5	6.1%
Retail and Other Commercial	1498.4	5.9%
Seasonal/Vacation	0.0	0.0%
Single Family Attached	1880.6	7.4%
Single Family Detached	8180.4	32.0%
Undeveloped	823.9	3.2%
Totals	**25,543.2**	**100%**

MWMO Area (ac) **25,543.17**

Source:
Metropolitan Council Generalized Land Use

Table Update Process:
1.) Verify the total acres of the MWMO (cell B16).
2.) Utilize the Metropolitan Council Generalized Land Use data set.
3.) Clip the land use data using the MWMO boundary.
4.) Sum the areas (acres) by land use type using a pivot table and add the land use to column A and total areas (acres) to column B.
5.) Column C is automatically calculated based on the MWMO total acreage.
6.) Totals (row 13) are automatically calculated by the table.

Land Use	Acres	% of Watershed
Commercial	330.9315	1.3%
Industrial	2388.373	9.4%
Institutional	1747.519	6.8%
Mixed Use	490.2178	1.9%
Multi-Optional Development	5921.703	23.2%
Multifamily Residential	1895.205	7.4%
Open Water	887.1528	3.5%
Park and Recreation	2127.69	8.3%
Railway (inc. LRT)	728.6428	2.9%
Rights-of-Way (i.e., Roads)	1205.555	4.7%
Single Family Residential	7820.215	30.6%
Totals	**25,543.2**	**100%**

Source:
Metropolitan Council Regional Planned Land Use

Table Update Process:
1.) Verify the total acres of the MWMO (cell B16).
2.) Utilize the Metropolitan Council Regional Planned Land Use data set.
3.) Clip the land use data using the MWMO boundary.
4.) Sum the areas (acres) by land use type using a pivot table and add the land use to column A and total areas (acres) to column B.
5.) Column C is automatically calculated based on the MWMO total acreage.
6.) Totals (row 13) are automatically calculated by the table.

MWMO Area (ac) **25,543.17**

City	Plan Year
Columbia Heights	2040
Fridley	2030
Hilltop	2030
Lauderdale	2040
Minneapolis	2040
Saint Paul	2030
St. Anthony Village	2040

Common Name	Genus and Species	Status
A Species of Fungus	Psathyrella rhodospora	Minnesota - Endangered
Acadian Flycatcher	Empidonax virescens	Minnesota - Special Concern
American Burying Beetle	Nicrophorus americanus	Minnesota - Watchlist
Autumn Fimbry	Fimbristylis autumnalis	Minnesota - Special Concern
Beach Heather	Hudsonia tomentosa	Minnesota - Threatened
Black Huckleberry	Gaylussacia baccata	Minnesota - Threatened
Black Sandshell	Ligumia recta	Minnesota - Special Concern
Blanding's Turtle	Emydoidea blandingii	Minnesota - Threatened
Eastern Hognose Snake	Heterodon platirhinos	Minnesota - Watchlist
Fawnsfoot	Truncilla donaciformis	Minnesota - Threatened
Ghost Tiger Beetle	Cicindela lepida	Minnesota - Threatened
Handsome Sedge	Carex formosa	Minnesota - Endangered
Higgins Eye	Lampsilis higginsii	Federal - Endangered Minnesota - Endangered
Kentucky Coffee Tree	Gymnocladus dioica	Minnesota - Special Concern
Lance-leaf Violet	Viola lanceolata var. lanceolata	Minnesota - Threatened
Late Hawthorn	Crataegus calpodendron	Minnesota - Special Concern
Leadplant Flower Moth	Schinia lucens	Minnesota - Special Concern
Mucket	Actinonaias ligamentina	Minnesota - Threatened
Mudpuppy	Necturus maculosus	Minnesota - Special Concern
Peregrine Falcon	Falco peregrinus	Minnesota - Special Concern
Plains Hog-nosed Snake	Heterodon nasicus	Minnesota - Special Concern
Prairie Vole	Microtus ochrogaster	Minnesota - Special Concern
Rusty-patched Bumble Bee	Bombus affinis	Federal - Endangered Minnesota - Watchlist
Slender Naiad	Najas gracillima	Minnesota - Special Concern
Spike	Eurynia dilatata	Minnesota - Threatened
Swamp White Oak	Quercus bicolor	Minnesota - Special Concern
Tall Nutrush	Scleria triglomerata	Minnesota - Endangered
Tricolored Bat	Perimyotis subflavus	Minnesota - Special Concern
Wartyback	Quadrula nodulata	Minnesota - Threatened

Source:
MnDNR Natural Heritage Information System
https://www.dnr.state.mn.us/nhnrp/nhis.html

USFWS
https://www.fws.gov/endangered/

Table Update Process:
1.) Buffer the MWMO boundary by 1 miles.
2.) Select all of the species from the MnDNR Natural Heritage Information System data within the 1 mile buffer area. Data includes common name, genus and species, and Minnesota Status.
3.) Check for any Federal endangerment status of identified species on the USFWS database.
4.) Update column C based on state and federal status.

Permit Holder	Type of MS4	Permit ID
Anoka County	Mandatory Phase II	MW400066
Columbia Heights	Mandatory Phase II	MS400010
Fridley	Mandatory Phase II	MS400019
Hennepin County	Mandatory Phase II	MS400138
Hilltop	Mandatory Phase II	MS400023
Lauderdale	Mandatory Phase II	MS400026
Minneapolis	Phase I Large MS4	MN0061018
Minneapolis Community and Technical College	Mandatory Phase II	MS400207
Minnesota Department of Transportation	Mandatory Phase II	MS400170
Ramsey County Public Works	Mandatory Phase II	MS400191
Saint Anthony Village	Mandatory Phase II	MS400051
Saint Paul	Phase I Large MS4	MS400054
University of Minnesota – Twin Cities	Mandatory Phase II	MS400212

Source:
MN Geospatial Commons: MS4 Boundaries in MN
https://gisdata.mn.gov/dataset/util-ms4-boundaries

Table Update Process:
1.) Compare the MS4 boundaries with the MWMO boundaries in GIS.
2.) Select all MS4s within the MWMO boundary (be careful, some on the boundary may be selected and should not be included (i.e. Capitol Regions WD).
3.) Correct the table (if necessary) using the GIS attributes.

Mean Monthly Precipitation, 1981 - 2010	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
Precipitation (inches)	0.90	0.77	1.89	2.66	3.36	4.25	4.04	4.30	3.08	2.43	1.77	1.16	30.61
Mean Monthly Snowfall, 1981 - 2010	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**Annual**
Snowfall (inches)	12.2	7.7	10.3	2.4	-	-	-	-	-	0.6	9.3	11.9	54.4
Mean Temperature, 1981 - 2010	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**Annual**
Max °F	23.7	28.9	41.3	57.8	69.4	78.8	83.4	80.5	71.7	58.0	41.2	27.1	55.2
Min °F	7.5	12.8	24.3	37.2	48.9	58.8	64.1	61.8	52.4	39.7	26.2	12.3	37.2
Mean °F	15.6	20.8	32.8	47.5	59.1	68.8	73.8	71.2	62.0	48.9	33.7	19.7	46.2

Source:
NOAA National Climatic Data Center
https://www.ncdc.noaa.gov/
Note for this update: the MnDNR had already calculated these statistics and this data set was used for reference:
https://files.dnr.state.mn.us/natural_resources/climate/twin_cities/msp_normals_1981-2010.pdf

Table Update Process:
1.) Determine a 30-year period.
2.) Download the monthly average precipitation, snowfall, and max/min/average tempterature data from NOAA NCDC for the Minneapolis-St. Paul Airport (MS).
3.) This data may already be available from another local agency (i.e. MPCA, MnDNR, etc.) and could be used to populate the table, rather than getting the data directly from NOAA.

Probability of Exceedance	Return Period	Duration of Storm Event							
		24-hour	12-hour	6-hour	3-hour	2-hour	1-hour	30-min.	15-min.
100%	1-year	2.47	2.14	1.89	1.61	1.44	1.17	0.89	0.63
50%	2-year	2.85	2.51	2.20	1.88	1.70	1.38	1.06	0.75
20%	5-year	3.56	3.23	2.82	2.42	2.18	1.76	1.35	0.94
10%	10-year	4.26	3.92	3.44	2.93	2.62	2.11	1.60	1.11
4%	25-year	5.38	5.01	4.44	3.76	3.32	2.64	1.96	1.36
2%	50-year	6.36	5.97	5.34	4.48	3.91	3.08	2.24	1.56
1%	100-year	7.44	7.02	6.34	5.29	4.56	3.55	2.53	1.76

Source:
NOAA National Weather Service
https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=mn
Note for this update: the values should not have changed (i.e. Atlas 14 did not change). However, this seems to be some uncertainty between the table caption and the plan text as to whether the data is based on the MSP airport or the MWMO centroid.

Table Update Process:
1.) Go to the NOAA/NWA website for Atlas 14.
2.) Enter the location of the data request (i.e. MSP, MWMO centroid, etc.)
3.) The NOAA/NWS website provides a table for design storm depths.

MWMO Centroid is:
Latitude: 44.9964°
Longitude: -93.2538°

Waterbody	Year Listed	Impairment	Target Completion Year or Status
Streams			
Bassett Creek - Medicine Lake to Mississippi River[1]	2010	Chloride	TMDL Approved in 2016
	2008	Fecal Coliform	TMDL Approved in 2014
	2004	Fish Bioassessment	2025
Mississippi River - Crow River to Upper St. Anthony Falls	2006	Fecal Coliform	2024
	1998	Mercury in Fish Tissue	TMDL Approved in 2007
	2016	Nutrients	2018
	2002	PCB in Fish Tissue	2020
Mississippi River - Upper St. Anthony Falls to St. Croix River	1994	Fecal Coliform	2022
	1998	Mercury in Fish Tissue	TMDL Approved in 2007
	1998	Mercury in Water Column	TMDL Approved in 2007
	2016	Nutrients	2018
	1998	PCB in Fish Tissue	2020
	2008	PFOS in Fish Tissue	2025
	2014	PFOS in Water Column	2025
	2014	TSS	TMDL Approved in 2016
Lakes			
Loring (South Bay)	2014	Chloride	TMDL Approved in 2016
Kasota Pond North	2014	Chloride	TMDL Approved in 2016
Kasota Pond West	2014	Chloride	TMDL Approved in 2016
Mallard Marsh	2014	Chloride	TMDL Approved in 2016
Sandy	2002	Nutrients	2025
Unnamed (Highland Lake)	2004	Nutrients	2025

Source:
MPCA 2018 Impaired Waters List
https://www.pca.state.mn.us/water/2018-impaired-waters-list
Note for this update: the 2020 impaired waters list was available, but in draft still.

Table Update Process:
1.) Go to the MPCA website and download the current impaired waters spreadsheet and the associated shapefile.
2.) Select all of the impaired waters (lakes and streams) within the MWMO. Note some waterbodies flow into the edge of the MWMO (e.g. Bassett Creek).
3.) Enter any new data and update old data using the MPCA impaired waters spreadsheet.

Note: The AUID column is included for reference and should not be included in the plan table.

[1] Bassett Creek is wholly contained underground within the MWMO.
PCB = Polychlorinated biphenyl
PFOS = Perfluorooctane Sulfonate
TSS = Total Suspended Solids

Map Figures- List of Map Figures with Data Source and Year

Existing Figures					
Figure #	**Name**	**Layer**	**Source**	**Year**	**Notes**
1	MWMO Boundary	MWMO Boundary	MWMO	2014	
2	Potential Limitations to Infiltration				
	Location Map of Special Area Plans	Special Area Plans	MWMO	2014	
3	Topography	Contours	Minnesota DNR	2011	
4	Surficial Geology	Surficial Geology	Minnesota Geological Survey (M-178)	2007	
5	Bedrock Geology	Bedrock Geology	MPCA Metropolitan Groundwater Mo	2000	
6	Bedrock Units		(Ojakangas and Marsh, 1982)	1982	
7	Historic Hydrologic Soil Group	Hydrologic Soils	NRCS	2007	
8	Present Day Urban Soils	Soil Type	NRCS		Unedited From Previous Plan
9	Modern Secondary Soil Information	Soil Information	NRCS		Unedited From Previous Plan
10	Combined Historic and Modern Soil Information	Modern Soil Unit	NRCS		Unedited From Previous Plan
11	Soil Series	Hennepin NRCS Soil Units	NRCS		Unedited From Previous Plan
12	Soil Orders	NRCS Natural Soil or Complex	NRCS		Unedited From Previous Plan
13	NRCS Based Vegetation	NRCS Vegetation	NRCS		Unedited From Previous Plan
14	Historic Estimate of Soil Hydrologic Group	?	?		Unedited From Previous Plan
15	Natural and Semi Natural Areas	Natural and Semi Natural Areas	Minnesota DNR	2008	
16	Population Density	Block Groups	U.S. Census Bureau	2010	
17	Areas of Concentrated Poverty	ACP 50	Met Council		
18	Population Density	2010 Population	Census	2010	
19	Neighborhood Boundaries	Minneapolis Neighborhoods	City of Minneapolis	2014	
20	Historic Subwatersheds	Historic Subwatersheds	MWMO	2009	
21	Present land use	Land Use	Metropolitan Council	2011	
22	2020 Future Land Use	2020 Land Use	Metropolitan Council	2014	
23	Surface and Groundwater Appropriations	Water Use Permit	Minnesota DNR	2014	
24	Parks and Open Space	Map Created By City	City of Minneapolis	2008	
25	Regional Parks and Trails	Map Created By City	City of Minneapolis	2008	
26	Existing Minneapolis Park System	Map Created By City	Minneapolis Park and Recreation Board	2007	
27	Minneapolis Trail System and Regional Park System	Map Created By City	Minneapolis Park and Recreation Board	2007	
28	Minneapolis Existing Land Use	Map Created By City	City of Minneapolis	2009	
29	Minneapolis Future Land Use	Map Created By City	City of Minneapolis	2009	
30	City of Saint Anthony Village Existing Land Use	Map Created By City	City of Saint Anthony Village	2008	
31	City of Lauderdale Existing Land Use	Map Created By City	City of Lauderdale	2008	
32	City of Saint Paul Park System	Map Created By City	City of Saint Paul	2008	
33	Columbia Heights Existing Land Use	Land Use	City of Columbia Heights	2008	
34	Columbia Heights Future Land Use	2030 Land Use	City of Columbia Heights	2008	
35	Fridley Existing Land Use	Land Use	City of Fridley	2007	
36	Friday Future Land Use	2030 Land Use	City of Friday	2007	
37	Hilltop Existing Land Use	Land Use	City of Hilltop	2009	
38	Hilltop Future Land Use	2030 Land Use	City of Hilltop	2009	
39	Mississippi National River and Recreation Map	Map Created By Agency	National Park Service	No date	Unedited From Previous Plan
40	Permitted Wastewater and Industrial Stormwater Sites	Industrial Stormwater Permit	Minnesota Pollution Control Agency	2014	
		Wastewater Discharge Sites	Minnesota Pollution Control Agency	2014	
41	Known and Potential Sources of Soil and Groundwater Contamination	Contaminated Sites	Minnesota Pollution Control Agency	2014	
42	Environmental Hazards	Potentially Contaminated Sites	Minnesota Pollution Control Agency	2014	
		County Well Index	Minnesota Department of Health	2014	
		Leaking Underground Storage Tanks	Minnesota Pollution Control Agency	2014	
43	Surface Water Resources	Wetlands (NWI)	U.S. Fish and Wildlife Service	2007	
		Bridal Veil Falls	EOR	2009	
		Public Waters Inventory (PWI)	Minnesota DNR	2009	
44	Metropolitan Mosquito Control District Wetlands	MMCD Wetlands	Metropolitan Mosquito Control Distric	2014	
45	Impaired Waters	Impaired Waters	Minnesota Pollution Control Agency	2014	

46	Minor Pipeshed Boundaries	Minneapolis Pipesheds	City of Minneapolis	2006	
		Lauderdale Pipesheds	City of Lauderdale	2008	
		Saint Anthony Village Pipesheds	City of Saint Anthony Village	2008	
		Saint Paul Pipesheds		No date	
		Columbia Heights Pipesheds	Columbia Heights	2014	
47	Subwatersheds	MWMO Subwatersheds	MWMO	2014	
48	New H&H and P8 Modeling Subwatersheds	MWMO Modeled Subwatersheds	MWMO	2020	
49	Storm Tunnel System	Map Created by Minneapolis	City of Minneapolis	No date	
50	FEMA Designated Flood Plains	Floodplains	Federal Emergency Management Agen	2007	
51	Sensitivity to Groundwater Pollution	Sensitivity to Goundwater Pollution	Minnesota Geological Survey	1989	
52	Groundwater Management Areas	Wellhead Protection Areas	Minnesota Department of Health	2019	
		Source Water Assessment Areas	Minnesota Department of Health	2014	
		Drinking Water Supply Management Area Vul	Minnesota Department of Health	2014	
53	Monitoring Locations of the MWMO	Monitoring Sites	MWMO	2020	

Data Dictionary- Source Data and Reference

Data Name	Description	Received	Updated Filename	Metadata	Source	Source Contact Information	Existing Plan Year	Update (Y/N)	Update Year	Notes
Aerial Imagery (Web Service)	Aerial imagery			N/A	MnGeo	MnGeo WMS service	2013	Y	2016	Used a service layer for imagery and not a raster. https://imageserver.gisdata.mn.gov/cgi-bin/wms?VERSION=1.3.0&SERVICE=WMS&REQUEST=GetCapabilities
Alternative Historic Subwatersheds	MWMO alternative historic subwatersheds	Yes	Historic_WS_AltBound	Limited Info	MWMO			N		
Approximate Stormwater Tunnels	Approximate Stormwater Tunnels	From Previous	StormTunnel_approx	Limited Info	City of Minneapolis Public Works Engineering Services	612-673-2965, karl.westermeyer@ci.minneapolis.mn.us	2014	Y		Used data from old plan
Bedrock	Metro Area bedrock layers	Yes	Metro_Bedrock	Created	MPCA	https://www.pca.state.mn.us/water/metropolitan-area-groundwater-model	2010	N		
Bridal Veil Falls	Location of Bridal Veil Falls	From Previous			Historic Waters Study					
Bridal Veil Wetland	Location of Bridal Veil Falls	From Previous			Historic Waters Study					
Census Block Groups - population	Population density (pop per acre)	Yes	Census_Block_Groups_In_MWMO	From Source	TIGER	https://www.census.gov/cgi-bin/geo/shapefiles/index.php?year=2019&layergroup=Blocks+%282010%29	2010	Y	2018	2014-2018 American Community Survey and Metro Council Areas of Concentrated Poverty
Census Tracts in MWMO	US Census Bureau, 2014-2018 five-year American Community Survey estimates	Yes	Census_Tracts_In_MWMO	From Source	TIGER			Y	2018	
Columbia Heights Parcel Land Use	Columbia Heights Parcels Current and Future (2040) Land Use	Yes	Columbia_Heights_Parcel_Land_Use	Created	Columbia Heights	p.10 https://cms5.revize.com/revize/columbiaheightsmn/document_center/2040%20Comp%20Plan/3_LandUse.pdf	2008	Y	2020	This parcel layer has current land use as of 10/2020 and future land use for 2040 as of the 2016 comprehensive plan.
Columbia Heights Pipe Watersheds	Columbia Heights Pipe Watersheds	Yes	Pipeshed_Catchments	Created	Columbia Heights	info@columbiaheightsmn.gov	2014	Y	2020	

Contours	50' Elevation Contours	Yes	Contours_50ft	Created	DNR LiDAR		2011	Y	2011	No elevation data newer than 2011 available for full area. If this layer was created from the DEM_elev below, it can be updated to the 2011 dataset.
County Well Index	Minnesota County Well Index	Yes	County_Well_Index	From Source	MPCA	https://www.mngeo.state.mn.us/chouse/metadata/wells.html	2014	Y	2019	
CTUs MWMO	Cities, Townships, Unorganized Territories	Yes	CTUs	From Source	Metropolitan Council	https://gisdata.mn.gov/dataset/us-mn-state-metc-bdry-metro-counties-and-ctus	2014	Y	2020	
DEM_elev	Digital Elevation Model	Yes	DEM_3m_m	Created	DNR LiDAR	ftp://ftp.lmic.state.mn.us/pub/data/elevation/lidar/	2001	Y	2011	30m DEM
DNR Lakes	Lakes	Yes	DNR_Lakes	From Source	DNR	https://gisdata.mn.gov/dataset/water-dnr-hydrography	2011	Y	2020	
DNR National Wetlands Inventory	DNR National Wetlands Inventory	Yes	MN_NWI	From Source	DNR	https://gisdata.mn.gov/dataset/water-nat-wetlands-inv-2009-2014		Y	2019	
DNR Public Waters Inventory	DNR Public Waters Inventory	Yes	Public_Waters_Inventory_Basins_2020	From Source	DNR	https://gisdata.mn.gov/dataset/water-mn-public-waters		Y	2020	
Drinking Water Supply Management Areas for Surface Water	Surface and subsurface area surrounding a public water supply intake	Yes	drinking_water_supply_management_area_surface_water	From Source	MDH	https://www.health.state.mn.us/communities/environment/water/swp/maps/index.htm	2009	N	2009	This layer has not been updated since 2009.
DWSMA Vulnerability	Assessment of the likelihood for a potential contaminant source within the drinking water supply management area to contaminate a public water supply	Yes	DWSMA_Vulnerability	From Source	MDH	https://www.health.state.mn.us/communities/environment/water/swp/maps/index.htm	2013	Y	2019	
FEMA Flood Zones	FEMA 100- and 500-yr flood zones	Yes	FEMA_Flood_Zones	Updated From Source	FEMA	https://gisdata.mn.gov/dataset/water-dnr-fema-dfirm	2003	Y	2020	
Flood Numbers	Annotation labels for floods where the label on the georeferenced image falls outside the city limits (masked).	From Previous	MPLS_1997_Flood_Annotations	Created	City of Minneapolis		2014	Y		

Fridley Existing Land Use	Fridley Existing Land Use	Yes	Fridley_Existing_Land_Use	Created	City of Fridley	p.27 https://fridleymn.gov/DocumentCenter/View/5290/2040-Comp-Plan---Full	2007	Y	2020	
Fridley Future Land Use	Fridley Future Land Use	Yes	Fridley_Future_Land_Use	Created	City of Fridley	p.29 https://fridleymn.gov/DocumentCenter/View/5290/2040-Comp-Plan---Full	2007	Y	2020	
Fridley Pipe Watershed Catchments	Pipesheds for the City of Fridley	Yes	Fridley_Pipesheds_2020	From Source	City of Fridley		-	Y	2020	
Groundwater Sensitivity to Pollution	Groundwater Sensitivity to Pollution	Yes	Groundwater_Sensitivity	Limited Info	DNR	https://www.dnr.state.mn.us/waters/groundwater_section/mapping/status.html	1989	N		This dataset is based on a study from 1989 and has most likely not changed.
Hennepin Soils 1929	Historic soils map for Hennepin County - image	Yes	Hennepin_Soils_1929_image	Created	NRCS	https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/minnesota/HennepinMN1929/soilmap.pdf	1929	N		This is a georeferenced image pulled from a historic source and no GIS data maybe be availible.
Hennepin/Ramsey Historic Soil Survey	Digitized polygons of historic soil maps	Yes	Henn_Ramsey_Historic_Soil_Survey	From Source	Minnesota Geological Survey		2009	N		
Hillshade	Hillshade created from DEM	Yes	Hillshade_DEM_3m_m	Created	DNR LiDAR		2001	Y	2011	Create from updated DEM
Historic MWMO Planning Areas	Historic MWMO Planning Areas	Yes	Historic_Planning_Areas	Limited Info	MWMO			N		
Historic Subwatersheds	MWMO Historic	Yes	Historic_Sub_WS	Limited Info	MWMO			N		
Impaired Lakes 2014	MPCA's Impaired Lakes 2014	Yes	Impaired_Lakes_2018	From Source	MPCA	https://gisdata.mn.gov/dataset/env-impaired-water-2018	2014	Y	2018	
Impaired Streams 2015	MPCA's Impaired Streams 2015	Yes	Impaired_Streams_2018	From Source	MPCA	https://gisdata.mn.gov/dataset/env-impaired-water-2018	2014	Y	2018	
Land Use Land Class	Natural Areas from the Minnesota Land Cover Classification System	Yes	Land_Use_Land_Cover_2018	From Source	DNR	https://gisdata.mn.gov/dataset/biota-landcover-mlccs	2014	Y	2018	

Lauderdale Existing Land Use	Lauderdale Existing Land Use	Yes	Lauderdale_Land_Use_Designations	Created	City of Lauderdale Draft Comprehensive Plan	p.38 https://lauderdalemn.org/vertical/sites/%7B5F73237E-9F78-407B-A785-DA0D9F5C945F%7D/uploads/2040_City_of_Lauderdale_Comprehensive_Plan_Final_Version.pdf	2008	Y	2017	
Lauderdale Pipe watersheds	Laderdale pipe watersheds	Yes	Lauderdale_Pipesheds_2018	Limited Info	City of Lauderdale			Y	2018	
Metro Collaborative Parks	Parks from local, state, and federal partners	Yes	Metro_Collaborative_Parks	From Source	MetroGIS	https://gisdata.mn.gov/dataset/us-mn-state-metrogis-bdry-metro-colabtiv-parks		Y	2020	This dataset contains parks/open spaces from cities, counties, regional partners, and federal entities.
Metro Collaborative Trails and Bikeways	Trails and bikeways from local, state, and federal partners	Yes	Metro_Collaborative_Trails	From Source	MetroGIS	https://gisdata.mn.gov/dataset/us-mn-state-metrogis-trans-metro-colabtiv-trails-bike		Y	2020	This dataset contains trails/bikeways from cities, counties, regional partners, and federal entities.
Metro Generalized Land Use Inventory 2016	Land Use data from 2010	Yes	GeneralizedLandUse2016	From Source	Metropolitan Council	https://gisdata.mn.gov/dataset/us-mn-state-metc-plan-generl-lnduse2016	2010	Y	2016	
Metro Mosquito Control District Wetlands	wetlands and wet areas tracked by the Metropolitan Mosquito Control District (MMCD) as potentially holding water long enough to support mosquito larval development	Yes	Mosquito_Control_District_Wetlands_2017	From Source	MMCD	https://gisdata.mn.gov/dataset/org-mmcd-env-wetland-mosquito-wet-areas	2014	Y	2017	
Metro Open Space Parcels	Parcels selected from the current Metro Parcels with land use categories of "Parks, Forest and Wildlife Refuge", "Public Cemetery", or "Private Cemetery".	Yes	Metro_Open_Space_Parcels	Created	Minneapolis Community Planning and Economic Development Department - Planning Division	http://www2.minneapolismn.gov/www/groups/public/@cped/documents/webcontent/convert_286387.pdf	2009	Y	2016	

Metro Planned Land Use	Regional Planned Land Use - Trin Cities Metropolitan Area	Yes	Metro_Planned_Land_Use	From Source	Metropolitan Council	https://gisdata.mn.gov/dataset/us-mn-state-metc-plan-pland-land-use	2014	Y	2020	This is an aggregated dataset that contains future land use for both 2030 and 2040 depending on the CTU.
Metro Regional Parks	Regional Park System in the Twin Cities Metropolitan Area	Yes	Regional_Parks	From Source	Metropolitan Council	https://gisdata.mn.gov/dataset/us-mn-state-metc-plan-parks-regional		Y	2018	This is a regional park layer that can be used to replace one of the georeferenced images in the Regional Parks and Trails Map
Mineapolis Trails	Minneapolis Trail System	Yes	Minneapolis_Ped_Bike_Trails	Created	City of Minneapolis	http://opendata.minneapolismn.gov/datasets/pedestrian-and-bicycle-trails?geometry=-93.784%2C44.891%2C-92.742%2C45.061	2014	Y	2015	
Minneapolis Future Land Use	Minneapolis Future Land Use	Yes	MPLS_Future_Land_Use_2040	Created	City of Minneapolis	http://opendata.minneapolismn.gov/datasets/future-land-use-and-built-form-2040		Y	2019	Or this Future Land Use and Built Form 2040: http://opendata.minneapolismn.gov/datasets/515048a2bf6e4025b33dde3466e3b1ef_0
Minneapolis Mask	Mask created by erasing the city borders of Minneapolis out of a larger polygon	Yes	MPLS_mask	Created				Y	2019	Create from updated city boundaries
Minneapolis Neiborhoods	Minneapolis Neiborhoods	Yes	Minneapolis_Neighborhoods	Created	City of Minneapolis	http://opendata.minneapolismn.gov/datasets/minneapolis-neighborhoods		Y	2019	
Minneapolis Parks	Mpls city parks	Yes	Minneapolis_Parks	Created	City of Minneapolis	http://opendata.minneapolismn.gov/datasets/parks?geometry=-93.412%2C44.946%2C-93.151%2C44.988	2014	Y	2015	Open Minneapolis Parks layer
Minneapolis Pipe watersheds	Small storm drain catchment areas within the City of Minneapolis	Yes	MPLS_Pipesheds_20200916	Created	City of Minneapolis Public Works Engineering Services	612-673-2965, karl.westermeyer@ci.minneapolis.mn.us	2002	Y	2020	

Minneapolis Storm Tunnel System	Minneapolis Storm Tunnel System	From Previous	MSP_StormTunnelSystem	Created	City of Minneapolis		2014	Y		Received new data from the city, but no metadata or tunnel conditions. This is a georeferenced image from a report. I was unable to locate the original or an update. Need "Storm Tunnel System" layer to recreate.
Minor Roads	Minor streets/roads for zoomed-in maps	Yes	Minor_Roads	From Source	MnDot	https://gisdata.mn.gov/dataset/trans-streets			2020	Used for street names in the Hillside land use maps
Mississippi River Recreation Areas	Mississippi River Recreation Areas	No			National Park Service	https://www.nps.gov/miss/planyourvisit/maps.htm https://www.nps.gov/miss/planyourvisit/missrivercomp.htm https://www.nps.gov/miss/planyourvisit/upload/CompanionMaps-final-Section-B.pdf	2014	Y		This is a georeferenced screenshot of a map in the first link. Need "Mississippi National River and Recration Area", "State, Regional, and Local Parks", "National Park Service Facilities", "Bike, Pedestrian, and River Trails", "Scenic Byways", "Transit Lines", "Transit Points", "Points of Interest", "Boating Infrastructure", "Powerlines", "Navigation Markers", "River Mile Markers", and "Dams" layers to recreate.
MnDOT 2011 Roads	MnDOT road centerlines	Yes	Metro_Roads	From Source	Metropolitan Council	https://gisdata.mn.gov/dataset/us-mn-state-metc-trans-fnctnl-cls-rds	2011	Y	2019	This was probably misnamed in the database. Should be MnDOT2011_rds.
Modeling Initiatives Status	Modeling areas within MWMO and their model status	Yes	Modeling_Initiatives_Status	Created - very basic	MWMO				2020	

MPCA Permits	MPCA discharge and storm water permit points	Yes	Wastewater_Discharge_Permits	From Source	MPCA	https://gisdata.mn.gov/dataset/util-wastewater-discharge	2014	Y	2019	
MPCA What's In My Neighborhood Sites	Location of facilities with discharge permits/violations	Yes	Whats_In_My_Neighborhood	From Source	MPCA	https://gisdata.mn.gov/dataset/env-my-neighborhood	2014	Y	2017	
Mpls Flood Graphics	Layer created to be text background for labels in 1997 Flood Areas Map	From Previous	MPLS_1997_Flood_Anno_Backgrounds	Created	City of Minneapolis		2014	N		
Municipalities	Municipalities within MWMO	Yes	Municipalities_MWMO	Edited from Source	Metropolitan Council	https://gisdata.mn.gov/dataset/us-mn-state-metc-bdry-metro-counties-and-ctus	2008	Y	2020	Metadata name: political_jurisdiction_area-municipality_metrogis, This is a polygon dataset for county boundaries as well as for city, township and unorganized territory (CTU) boundaries in the Twin Cities 7-county metropolitan area. The linework for this dataset comes from individual counties and is assembled by the Metropolitan Council for the MetroGIS community.
MWMO Boundary	MWMO Boundary	Yes	MWMO_Boundary	Limited Info	MWMO		2014	Y	2014	No update provided yet.
MWMO Draft Watersheds	MWMO Draft Watersheds	Previous	MWMO_DRAFT_Watersheds	Limited Info	MWMO		2014	N		dataset for this
MWMO Monitoring Sites	Water quantity and quality monitoring sites	Yes	MWMO_Monitoring_Sites_Sept2020	Created	MWMO		2014	Y	2020	Received 2020 update and updated map 5/26/2020
Project Corridors	Capital Improvement Project lines	No			MWMO	Various, see pages 25-27 of MWMO Plan Text	2014	Y		
Project Points	Capital Improvement Project points	No			MWMO	Various, see pages 25-27 of MWMO Plan Text	2014	Y		
Projects	Capital Improvement Project polygons	No			MWMO	Various, see pages 25-27 of MWMO Plan Text	2014	Y		

Ramsey Soil Pages 1916	Historic soils map for Ramsey County - image	Yes	Ramsey_Soil_Pages_1916	Created	NRCS	https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/minnesota/rameyMN1916/soil_map.pdf	1916	N		This is a georeferenced image pulled from a historic source and no GIS data maybe be availible.
Regional Trail Search Corridors	Search corridors for new regional trails	Yes	Regional_Trail_Search_Corridors	From Source	Metropolitan Council	https://gisdata.mn.gov/dataset/us-mn-state-metc-trans-regional-trails-search-cor		Y	2019	
Regional Trails	Regional trails	Yes	Regional_Trails	From Source	Metropolitan Council	https://gisdata.mn.gov/dataset/us-mn-state-metc-trans-regional-trails-exst-plan		Y	2018	
St. Anthony Pipe watershed	St. Anthony Pipe watershed	Yes	StAnthony_Subwatersheds	Limited Info	St. Anthony Village	https://www.savmn.com/190/Planning		Y		Previous report states that the Village's storm sewer system in not available electronically
St. Anthony Village Current Land Use	St. Anthony Village Current Land Use	Yes	StAnthony_Current_Land_Use	Limited Info	St. Anthony Village	https://www.savmn.com/DocumentCenter/View/979/St-Anthony-2040-Comprehensive-Plan	2008	Y	2010	This is a georeferenced image from a report. The updated report is linked. Need "Current Land Use" layer to update. Used "Generalized Land Use 2016" as replacement.
St. Paul Recreation Centers	Recreation Centers as points created from Metro Collaborative Parks layer	Yes	St_Paul_Recreation_Centers	Created	MetroGIS			Y	2020	
Stream Tunnel	Bassett Creek Watershed Managemet Commission Streams and Tunnel digitized from aerial photography	From Previous			Barr Engineering Company for BCWMC		2008			
Supplement Area		Yes	Supplemental_Area	Limited Info	MWMO			N		This layer outlines a small section of the northern portion of the MWMO boundary. It's metadata says it's the municipal boundaries of Anoka County

Surface Water Centerline	Surface water course centerlines	Yes	SurfaceWater_Centerlines	From Source	DNR	https://gisdata.mn.gov/dataset/water-dnr-hydrography		Y	2020	
Surficial Geology	Surficial Geology of the Twin Cities	Yes	Surficial_Geology_Strata	From Source	Minnesota Geological Survey	https://conservancy.umn.edu/handle/11299/58220	2007	N		
Water Use Permits	Permitted water use	Yes	Surface_Water_Use_Permits	Created	DNR	https://www.dnr.state.mn.us/waters/watermgmt_section/appropriations/wateruse.html https://files.dnr.state.mn.us/waters/watermgmt_section/appropriations/mpars_wa_permits_installations_uses.lpk	2014	Y	2019	
Wellhead Protection Areas	Surface and subsurface area surrounding a public water supply well or well field that supplies a public water system	Yes	Wellhead_Protection_Areas	From Source	MDH	https://gisdata.mn.gov/dataset/water-mgmnt-area-surface-water	2013	Y	2019	

Appendix K

Public Hearing Comments and Responses

MWMO Board of Commissioners Meeting July 13, 2021
MWMO Public Hearing on the 10 year Plan Update - Comments Received

The following public comments were received at the MWMO's Public Hearing. People chose to submit their comments via the chat and MWMO staff read them out loud. Their comments were received and filed. An additional comment that was received following the meeting via email is also included.

Name / Affiliation	Date Received	Public Hearing Comment	MWMO's Staff Response to Comment
Andrew Blackbird, Red River Water Warriors, 501 3rd Ave NE, Dilworth MN 56529	7/13/2021	1) Given the severe drought conditions this year, what is the Mississippi Watershed doing to help the Mississippi River stay as healthy as it can during this time? 2) How is letting Enbridge take 5 to 8 billion gallons of Mississippi water contributing to the health of the river? 3) Ok so then my comment is to please stop removing water from the Mississippi River for oil and fracking Willow River has already had a frack out and we want Enbridge out! Stop Line 3	The MWMO is a non-regulatory entity. We can comment on agency permits and plans that have a public review period, but we have no authority to require any changes. Our mission focuses on improving water quality, reducing flooding, and improving habitat As a part of stormwater related management, we promote and implement reuse projects and initiatives that can provide additional resilience in the watershed to drought conditions while reducing potable water demand. Our work primarily focuses on 14 miles of the Mississippi River within the Watershed. We recognize this area as a part of the larger Mississippi River system and when possible undertake local studies that are also relevant for upstream and downstream communities. We would recommend speaking directly with the agencies issuing the permits to resolve any Mississippi River appropriations issues.
Wendy Darst	7/13/2021	Thanks for the comment periods for on your 10-year plan, however, they came before this historic period of drought and the negligence of the Walz administration, PUC, MPCA, and Army Corps of Engineers in protecting Mississippi. How are you going to protect the watershed here? Thank you for including our comments on the record. It may be frustrating for commissioners, however many of us see Mississippi not as a "resource" to be manipulated and used but as a natural entity under attack by "landowners" such as Enbridge and Northern Metals. Mississippi, and all of us, have been failed by the DNR and other regulatory bodies, showing their true purpose is rubber stamping the business of climate catastrophe. I appreciate the work of MWMO, and the water use plans. I hope Fridley and Columbia Heights are good stewards as well- but Mississippi is one entity. The headwaters lead here, and through 10 more states. There is water now, but if the "businesses" at the Headwaters continue frac-ing out the tributaries and decimating the watershed it will affect us all.	The MWMO is a non-regulatory entity. We can comment on agency permits and plans that have a public review period, but we have no authority to require any changes. As a part of stormwater related management, we promote and implement reuse projects and initiatives that can provide additional resilience in the Watershed to drought conditions while reducing potable water demand. The MWMO is a part of a larger upstream and downstream river system. It is important to balance private and public use of the river in a manner that maintains the ecological integrity of the river and other systems it supports. The MWMO is collaborating with other public and private organizations to implement a restorative systems-based approach that helps to transition economic growth in this direction. **See Plan page 67 and Table 14 and Restorative Development educational workshops : https://restorativedevelopmentpartnership.org/about/partnership-meetings/**
Seth Fine	7/13/2021	Per the earlier question: page 211 of the proposed 10-year Plan includes areas for strategic prioritization of issues and goals. Emergency Preparedness (EP) and Emerging Issues (EI) pertaining to climate and change or severe drought are either not rated or rated low or medium priority. This seems unacceptable in the face of current and looming water access, availability and quality issues affecting us citizens and voters in the watershed. How can this be re-prioritized given the immediacy of global and regional warming, and the federal and state commitments to green infrastructure?	The MWMO called out climate change in our prior 2011 - 2021 plan allowing us to shape outcomes of our projects and programs in ways that have started to offset the impacts of climate change. The MWMO considers equity and climate change as more comprehensive issues that will permeate throughout all aspects of our organization and the work we do. As such, additional goals or strategies on these topics may be added to Table 27 as staff and the MWMO Board develop the plans and policies needed to fully address these topics. While the MWMO does not currently have an equity or climate change plan we have been providing significant staff time and resources on direct implementation efforts that will address these issues. In 2016 the MWMO started working directly with other public and private organizations to implement a restorative development feasibility study, and a capital project that will directly address issues of inequity and climate change in the Watershed. This holistic systems-based work is set to continue during this 10-year plan. **See Plan page 67 and Table 14 and Restorative Development educational workshops : https://restorativedevelopmentpartnership.org/about/partnership-meetings/** In addition, we consider the impacts of climate change with most everything that we do. From our educational messaging, to plants we recommend for projects, to sizing of stormwater practices, we are constantly addressing climate change in our work.