

Appendix A

Joint Powers Agreement

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1 AMENDED AND RESTATED
2 JOINT POWERS AGREEMENT ESTABLISHING
3 THE PIONEER-SARAH CREEK WATERSHED MANAGEMENT COMMISSION
4

5 RECITALS

6 WHEREAS, on July 29, 1993, pursuant to statutory authority, the Cities of Corcoran,
7 Greenfield, Independence, Loretto, Maple Plain, Medina and Minnetrista, the Town of Watertown,
8 and the Hennepin Conservation District adopted a "Joint Powers Agreement to Protect and Manage the
9 Pioneer-Sarah Creek Watersheds" (the "Joint Powers Agreement"); and

10 WHEREAS, in 2000 the City of Corcoran withdrew from the Agreement; and

11 WHEREAS, in 2001 the Town of Watertown withdrew from the Agreement; and

12 WHEREAS, the Cities of Greenfield, Independence, Loretto, Maple Plain, Medina and
13 Minnetrista wish to amend and restate the Agreement's terms in this document.

14 NOW, THEREFORE, pursuant to the authority conferred upon the parties by Minn. Stat §§
15 471.59 and 103B.201, et seq., the parties to this Agreement do mutually agree as follows:

16 SECTION ONE
17 DEFINITIONS
18

19 For purposes of this Agreement, each of the following terms, when used herein with an initial
20 capital letter, will have the meaning ascribed to it as follows:

21 "Agreement" means the Joint Powers Agreement, as amended and restated in this document.

22 "Board" means the Board of Commissioners of the Commission.

23 "BWSR" means the Minnesota Board of Water and Soil Resources.

24 "Commissioner" means an individual appointed by a governmental unit to serve on the Board.

25 The term Commissioner shall include both the representative and alternate representative appointed to
26 serve on the Board.

27 "Pioneer-Sarah Creek Watershed" or "Watershed" means the area within the mapped area
28 delineated on the map filed with BWSR, as may be amended. A complete legal description defining
29 the boundary of the Pioneer-Sarah Creek Watershed is attached hereto and made apart hereof.

1 "Governmental Unit" means any signatory city or township,

2 "Member" means a governmental unit that enters into this Agreement.

3 "Watershed Management Organization ("WMO") means the organization created by this
4 Agreement, the full name of which is "Pioneer-Sarah Creek Watershed Management Commission." The
5 Commission shall be a public agency of its respective governmental units.

6 SECTION TWO
7 ESTABLISHMENT
8

9 The parties create and establish the Pioneer-Sarah Creek Watershed Management Commission.
10 The Commission membership shall include the Cities of Greenfield, Independence, Loretto, Maple Plain,
11 Medina and Minnetrista. In addition to other powers identified in this Agreement, the Commission shall
12 have all of the authority for a joint powers watershed management organization identified in Minn. Stat. §
13 103B.211.

14 SECTION THREE
15 PURPOSE STATEMENT
16

17 The purpose of this Agreement is to establish an organization within the Pioneer-Sarah Creek
18 Watershed to (a) protect, preserve, and use natural surface and groundwater storage and retention systems,
19 (b) minimize public capital expenditures needed to correct flooding and water quality problems, (c) identify
20 and plan for means to effectively protect and improve surface and groundwater quality, (d) establish more
21 uniform local policies and official controls for surface and groundwater management, (e) prevent erosion of
22 soil into surface water systems, (f) promote groundwater recharge, (g) protect and enhance fish and wildlife
23 habitat and water recreational facilities, and (h) secure the other benefits associated with the proper
24 management of surface and ground water, as identified in Minn. Stat. § 103B,201, including but not limited
25 to aesthetic values when owned by the public or constituting public resources, as defined in Minn. Stat. Ch.
26 116B.

27 The Commission's Members agree to (a) provide a forum for exchanging information in the
28 management of land use and land use techniques and control, (b) provide a forum for resolution of
29 intergovernmental disputes relating to management and protection of the Pioneer-Sarah Creek Watershed;

1 and (c) cooperate on a united basis on behalf of all units of government within the Pioneer-
 2 Sarah Creek Watershed with all other levels of government for the purpose of facilitating natural
 3 resource protection and management in the Watershed.

4 SECTION FOUR
 5 BOARD OF COMMISSIONERS
 6

7 4.1. Appointment. The governing body of the Commission shall be its Board. Each
 8 Member shall be entitled to appoint one representative to serve on the Board and one alternate who
 9 may sit when the representative is not in attendance, and said representative or alternative
 10 representative shall be called a "Commissioner." It is expected that each Member ensure that its
 11 Commissioner will attend each meeting of the Board.

12 4.2. Term. Each Member shall determine the term length for its Commissioner's
 13 appointment to the Board. The representatives to the Commission shall serve at the pleasure of the
 14 governing body of the Member appointing such representative to the Commission. The Commission
 15 and its Members shall fill all Board vacancies pursuant to Minn. Stat. § 103B.227, subd. 1 and 2, as
 16 may be amended from time to time.

17 4.3. Compensation. Commissioners shall serve without compensation from the
 18 Commission, but this shall not prevent a Member from providing compensation to its Commissioner
 19 for serving on the Board.

20 4.4. Officers. No later than the first meeting in February of each year, the Commission
 21 shall elect from its membership a chairperson, a vice-chairperson, a treasurer and a secretary and such
 22 other officers as it deems necessary to reasonably carry out the purposes of this Agreement. No
 23 Commissioner may be elected to more than one office. All officers shall hold office for terms of one
 24 year and until their successors have been elected by the Commission. An officer may be reelected to
 25 the same office for unlimited terms. A vacancy in an office shall be filled from the Board membership
 26 by election for the remainder of the unexpired term of such office. The officers' duties include the
 27 following:

28 A. Chairperson. The Chairperson shall preside at all Board meetings and shall have
 29 all the same privileges of discussion, making motions and voting, as do other

Commissioners. The Chairperson may delegate certain responsibilities to the Executive Secretary as necessary to carry out the duties of the office.

B. Vice-Chairperson. The Vice-Chairperson shall, in the absence or disability of the Chairperson, perform the duties and exercise the powers of the Chairperson.

C. Treasurer. The Treasurer shall have the custody of the funds and securities of the Commission and shall keep full and accurate accounts of receipts and disbursements in books belonging to the Commission and shall deposit all monies and other valuable effects in the name and to the credit of the Commission in such depository as may be designated by the Commission. He/she shall disburse funds of the Commission as approved by the Commission and shall render to the Commission at regular meetings, or as the Board may request, an account of all his/her transactions as Treasurer and of the financial condition of the Commission. The Treasurer may delegate certain duties to the Executive Secretary as necessary to carry out the duties of the office.

D. Secretary. The Secretary shall attend all Board meetings, shall act as clerk of such meetings, and shall record all votes and the minutes of all proceedings. He/she shall give notice of all Board meetings. The Secretary may delegate certain duties to the Executive Secretary as necessary to carry out the duties of the office.

4.5. Executive Secretary. The Commission may appoint an Executive Secretary to coordinate activities of the Commission, accept delegated duties by the Commission officers, and accept business duties not assigned to officers. All notices to the Commission shall be delivered or served at the office of the Executive Secretary.

4.6. Quorum and Voting. A majority of all Commissioners with voting privileges shall constitute a quorum. Once a quorum is present, a majority vote is required for approval on an action, unless as provided otherwise in this Agreement.

4.7. Meetings. The Board shall schedule meetings at least quarterly (every three months) on a uniform day and place selected by the Commission. Written notice of the location and time of all Commission meetings shall be sent to all Commission representatives and alternate representatives and to the Clerk of each Member. Special meetings may be held at the call of the Chairperson or by any three Commissioners by giving not less than 72 hours written notice of the time, place and purpose of such meeting.

SECTION FIVE
COMMISSION POWERS AND DUTIES

5.1. Watershed Management Plan. The Commission shall develop a watershed management plan including a capital improvement program in conformance with Minn. Stat. § 103B.231. The Commission shall adopt the plan within 120 days after BWSR's approval of the plan. After adoption, the Commission shall implement the watershed management plan and enforce the regulations set out in the plan. A copy of the adopted plan shall be filed with the clerk of each Member governmental unit.

5.2. Local Water Management Plans. The Commission shall review Members' local water management plans as required by Minn, Stat. § 103B.235, subd. 3.

5.3. Review Services.

A. Where the Commission is authorized or requested to review and make recommendations on any matter, the Commission may charge a reasonable fee for such review services. The Commission's standard fee schedule, as amended from time to time, will be a part of the Commission's Rules.

B. The Commission may charge an additional fee when it determines that a particular project will require extraordinary and substantial review services. Before undertaking such review services, the Commission shall provide the party to be charged the additional fee with written notice of the services to be performed and the additional fee therefor. Unless said party objects within 5 business days of receipt of such written notice to the amount of the additional fee to be charged, such review services shall be performed and the party shall be responsible for the cost thereof. If said party objects to the proposed additional fee for such services within 5 business days and the party and the Commission are unable to agree on a reasonable alternative amount for review services, such extraordinary and substantial review services shall not be undertaken by the Commission.

The Members recognize that from time to time the Commission provides review services regarding a violation under the Minnesota Wetland Conservation Act, and that there currently is no statutory mechanism in place that allows the Commission to recover its costs from the wetland violator

1 for these review services. Therefore, when the Commission provides review services regarding a violation
2 under the Minnesota Wetland Conservation Act, the Commission may seek reimbursement for these
3 services from the Member where the subject property is located.

4 C. Upon request of any Member, the Commission shall review and evaluate any
5 dispute between the Member and other unit(s) of government regarding land use and natural resource
6 protection and management.

7 5.4 Public Participation.

8 A. Technical Advisory Committee. A Technical Advisory Committee ("TAC") to
9 the Commission is hereby created. TAC members and one or more alternate members shall be appointed by
10 the governing body of each Member. TAC members may be, but need not be, Commissioners. TAC
11 members shall serve at the pleasure of the governing body of each Member that appoints them and are
12 not required to meet statutory qualifications for Commissioners. TAC members will undertake
13 projects/tasks as requested or assigned to the TAC by the Commission and may participate in meetings
14 of the Commission pertaining to those assigned projects/tasks.

15 B. Citizen Advisory Committee. If a need is determined by the Commission, the
16 Commission will establish a Citizen Advisory Committee to the Commission, particularly to review and
17 comment on specific projects undertaken by the Commission pursuant to the Watershed Management
18 Plan.

19 5.5. Rules. The Commission shall adopt rules for (a) conducting its business, including but
20 not limited to additional duties of the Commission's officers, (b) the scope of responsibilities of the
21 Technical Advisory Committee and the Citizen Advisory Committee, if one is established, and (c)
22 preparing the annual work plan.

23 5.6. Contracts. The Commission may make such contracts, and enter into any such
24 agreements, as it deems necessary to make effective any power granted to it by this Agreement. No
25 Commissioner shall receive a direct financial benefit from any contract made by the Commission. Every
26 contract for the purchase or sale of merchandise, materials or equipment by the Commission shall be let
27 in

1 accordance with the Uniform Municipal Contracting Law (Minn. Stat. § 47L345) and the Joint Exercise of
2 Powers statute (Minn. Stat. § 47L59). In accordance with Minn. Stat. § 471.59, subd. 3, contracts let and
3 purchases made under this Agreement shall conform to the statutory requirements applicable to the
4 Member cities with a population over 2,500.

5 5.7. Employment. The Commission may contract for services, may use staff of other
6 governmental agencies, may use staff of the Members and may employ such other persons as it deems
7 necessary. Where staff services of a Member are utilized, such services shall not reduce the financial
8 contribution of such Member to the Commission's operating fund unless utilization of staff service is
9 substantial and the Commission so authorizes.

10 5.8. Public/Private Organizations. The Commission may cooperate or contract with the State
11 of Minnesota or any subdivision thereof or federal agency or private or public organization to
12 accomplish the purposes for which it is organized.

13 5.9. Annual Financial, Activity and Audit Reports; Newsletter. The Commission shall submit
14 to its Members and BWSR a financial report, an activity report and an audit report for the preceding
15 fiscal year, in compliance with state law. The Commission shall publish and distribute an annual
16 newsletter in compliance with state law. The Commission shall transmit to the clerk of each Member
17 copies of the reports/newsletter in a format ready for publication. Each Member shall
18 publish/distribute the reports/newsletter as it deems necessary. All of the Commission's books, reports
19 and records shall be available for and open to examination by any Member at all reasonable times.

20 5.10. Gifts, Grant, Loans. The Commission may, within the scope of this Agreement, accept
21 gifts, apply for and use grants or loans of money or other property from the United States, the State of
22 Minnesota, a unit of government or other governmental unit or organization, or any person or entity for the
23 purposes described herein; may enter into any reasonable agreement required in connection therewith;
24 may comply with any laws or regulations applicable thereto; and may hold, use and dispose of such
25 money or property in accordance with the terms of the gift, grant, loan or agreement relating thereto.

1 5.11. Boundary Change in the Pioneer-Sarah Creek Watershed.

2 A. Enlargement. Proceedings for the enlargement of the Pioneer-Sarah Creek
3 Watershed shall be initiated by a request from affected Member(s) to the Commission, or as mandated by
4 law. Such request should include a map and legal description of the affected area. In reviewing such a
5 request, the Commission should consider, among other things, (a) whether the affected area is
6 contiguous to the existing Pioneer-Sarah Creek Watershed, (b) whether the affected area can be feasibly
7 administered by the Commission; and (c) the reasons why it would be conducive to the public health and
8 welfare to add the area to the existing Pioneer-Sarah Creek Watershed. Upon deliberation, if it appears to
9 the Commission that the enlargement of the Watershed as requested would be for the public welfare and
10 public interest and the purpose of resource management would be served, or that in fact the enlargement
11 is mandated by law, the Commission shall by its findings and order enlarge the Pioneer-Sarah Creek
12 Watershed and file a copy of said findings and order with the appropriate governmental offices.

13 B. Transfer of Territory. Proceedings to transfer territory that is within the
14 Pioneer-Sarah Creek Watershed to the jurisdiction of another watershed management organization or a
15 watershed district shall be initiated by a request from affected Member(s) to the Commission, or as
16 mandated by law. Such request should include a map and legal description of the affected area. Upon
17 deliberation, if it appears to the Commission that the transfer of territory as requested would be for the
18 public welfare and public interest and the purpose of resource management would be served, the
19 Commission shall by its findings and order change the Pioneer-Sarah Creek Watershed boundaries
20 accordingly and file a copy of said findings and order with the appropriate governmental offices.

21 5.12. Subdistricts. The Commission may define and designate drainage subdistricts within the
22 Watershed and shall have authority to separate the Watershed into such different subdistricts and to
23 allocate capital improvement costs to a subdistrict area if that subdistrict is the only area that materially
24 benefits from the capital improvement.

25 5.13. Monitor Water Quality. In connection with its water management plan, the Commission
26 will establish a comprehensive water quality-monitoring plan for lakes and streams within the Watershed.

1 The Commission will also establish goals for judging the adequacy of its water quality protection
2 programs.

3 5.14 Ratification. The Commission may, and where required by this Agreement shall, refer
4 matters to the governing bodies of the Members for ratification. Within 60 days, the governing bodies of
5 the Members shall take action upon any matter referred for ratification.

6 5.15. Statutory Powers. The Commission may exercise all other powers necessary and
7 incidental to the implementation of the purposes and powers set forth herein and as outlined and authorized
8 by Minn. Stat. §§ 103B.201, et seq,

9 SECTION SIX
10 FINANCIAL MATTERS
11

12 6.1. Depositories/Disbursements. The Commission may collect and receive money and
13 services subject to the provisions of this Agreement from the parties and from any other sources approved
14 by the Commission and it may incur expenses and make expenditures and disbursements necessary
15 and incidental to the effectuation of the purposes of this Agreement. The Board shall designate a
16 national, state, or private bank or banks as a depository of Commission funds, Funds may be expended
17 by the Commission in accordance with procedures established herein. Orders, checks and drafts shall
18 be signed by two officers.

19 6.2. General Administration. Each voting Member agrees to contribute each year to a general
20 fund to be used for general administration purposes including, but not limited to, salaries, rent, supplies,
21 development on an overall plan, insurance, bonds, and to purchase and maintain devices to measure
22 hydrological and water quality data. The funds may also be used for normal maintenance of facilities
23 and capital improvements. The annual contribution by each voting Member shall be based on its share
24 of the taxable market value of all real property within the Watershed.

25 6.3. Budget Approval and Appeal Process. On or before July 1 of each year, the Board shall
26 adopt a budget for the following calendar year for the purpose of providing funds to conduct the
27 Commission's business in accordance with its annual work plan, Budget approval shall require a

1 majority vote of all Commissioners eligible to vote. At least 45 days before each Member governmental
2 unit must certify its levy to Hennepin County, the Commission shall certify the budget to the clerk of each
3 Member governmental unit together with a statement of the proportion of the budget to be provided by
4 each Member. The schedule of payments by the Members shall be determined by the Board in such a
5 manner as to provide for an orderly collection of the funds needed.

6 The governing body of each Member agrees to review the budget, and the Board shall upon notice
7 from any Member received prior to August 15, hear objections to the budget, and may amend the budget
8 (except the fee due cannot be increased), and then give notice to the Members of any and all
9 modifications or amendments.

10 SECTION SEVEN
11 CAPITAL IMPROVEMENT PROGRAM
12

13 7.1. Assessments. If a capital improvement ordered by the Commission may result in payment
14 from any Member, or if a capital improvement ordered by the Commission may result in a levy by a
15 Member against privately or publicly owned land within the Watershed, said capital improvement
16 shall follow the statutory procedure outlined in Minn. Stat. Ch. 429, except as herein modified.

17 7.2. Preliminary Reports/Public Hearings. For those improvements initiated by the
18 Commission or so designated in the Commission's watershed management plan to be constructed by the
19 Board, the Board shall secure from its engineers or some other competent person a preliminary report
20 advising it whether the proposed improvement is feasible and as to whether it shall best be made as
21 proposed or in connection with some other improvement and the estimated cost of the improvement as
22 recommended.

23 The Board shall then hold a public hearing on the proposed improvement after mailed notice to the
24 clerk of each Member governmental unit within the Watershed. The Commission shall not be required to
25 mail or publish notice except by said notice to the clerk, Said notice shall be mailed not less than 45
26 days before the hearing, shall state the time and place of the hearing, the general nature of the
27 improvement, the estimated total cost and the estimated cost to each Member governmental unit. The

1 Board may adjourn said hearing to obtain further information, may continue said hearing pending
2 action of the Member governmental units or may take such other action as it deems necessary to carry out
3 the purpose of this Commission.

4 A resolution setting forth the order for a capital improvement project shall require a favorable vote
5 by (a) at least two-thirds of all Commissioners eligible to vote, and (b) all Commissioners representing
6 Members who will directly benefit from the project. In all cases other than to order a capital improvement
7 project, a majority vote of all Commissioners eligible to vote shall be sufficient to adopt an action. The
8 order shall describe the improvement, shall allocate in percentages the cost between the Member
9 governmental units, shall designate the engineers to prepare plans and specifications, and shall designate
10 the Member who will contract for the improvement.

11 After the Board has ordered the improvement or if the hearing is continued while the Member
12 governmental units act on said proposal, it shall forward said preliminary report to all Member
13 governmental units with an estimated time schedule for the construction of said improvement. The Board
14 shall allow an adequate amount of time, and in no event less than 45 days, for each Member
15 governmental unit to conduct hearings, in accordance with the provisions of the aforesaid Chapter 429 or
16 the charter requirements of any Member city, or to ascertain the method of financing which said Member
17 governmental unit will utilize to pay its proportionate share of the costs of the improvement. Each Member
18 governmental unit shall ascertain within a period of 90 days the method it shall use to pay its proportionate
19 share of the costs.

20 If the Commission proposes to use Hennepin County's bonding authority as set forth in Minn. Stat.
21 § 103B.251, or if the Commission proposes to certify all or any part of a capital improvement to Hennepin
22 County for payment, then and in that event all proceedings shall be carried out in accordance with the
23 provisions set forth in said Section 103B,251.

24 The Board shall not order and no engineer shall prepare plans and specifications before the Board
25 has adopted a resolution ordering the improvement. The Board may direct one of its Members to prepare
26 plans and specifications and order the advertising for bids upon receipt of notice from each Member

1 governmental unit who will be assessed that it has completed its hearing or determined its method of
2 payment or upon expiration of 90 days after the mailing of the preliminary report to the Members.

3 7.3. Appeals/Arbitration. Any Member governmental unit being aggrieved by the Board's
4 determination as to the cost allocation of said capital improvement shall have 30 days after the Commission
5 resolution ordering the improvement to appeal said determination. Said appeal shall be in writing and shall
6 be addressed to the Board asking for arbitration, The determination of the Member's appeal shall be
7 referred to a Board of Arbitration. The Board of Arbitration shall consist of three persons; one to be
8 appointed by the Board of Commissioners, one to be appointed by the appealing Member governmental
9 unit, and the third to be appointed by the two so selected. In the event the two persons so selected do not
10 appoint the third person within 15 days after their appointment, then the Chief Judge of the Hennepin
11 County District Court shall have jurisdiction to appoint, upon application of either or both of the two earlier
12 selected, the third person to the Board of Arbitration. The third person selected shall not be a resident of
13 any Member governmental unit and if appointed by the Chief Judge said person shall be a person
14 knowledgeable in the subject matter. The arbitrators' expenses and fees, together with the other expenses,
15 not including attorney fees, incurred in the conduct of the arbitration shall be divided equally between the
16 Commission and the appealing Member, Arbitration shall be conducted in accordance with the Uniform
17 Arbitration Act, Minn. Stat. Ch. 572,

18 7.4. Contracts for Capital Improvements. All contracts which are to be let as a result of the
19 Board ordering a capital improvement, and for which two or more Member governmental units shall be
20 responsible for the costs, shall be let in accordance with the provisions of Minn. Stat, § 429.041. The
21 bidding and contracting of said work shall be let by any one of the Member governmental units, as ordered
22 by the Board, after compliance with the statutory requirements. Contracts and bidding procedures shall
23 comply with the legal requirements applicable to statutory cities.

24 The Commission shall not have the authority to contract in its own name for any improvement
25 work for which a special assessment will be levied against any private or public property under the
26 provisions of Chapter 429 or under the provisions of any Member city charter. These contracts shall be

1 awarded by action of the governing body of a Member and shall be in the name of a Member
2 governmental unit. This section does not preclude the Commission from proceeding under Minn. Stat. §
3 103B.251.

4 7.5. Contracts with Other Governmental Bodies. The Commission may exercise the powers
5 set forth in Section 7.4 but said contracts for a capital improvement shall require a majority vote of all
6 Commissioners eligible to vote.

7 7.6. Supervision. All improvement contracts shall be supervised by the entity awarding the
8 contract. The Commission staff shall also be authorized to observe and review the work in progress and the
9 Members agree to cooperate with the Commission staff in accomplishing its purposes. Representatives of
10 the WMO shall have the right to enter upon the place or places where the improvement work is in
11 progress for the purpose of making reasonable tests and inspections, The Commission staff shall report and
12 advise and recommend to the Board on the progress of the work,

13 7.7. Land Acquisition. The Commission shall not have the power of eminent domain and shall
14 not own any interest in real property. All interests in lands shall be held in the name of the Member wherein
15 said lands are located.

16 7.8. Capital Improvement Fund. The Commission shall establish an improvement fund or
17 funding mechanism for each capital improvement project. The Commission may fund all or part of the cost
18 of a capital improvement contained in the capital improvement program of the plan in accordance with
19 Minn. Stat. § 103B.251, The Commission and Hennepin County may establish a maintenance fund to be
20 used for normal and routine maintenance of an improvement constructed in whole or in part with money
21 provided by Hennepin County pursuant to Minn, Stat, § 103B.251. The levy and collection of an ad
22 valorem tax levy for an improvement, payment of bonds, or maintenance shall be by Hennepin County
23 based upon a tax levy resolution adopted by a majority vote of all eligible Members of the Board and
24 remitted to the County on or before the date prescribed by law each year. If it is determined to levy for
25 maintenance, the Commission shall be required to follow the hearing process established by Minn. Stat.

Ch. 103D. Mailed notice shall also be sent to the clerk of each Member governmental unit at least 30 days before the hearing.

7.9. Capital Improvement Cost Allocation.

A. All costs of improvements designated in the Board's adopted watershed management plan for construction by the Board, which the Board determines will benefit only one Member, shall be paid for entirely by that Member.

B. All costs of improvements designated in the Board's adopted watershed management plan for construction by the Board, which the Board determines benefit more than one Member, shall be apportioned by the Board by the following bases:

- (1) A negotiated amount to be arrived at by the Members who have lands in the subdistrict responsible for the capital improvement; or
- (2) On the basis of each Member's share of the taxable market value of all real property within the Watershed; or
- (3) Capital costs allocated under option (2) above may be varied by the Commission by a favorable vote by (a) at least two-thirds of all Commissioners eligible to vote and (b) all Commissioners representing Members who will directly benefit from the project, if (i) any Member community receives a direct benefit from the capital improvement which benefit can be defined as a lateral as well as a trunk benefit, or (ii) the capital improvement provides a direct benefit to one or more Members which benefit is so disproportionate as to require in a sense of fairness a modification in the formula.

C. If the project is constructed and financed pursuant to Minnesota Statutes 103B.251, the Members understand and agree that said costs will be levied on all taxable property in the watershed as set forth in the statute.

SECTION EIGHT WITHDRAWAL FROM AGREEMENT

Withdrawal of any Member may be accomplished by filing written notice with the Commission and the other Members 60 days before the effective date of withdrawal. No Member may withdraw from this Agreement until the withdrawing Member has met its full financial obligations for the year of withdrawal and prior years.

SECTION NINE

DISSOLUTION OF COMMISSION

9.2. In addition to the manner provided in Section 9.1 for termination, any Member may petition the Commission's Board to dissolve the Commission. Upon 90 days notice in writing to the clerk of each member governmental unit and to Hennepin County and BWSR, the Board shall hold a public hearing and upon a majority vote of all Commissioners eligible to vote, the Board may by Resolution determine to recommend that the Commission be dissolved. Said Resolution shall be submitted to each Member of each member governmental unit and if ratified by three-fourths of the governing bodies of all eligible Members, within 60 days, said Board shall dissolve the Commission allowing a reasonable time to complete its ongoing progress and to dispose of personal property owned by the Commission.

SECTION TEN

MISCELLANEOUS PROVISIONS

1 10.2. Member's Construction Projects that Will Affect Pioneer-Sarah Creek. Each Member
2 agrees that it will not directly or indirectly collect or divert any additional surface water to or from Pioneer-
3 Sarah Creek or its tributaries without approval from the Commission. Such approval may be granted
4 by the Commission for a Member to proceed with the construction or reconstruction of improvements
5 within the individual corporate Member's boundaries and at said Member's sole cost upon a finding (a)
6 that there is an adequate outlet, (b) that said construction is in conformance with the overall plan, and
7 (c) that the construction will not adversely affect other Members.

8 10.3. Member Vote Suspension for Failure to Contribute. Any Member who is more than 60
9 days in default in contributing its proportionate share to the general fund shall have the vote of its Board
10 representative suspended pending the payment of its proportionate share. Any Member who is more
11 than 60 days in default in contributing its proportionate share of the cost of any improvement to the
12 contracting Member shall upon request of the contracting Member have the vote of its Board
13 representative suspended, pending the payment of its proportionate share, Any Member whose Board
14 representative vote is under suspension shall not be considered as an eligible Member as such
15 membership affects the number of votes required to proceed on any matter under consideration by the
16 Board.

17 10.4. Amendment. The Commission may recommend changes and amendments to this
18 Agreement to the Members. Amendments shall be acted upon by the Members within 90 days of referral.
19 Amendments shall be evidenced by appropriate resolutions of the Members filed with the Commission and
20 shall, if no effective date is contained in the amendment, become effective as of the date all such
21 filings have been completed.

22 10.5. Termination of Prior Agreement. By executing this document, the parties hereby agree to
23 terminate the prior joint powers agreement, adopted July 29, 1993.

24 10.6. Counterparts. This Agreement and any amendment may be executed in several
25 counterparts and all so executed shall constitute one Agreement or amendment, binding on all of the parties
26 hereto notwithstanding that all of the parties are not signatory to the original or the same counterpart.

10.7. Effective Date. This Agreement shall be in full force and effect when all governmental units delineated in Section 2 have executed this Agreement. All Members need not sign the same copy.

10.8. Duration. This Agreement shall have an unlimited duration.

10.9. Statutory References. All statutory references include all future amendments.

Dated: 8/17/04

CITY OF GREENFIELD

By: Thomas G. Swann

Its Mayor

Attest: Krista Okerman

Its City Clerk

Dated: 2-24-04

CITY OF INDEPENDENCE

By: David D. Johnson

Its Mayor

Attest: Lori Hunsel

Its City Clerk

Dated: 3/9/2004

CITY OF LORETTO

By: Kent C. Torrey

Its Mayor

Attest: Kelly Bruninell

Its City Clerk

Dated: 3/23/04

CITY OF MAPLE PLAIN

By: Jack Vigoren

Its Mayor

Attest: Beverly Hudson

Its City Clerk

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Dated: 3-16-04

CITY OF MEDINA

By:

Its Mayor

Attest:

Its City Clerk

Dated: 3/15/04

CITY OF MINNETRISTA

By:

Its Mayor

Attest:

Its City Clerk

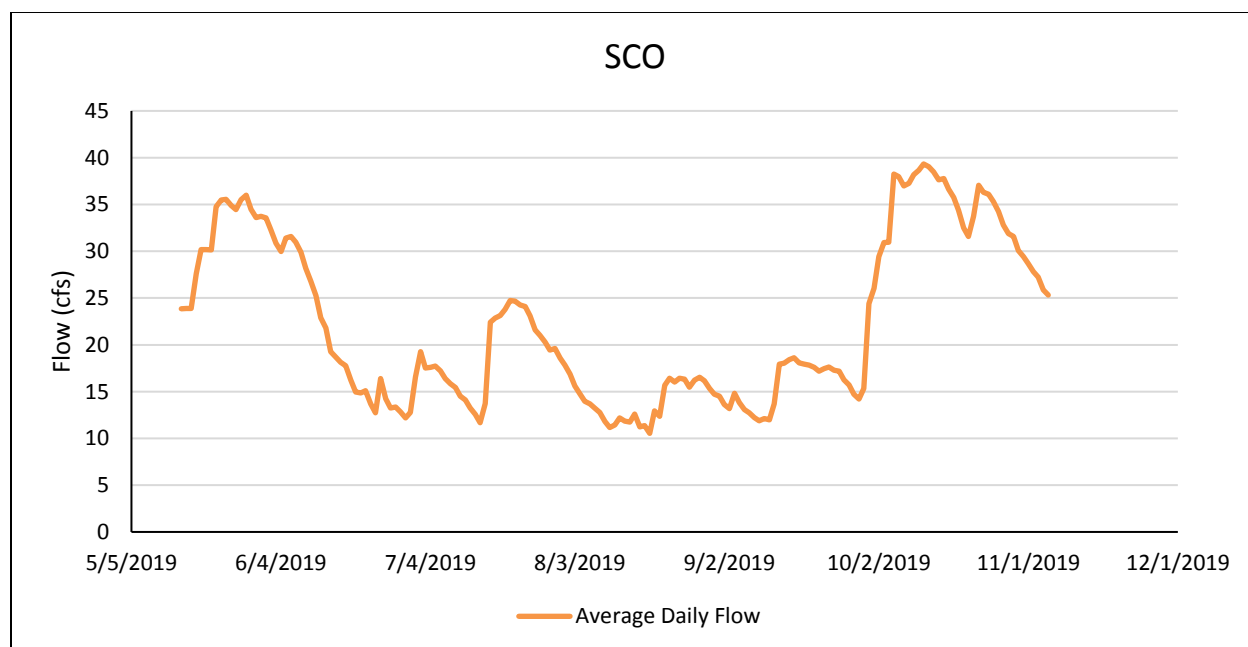
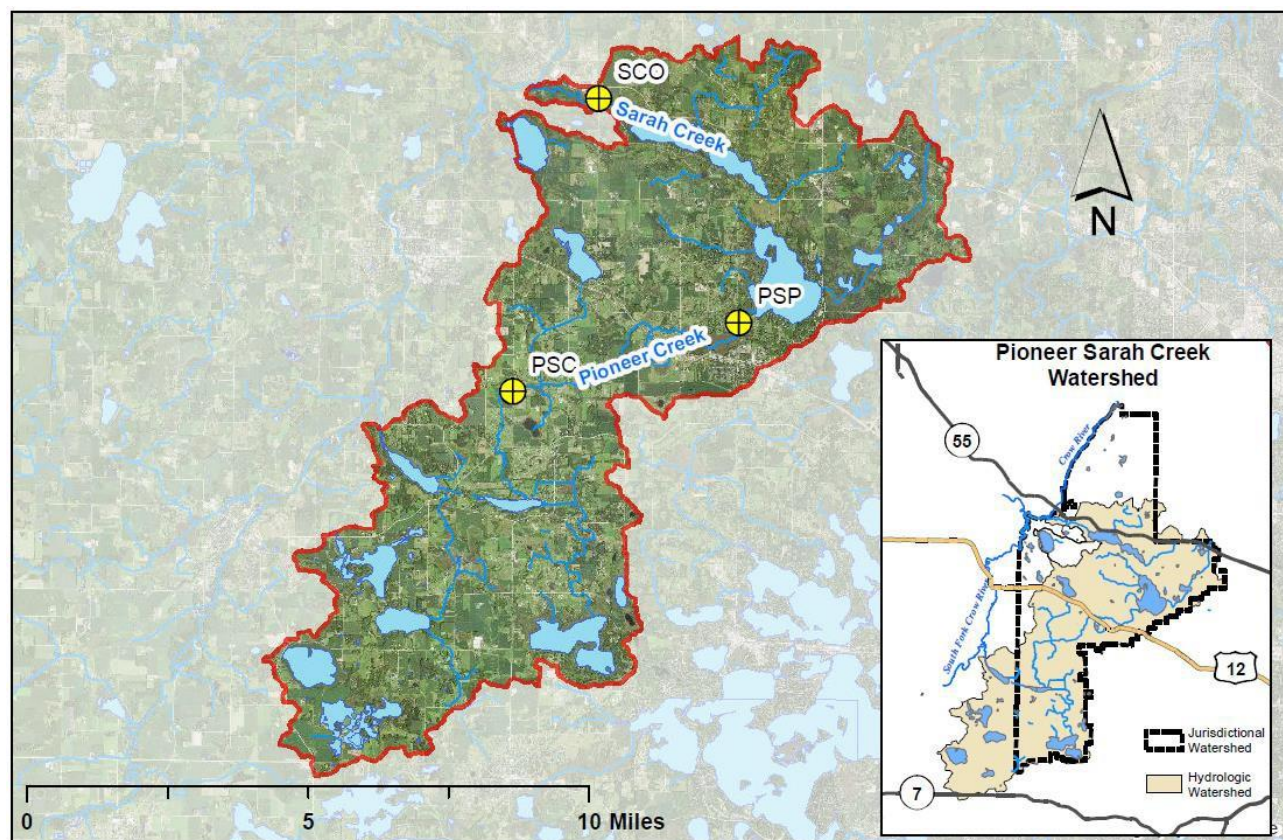
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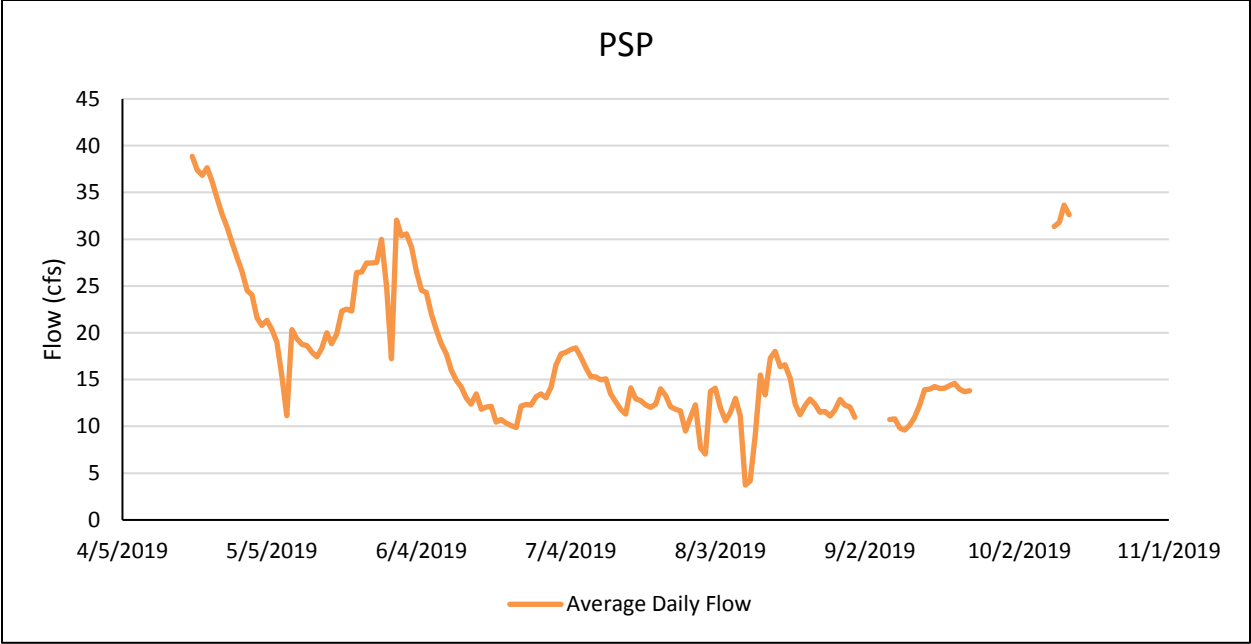
Appendix B

Water Quality Trends

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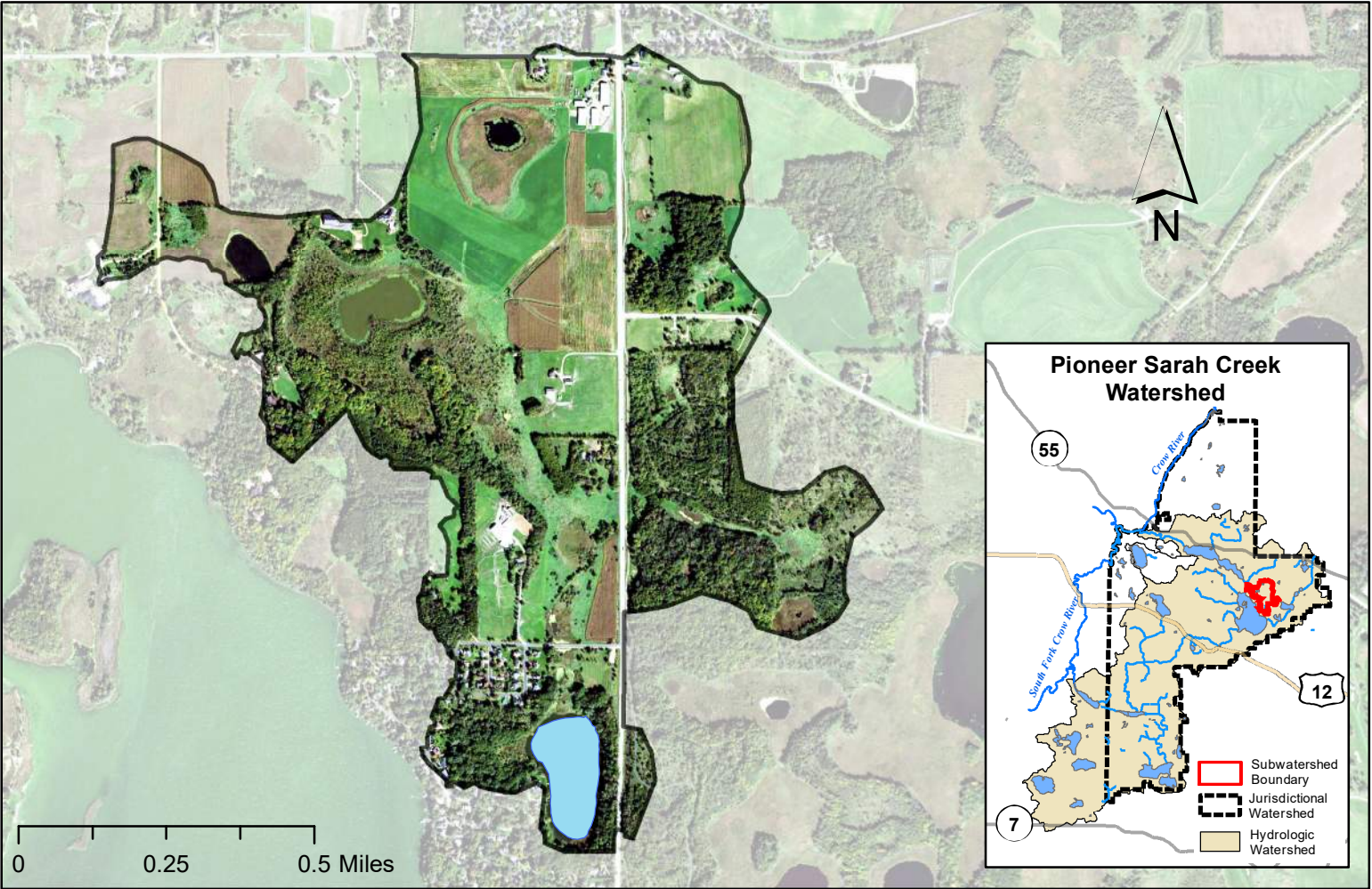
Pioneer/Sarah Creek Stream monitoring - 2019



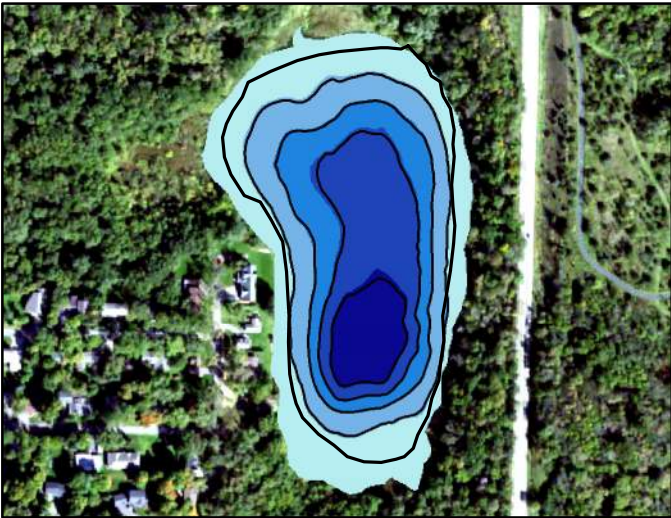


PSC was not monitored in 2019 due to high water conditions.

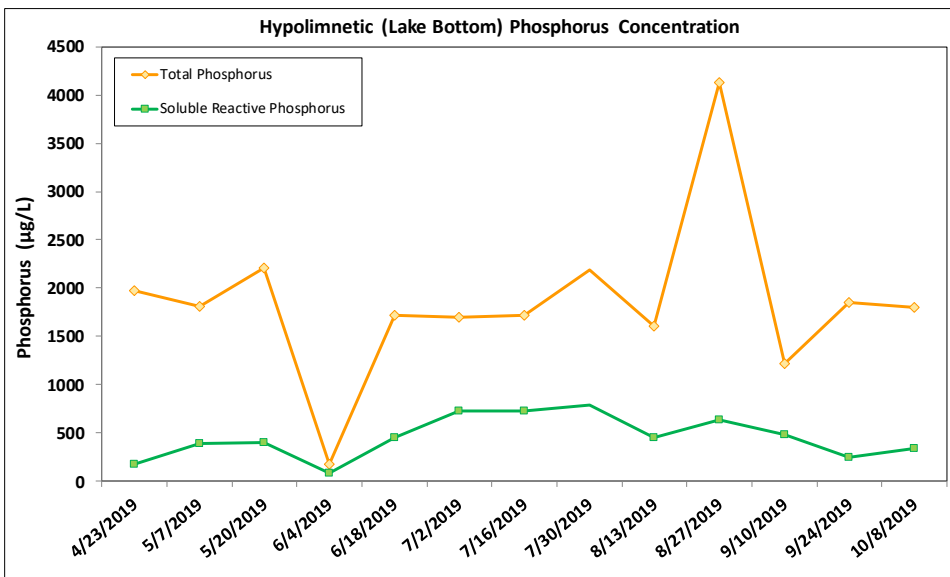
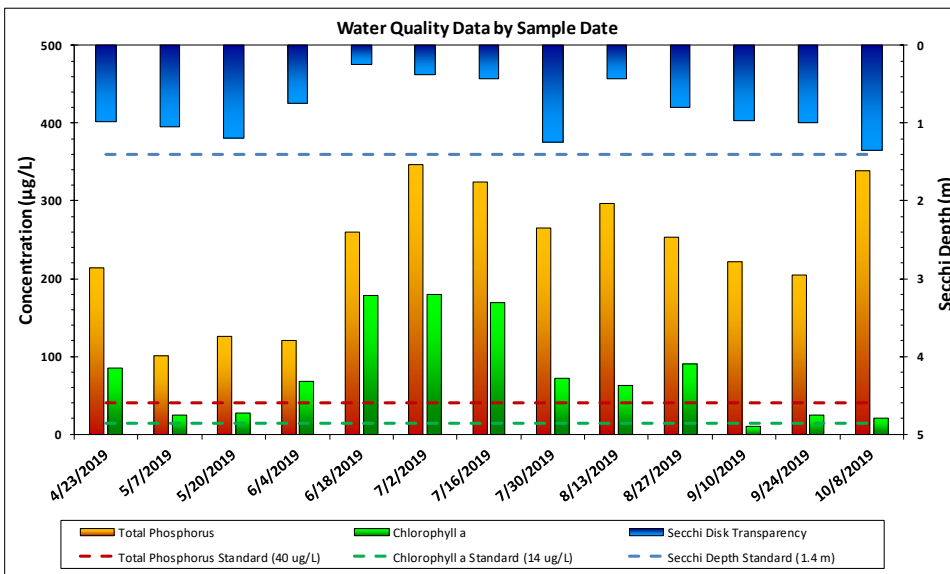
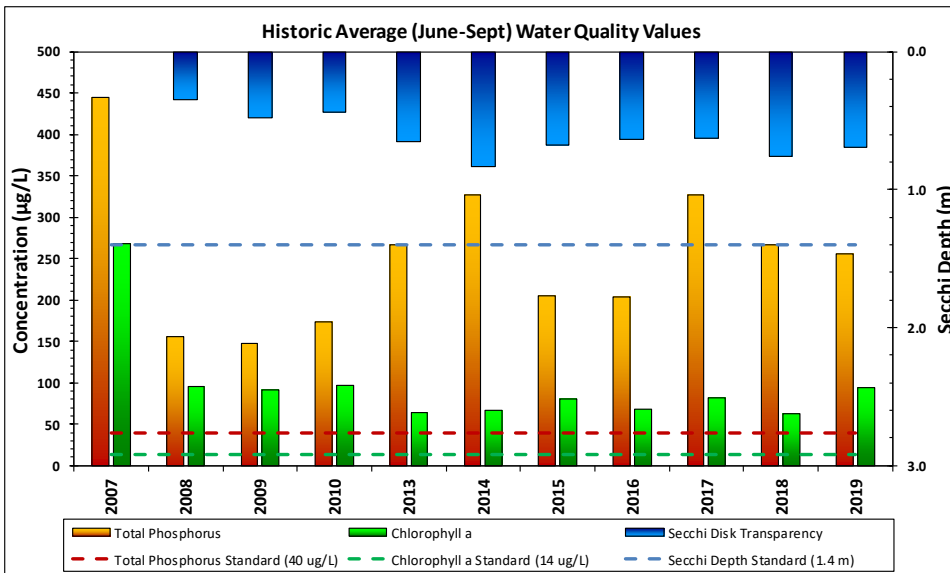
Lake Ardmore Watershed Map



Lake Ardmore Bathymetry



Lake and Watershed Characteristics	
DNR #	27015300
Watershed Area	514 Acres
Lake Area	13.5 Acres
Percent Littoral Area	75%
Average Depth	9.4 ft.
Maximum Depth	24.4 ft.
Watershed Area:Lake Area	38:1
Impairment Classification	Needs Assessment
Classification	Deep Lake



Ardmore Water Quality Report Card				
Year	TP	Chl-a	Secchi	Avg Grade
2007	F	F	F	F
2008	F	F	F	F
2009	F	F	F	F
2010	F	F	F	F
2013	D	F	F	D
2014	D	D	D-	D
2015	F	F	F	F
2016	D	F	F	D
2017	F	F	F	F
2018	D	D	D-	D
2019	F	F	F	F
MPCA Standard	C	B	C	C+

Met Council Grading System for Lake Water Quality

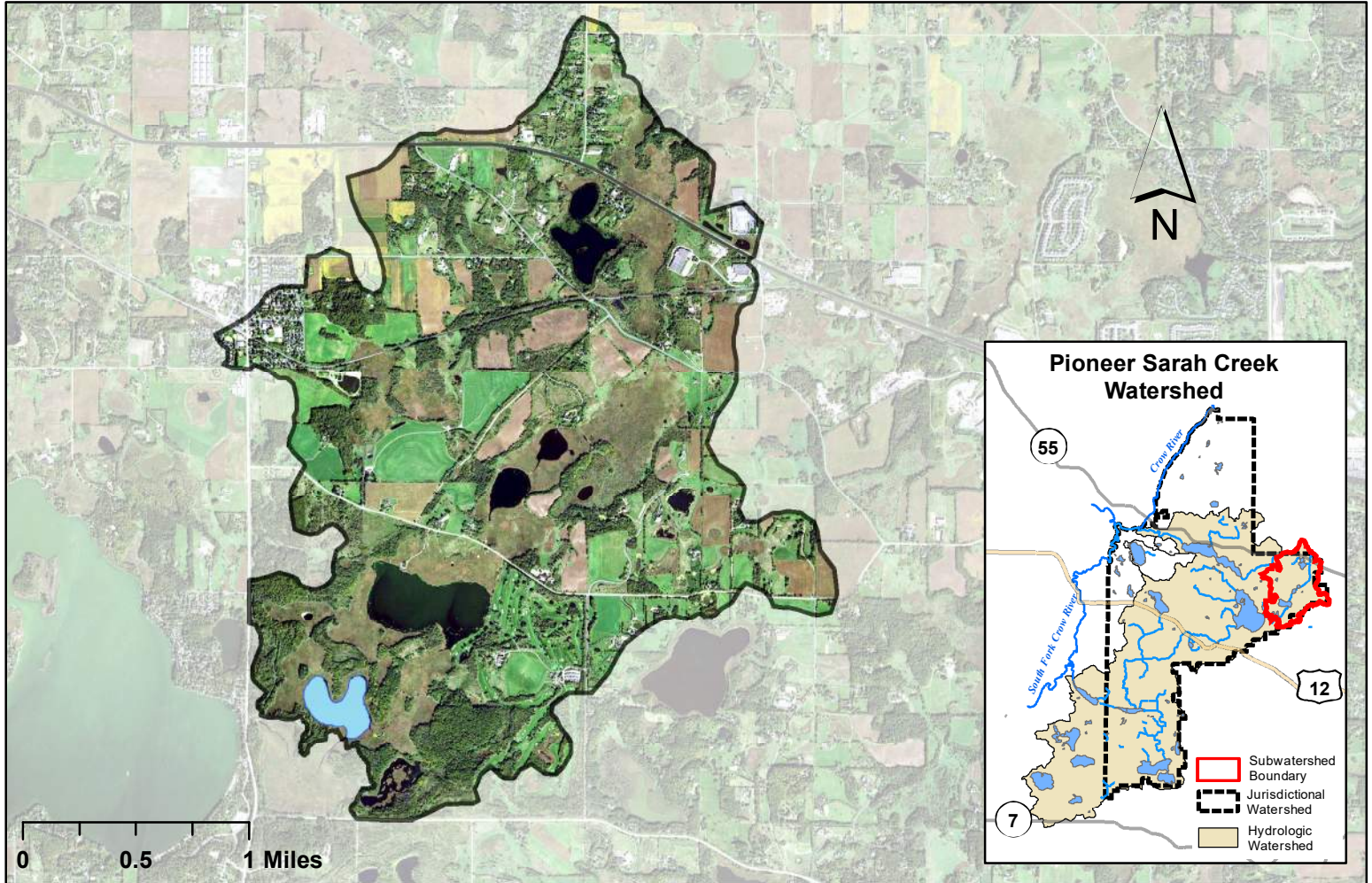


Division of Water Resources

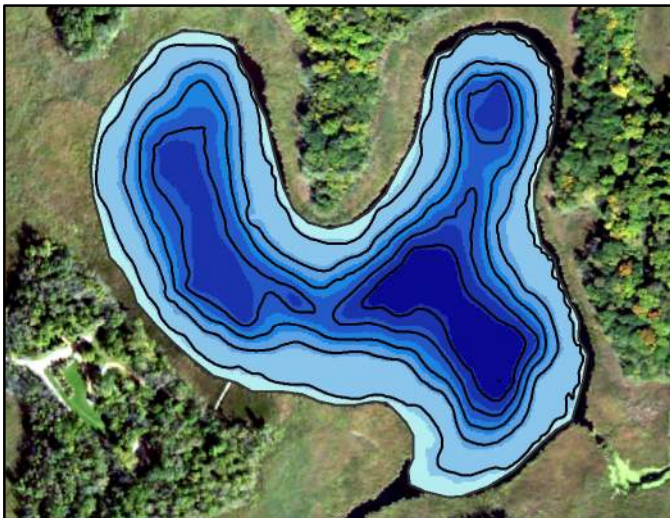
January 2020

Half Moon Lake Watershed Map

item 04-2

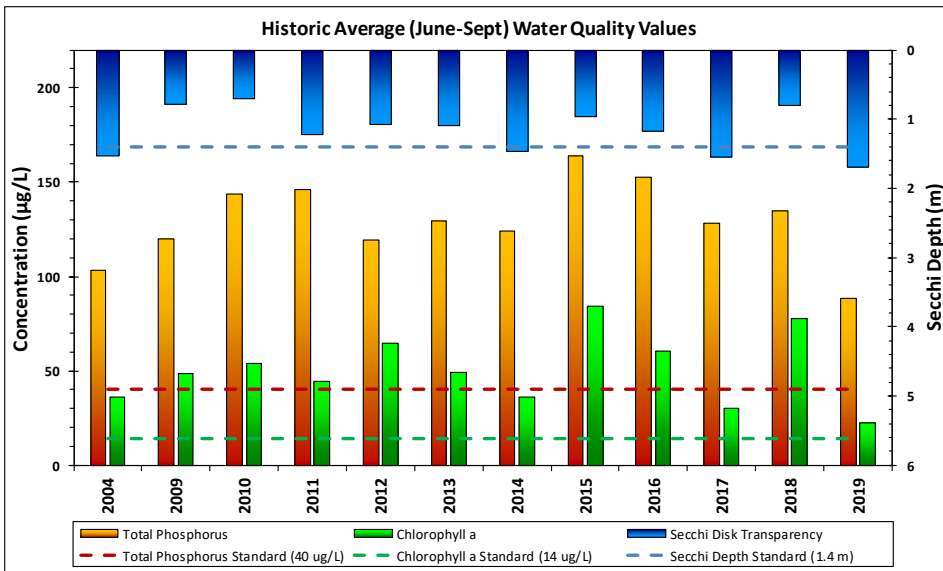


Half Moon Lake Bathymetry



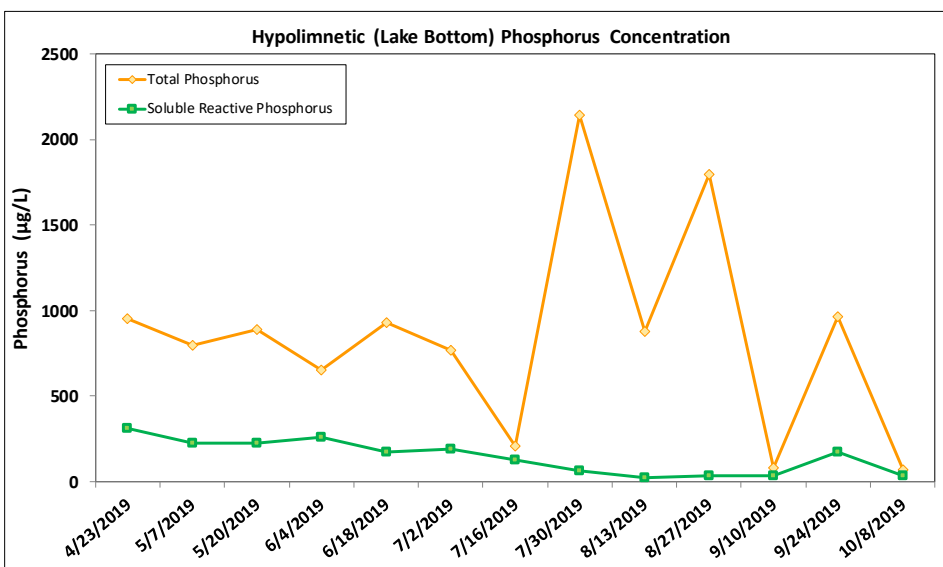
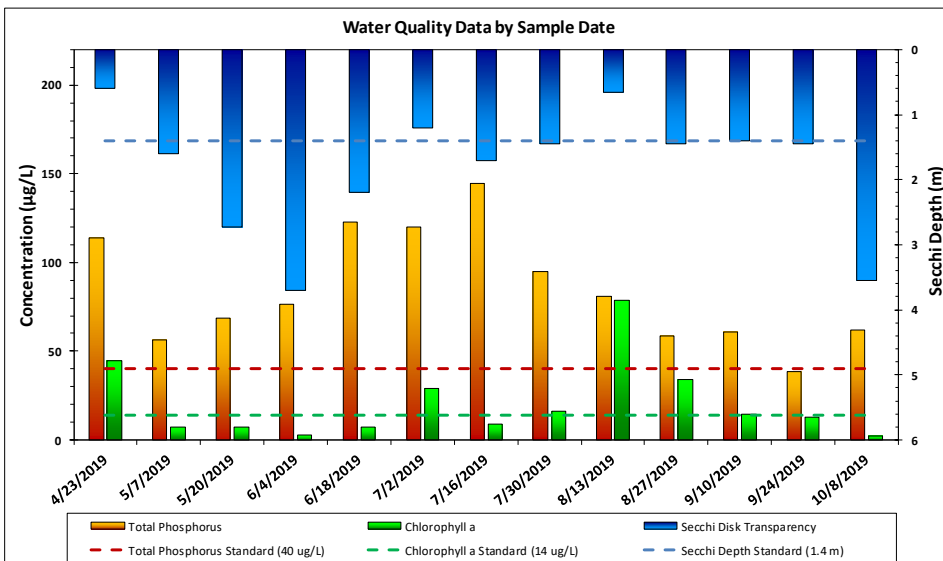
Lake and Watershed Characteristics

DNR #	27015200
Watershed Area	3,258 Acres
Lake Area	31.1 Acres
Percent Littoral Area	11%
Average Depth	13.4 ft.
Maximum Depth	30.3 ft.
Watershed Area:Lake Area	104.7:1
Impairment Classification	Proposed 2016
Classification	Deep Lake



Half Moon Lake Water Quality Report Card				
Year	TP	Chl-a	Secchi	Avg Grade
2004	D	C	C	C-
2009	D	D	D	D
2010	D	D	D	D
2011	D	C	C	C-
2012	D	D	D	D
2013	D	D	D	D
2014	D	C	C	C-
2015	F	F	D	F
2016	D	D	D	D
2017	D	C	C	C-
2018	D	F	D	D-
2019	D	C	C	C-
MPCA Standard	C	B	C	C+

Met Council Grading System for Lake Water Quality

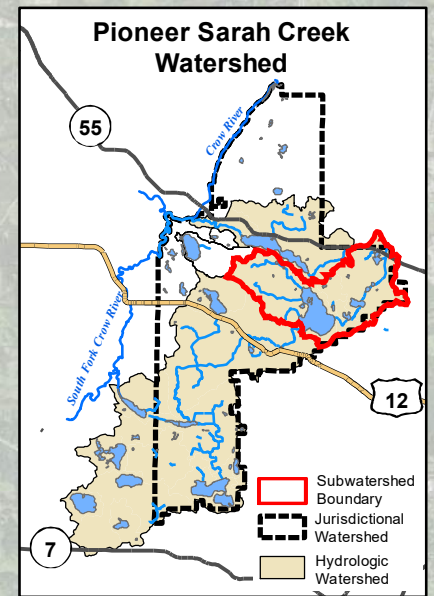
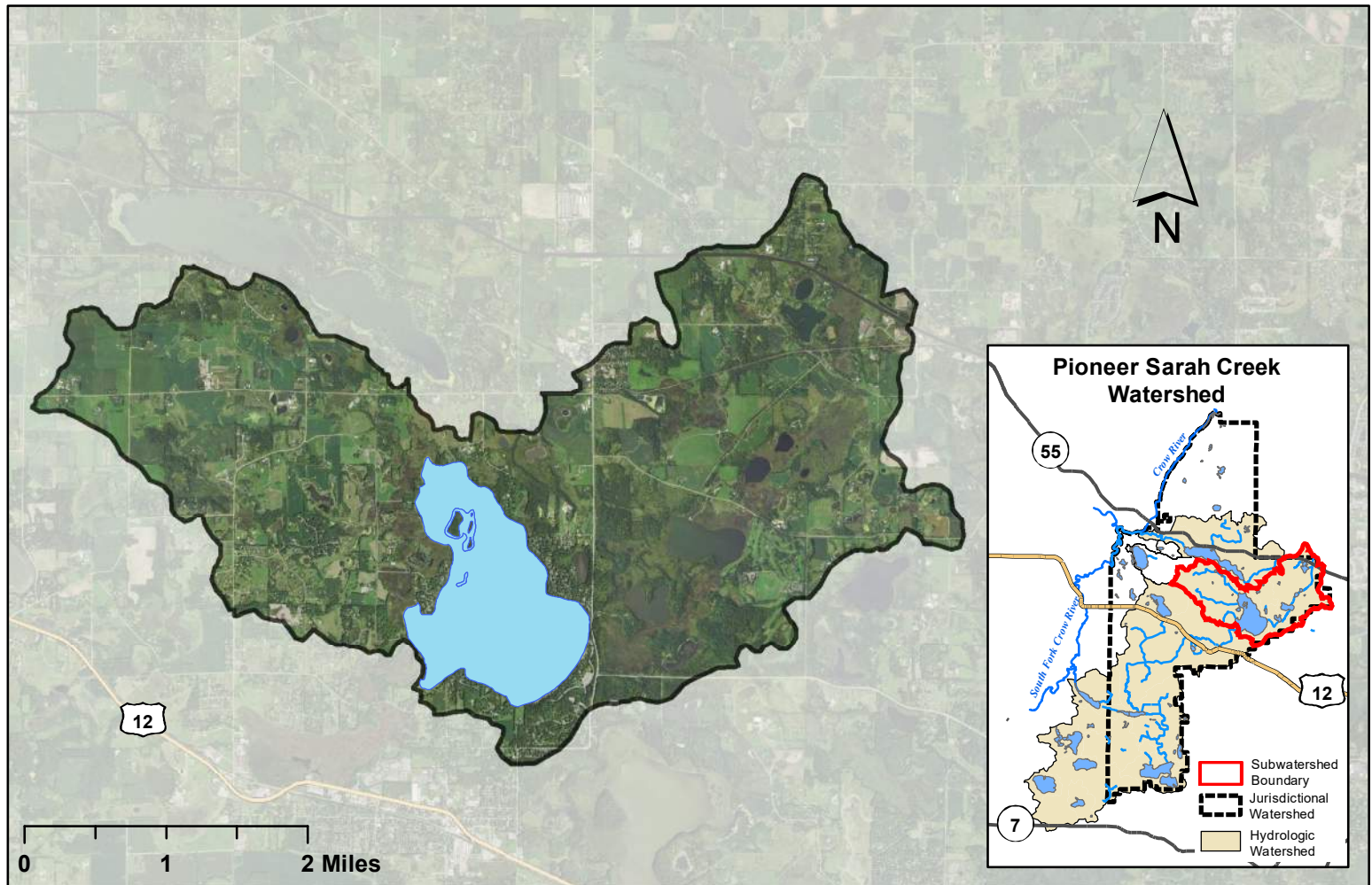


Division of Water Resources

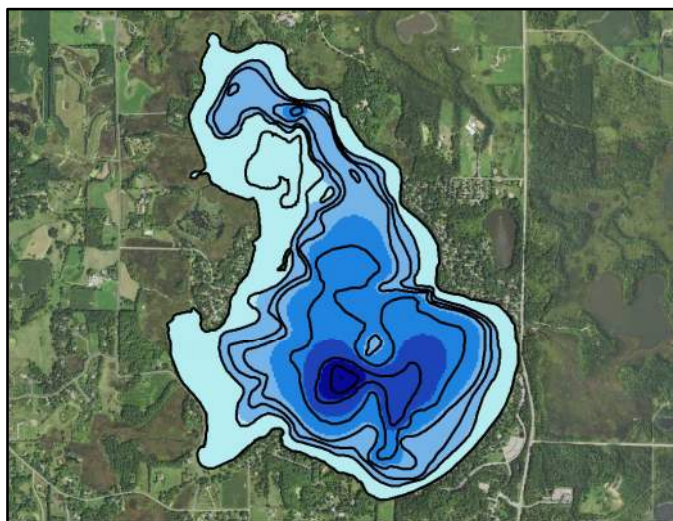
January 2020

Lake Independence Watershed Map

item 04-2

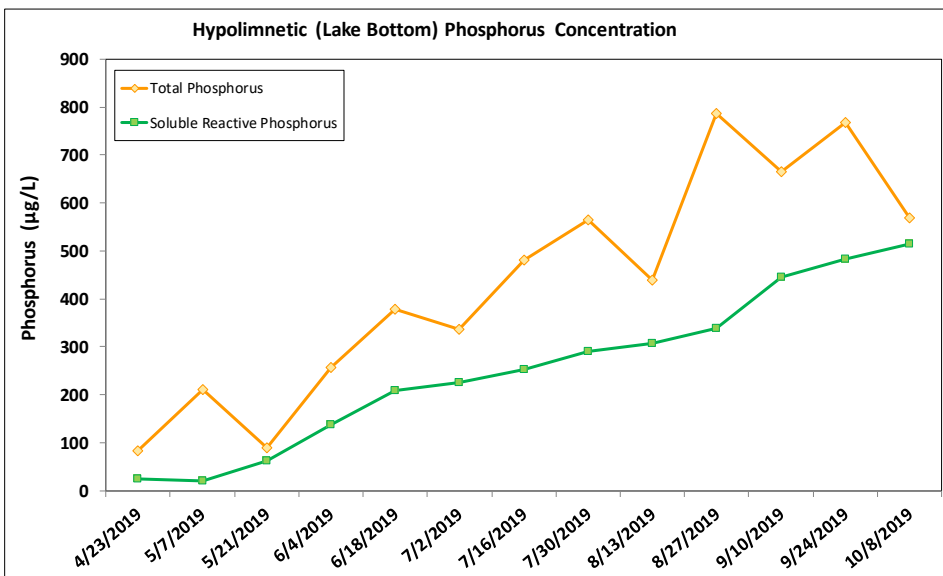
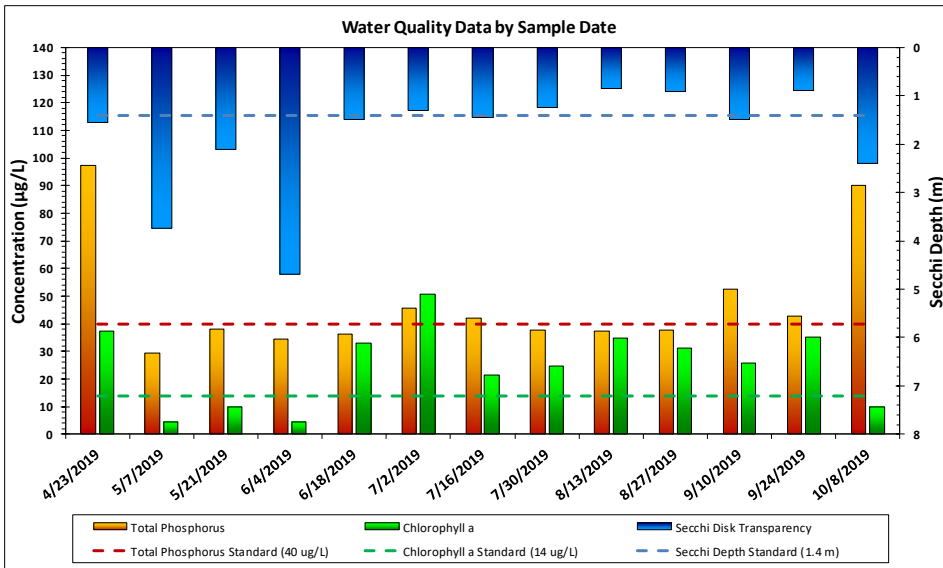
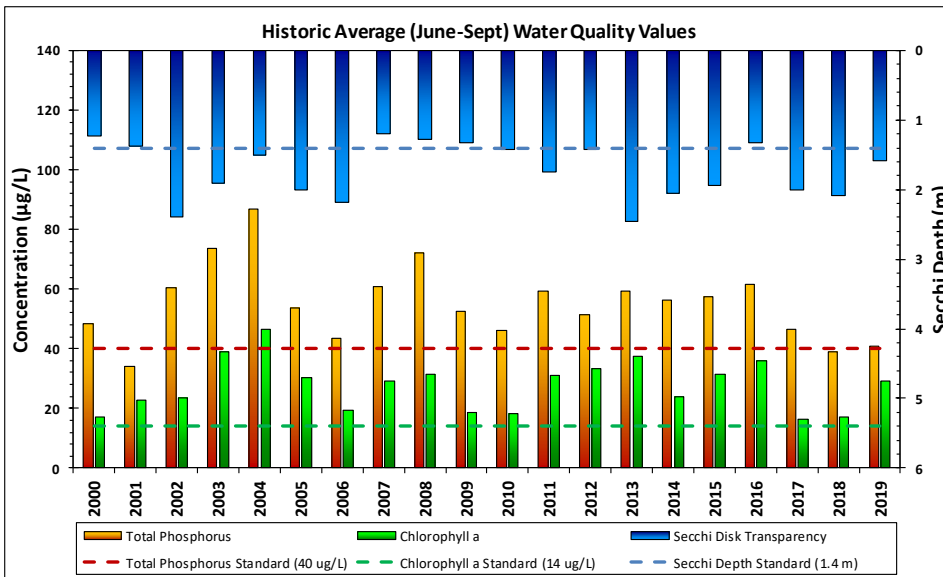


Lake Independence Bathymetry



Lake and Watershed Characteristics

DNR #	27017600
Watershed Area	7,632 Acres
Lake Area	832 Acres
Percent Littoral Area	51%
Average Depth	15.9 ft.
Maximum Depth	58 ft.
Watershed Area:Lake Area	9.2:1
Impairment Classification	Excess Nutrients 2002
Classification	Deep Lake



Lake Independence Water Quality Report Card				
Year	TP	Chl-a	Secchi	Avg Grade
2000	C	B	C	C+
2001	C	C	C	C
2002	C	C	B	C+
2003	D	C	C	C-
2004	D	C	C	C-
2005	C	C	C	C
2006	C	B	C	C+
2007	C	C	D	C-
2008	D	C	C	C-
2009	C	B	C	C+
2010	C	B	C	C+
2011	C	C	C	C
2012	C	C	C	C
2013	C	C	B	C+
2014	C	C	C	C
2015	C	C	C	C
2016	C	C	C	C
2017	C	B	C	C+
2018	C	B	C	C+
2019	C	C	C	C
MPCA Standard	C	B	C	C+

Met Council Grading System for Lake Water Quality

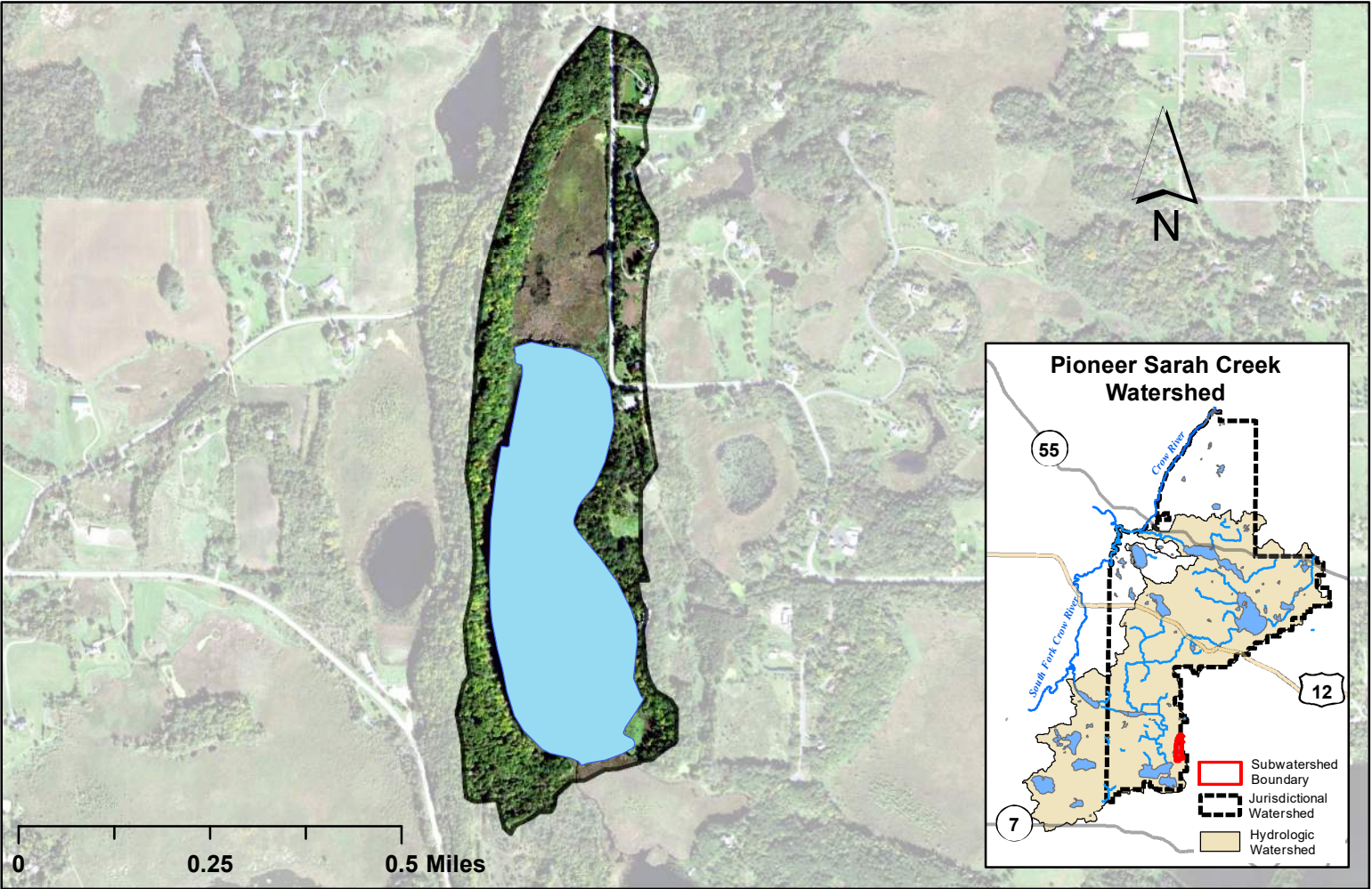


Division of Water Resources

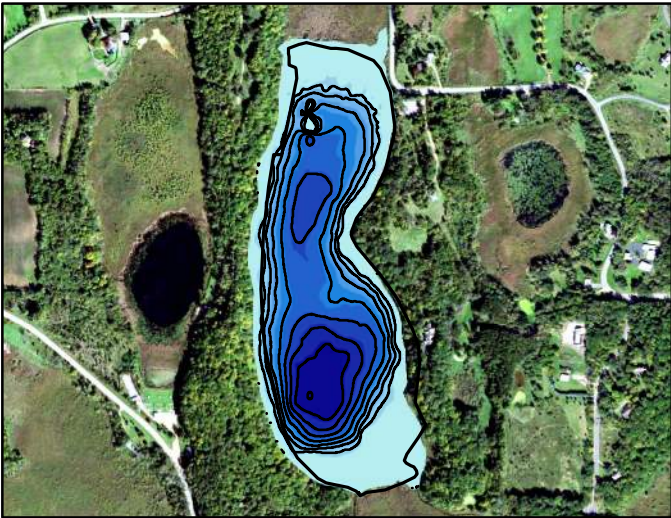
January 2020

Little Long Lake Watershed Map

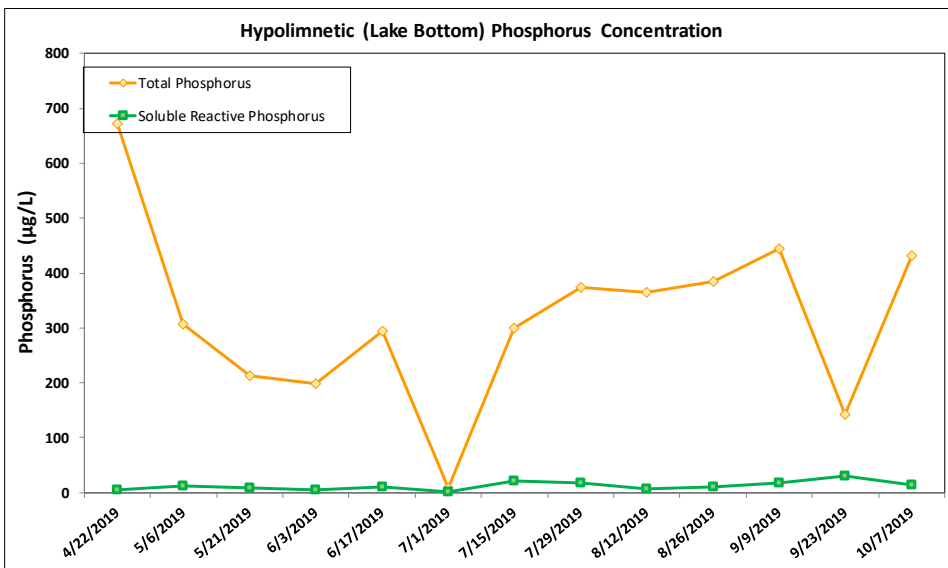
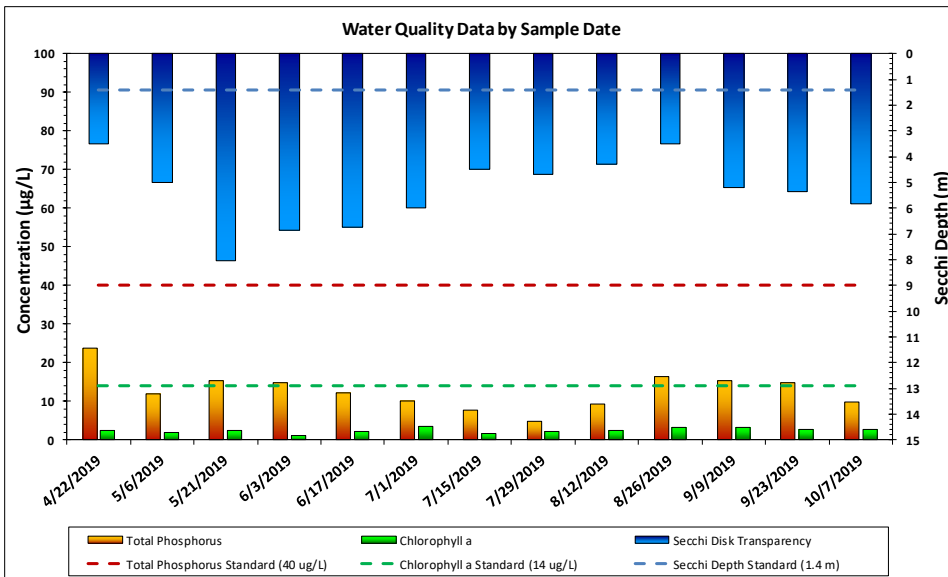
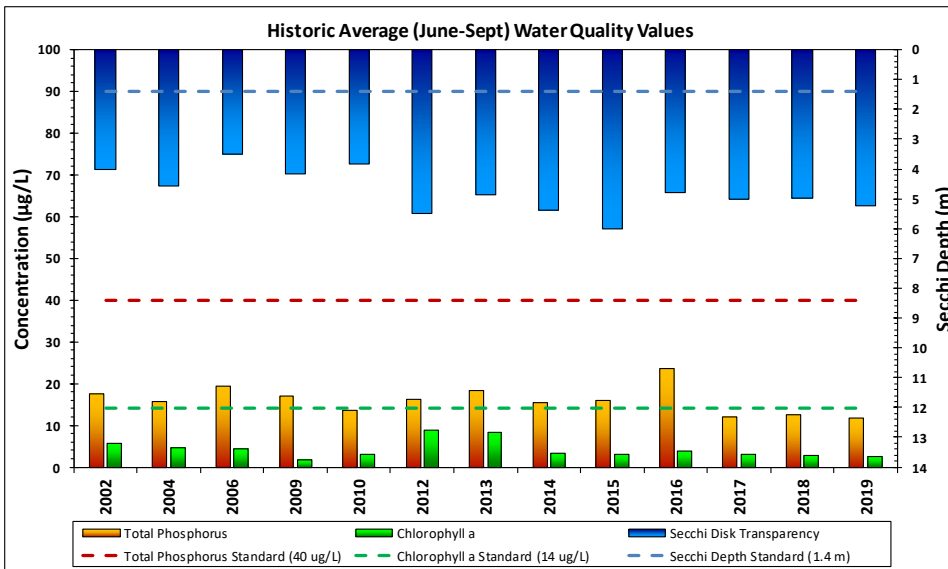
item 04-2



Little Long Lake Bathymetry



Lake and Watershed Characteristics	
DNR #	27017900
Watershed Area	92 Acres
Lake Area	53.5 Acres
Percent Littoral Area	40%
Average Depth	27.8 ft.
Maximum Depth	80.5 ft.
Watershed Area:Lake Area	1.7:1
Impairment Classification	None
Classification	Deep Lake

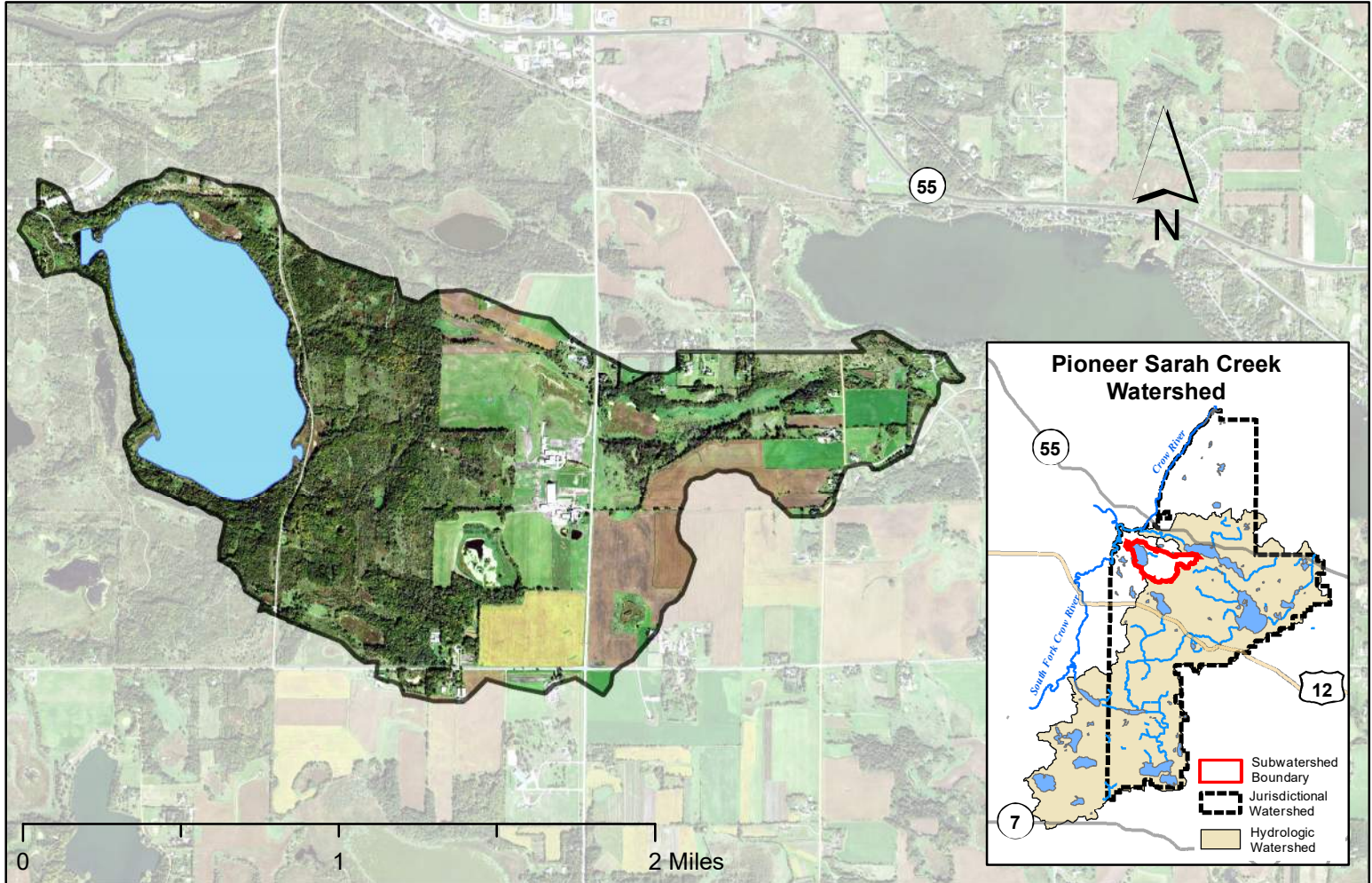


Little Long Lake Water Quality Report Card				
Year	TP	Chl-a	Secchi	Avg Grade
2002	A	A	A	A
2004	A	A	A	A
2006	A	A	A	A
2009	A	A	A	A
2010	A	A	A	A
2012	A	A	A	A
2013	A	A	A	A
2014	A	A	A	A
2015	A	A	A	A
2016	B	A	A	A-
2017	A	A	A	A
2018	A	A	A	A
2019	A	A	A	A
MPCA Standard	C	B	C	C+

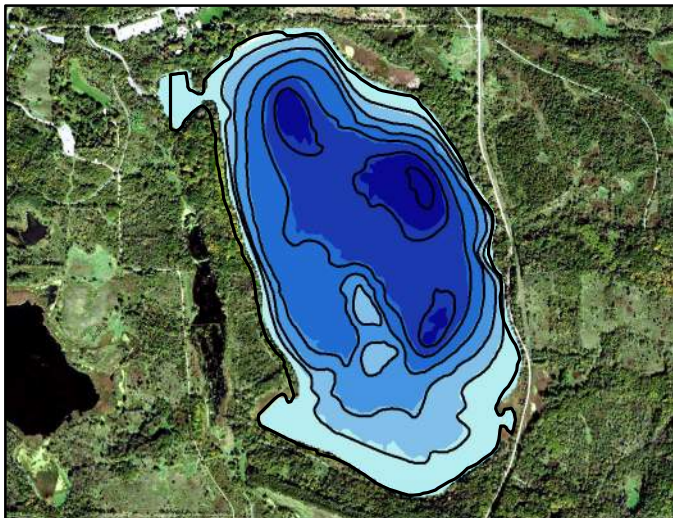
Met Council Grading System for Lake Water Quality

Lake Rebecca Watershed Map

item 04-2

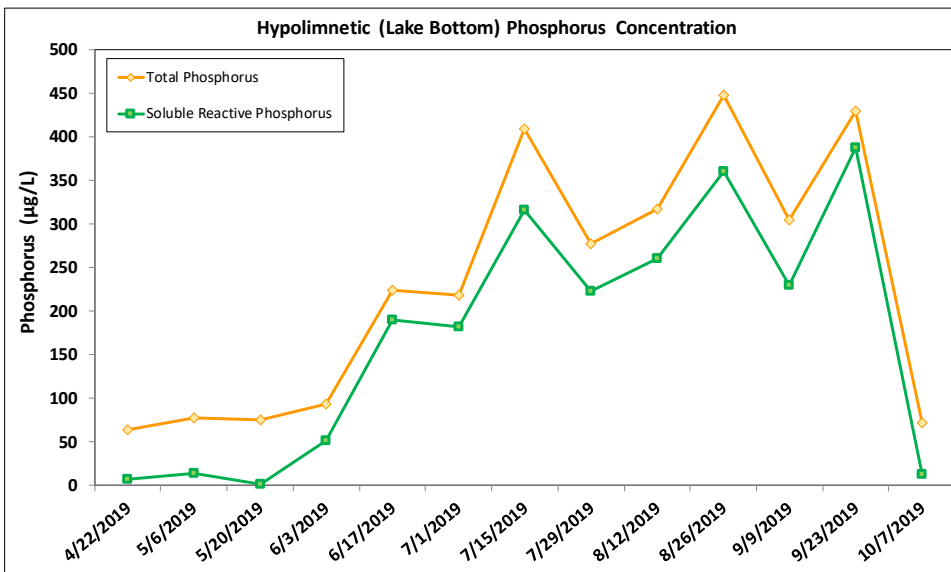
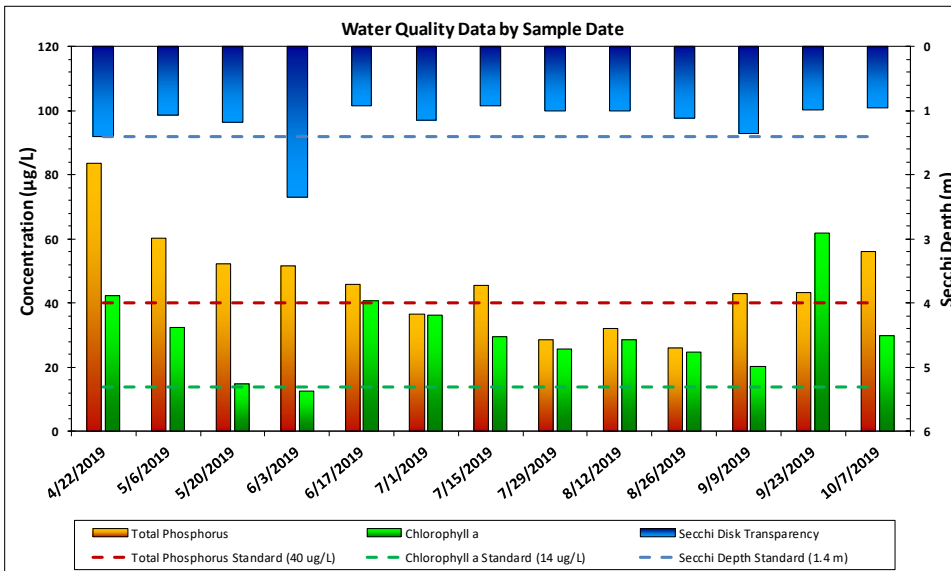
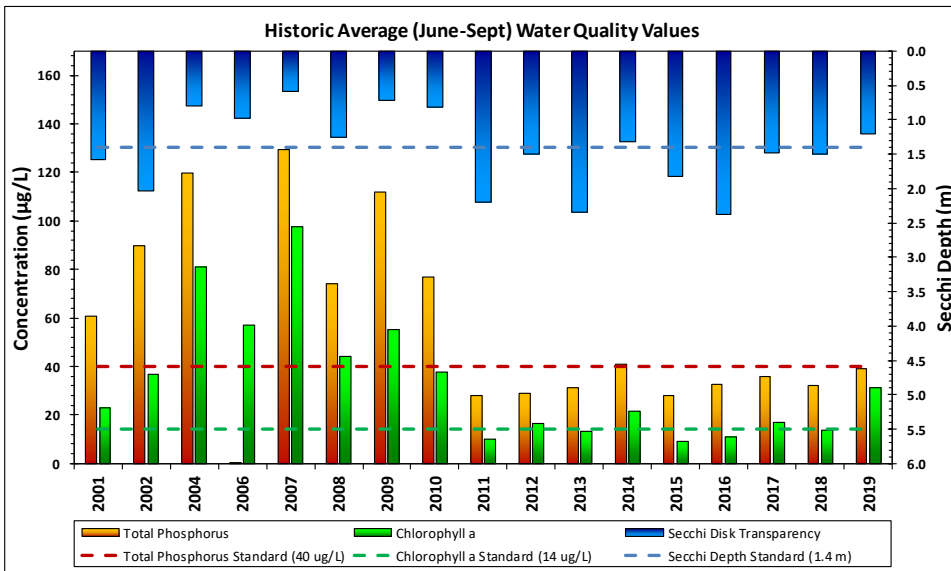


Lake Rebecca Bathymetry



Lake and Watershed Characteristics

DNR #	27019200
Watershed Area	1,277 Acres
Lake Area	261 Acres
Percent Littoral Area	50%
Average Depth	14.4 ft.
Maximum Depth	31.1 ft.
Watershed Area:Lake Area	4.9:1
Impairment Classification	Excess Nutrients 2008
Classification	Deep Lake



Lake Rebecca Water Quality Report Card				
Year	TP	Chl-a	Secchi	Avg Grade
2001	C	C	C	C
2002	D	C	C	C-
2004	D	F	D	D-
2006	A	D	D	C
2007	D	F	F	F
2008	D	C	C	C-
2009	D	D	D	D
2010	D	C	D	D+
2011	B	B	B	B
2012	B	B	C	B-
2013	B	B	B	B
2014	C	C	C	C
2015	B	A	C	B
2016	C	B	B	B-
2017	C	B	C	C+
2018	C	B	C	C+
2019	C	C	C	C
MPCA Standard	C	B	C	C+

Met Council Grading System for Lake Water Quality

Alum Treatment: 2011

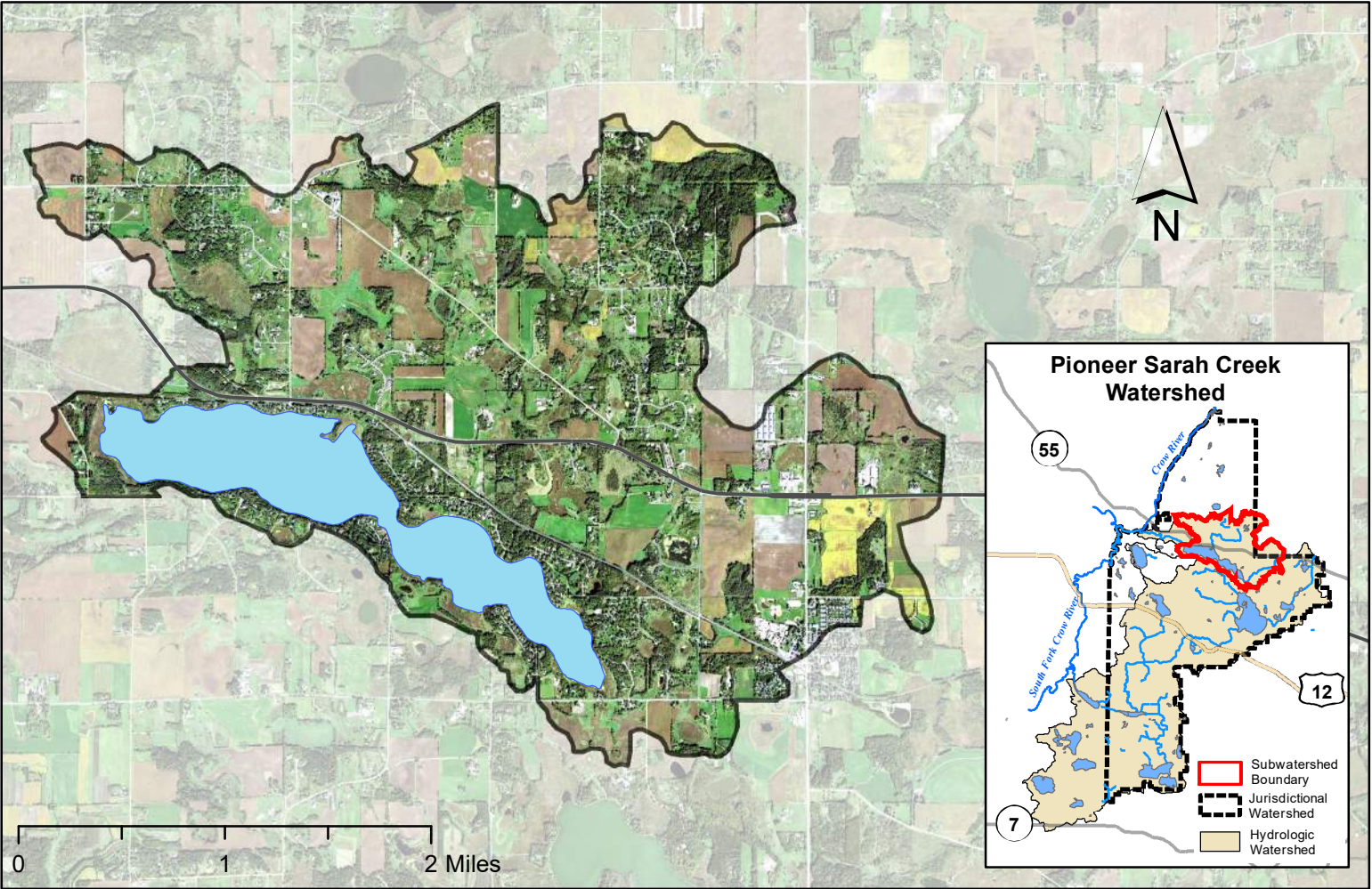


Division of Water Resources

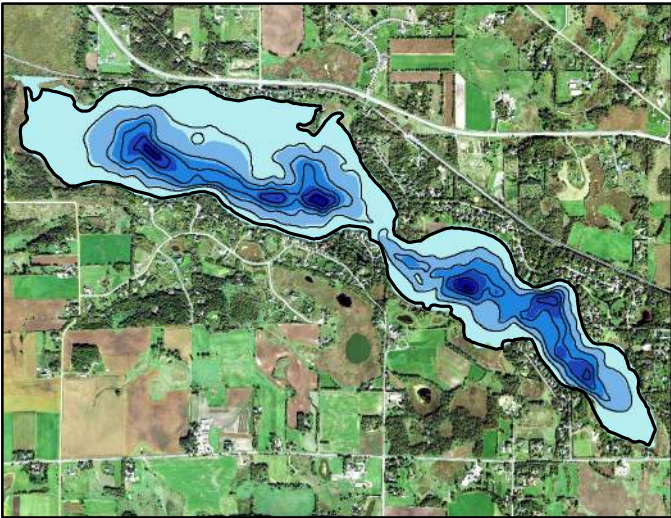
January 2020

Lake Sarah Watershed Map

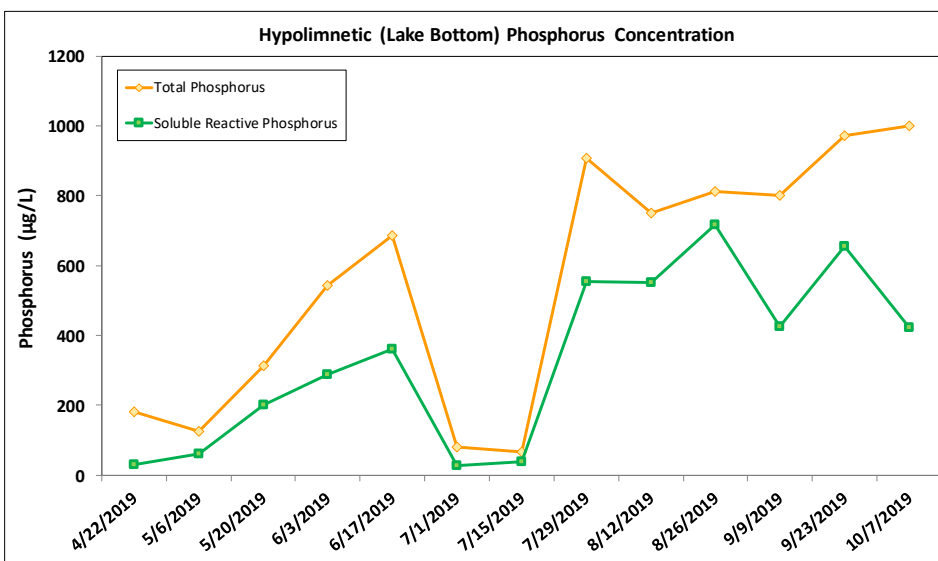
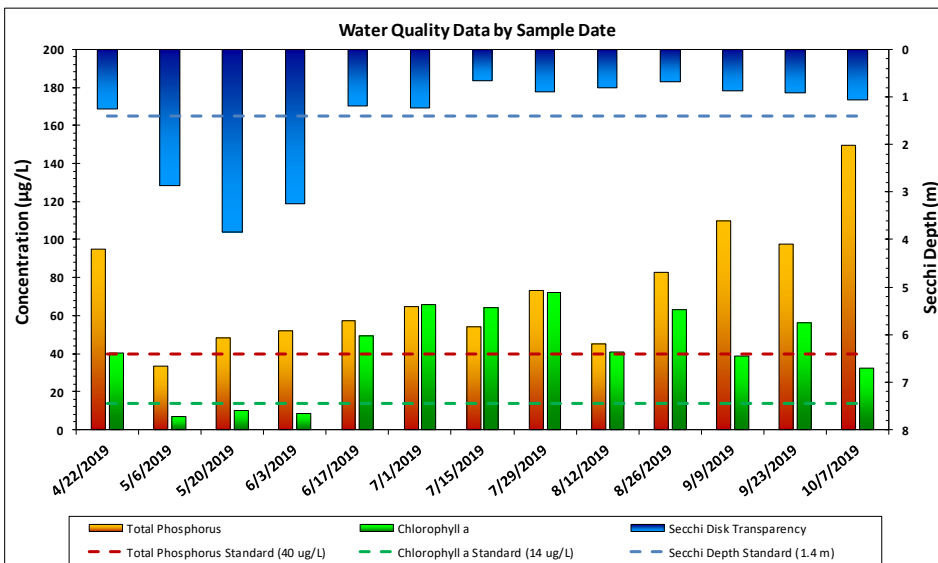
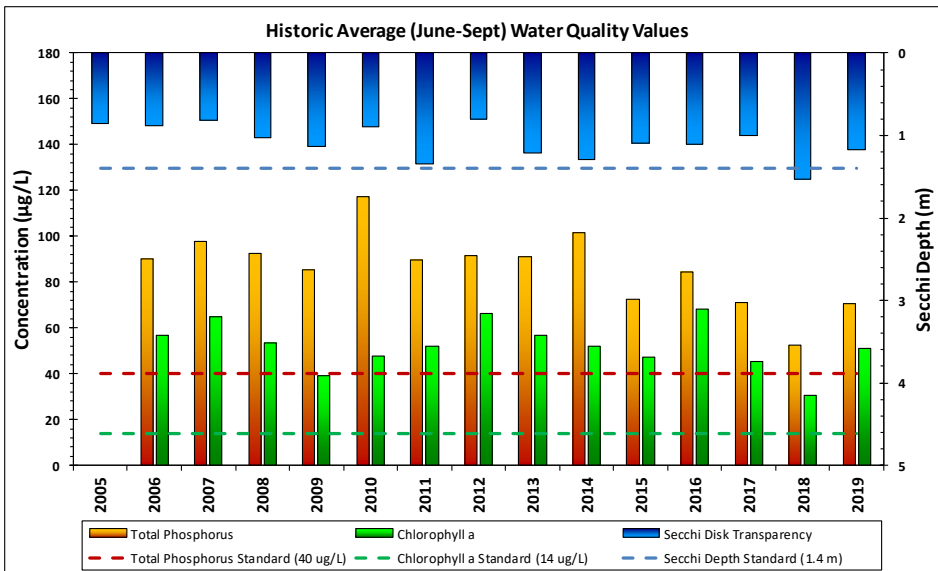
item 04-2



Lake Sarah Bathymetry



Lake and Watershed Characteristics	
DNR #	27019100
Watershed Area	4,519 Acres
Lake Area	536 Acres
Percent Littoral Area	61%
Average Depth	13.7 ft.
Maximum Depth	49.9 ft.
Watershed Area:Lake Area	8.4:1
Impairment Classification	Excess Nutrients 2006
Classification	Deep Lake



Lake Sarah Water Quality Report Card				
Year	TP	Chl-a	Secchi	Avg Grade
2005			D	D
2006	D	D	D	D
2007	D	D	D	D
2008	D	D	D	D
2009	D	C	D	D+
2010	D	C	D	D+
2011	D	D	C	D+
2012	D	D	D	D
2013	D	D	C	D+
2014	D	D	C	D+
2015	D	C	D	D+
2016	D	D	D	D
2017	D	C	D	D+
2018	C	C	C	C
2019	D	D	D	D
MPCA Standard	C	B	C	C+

Met Council Grading System for Lake Water Quality

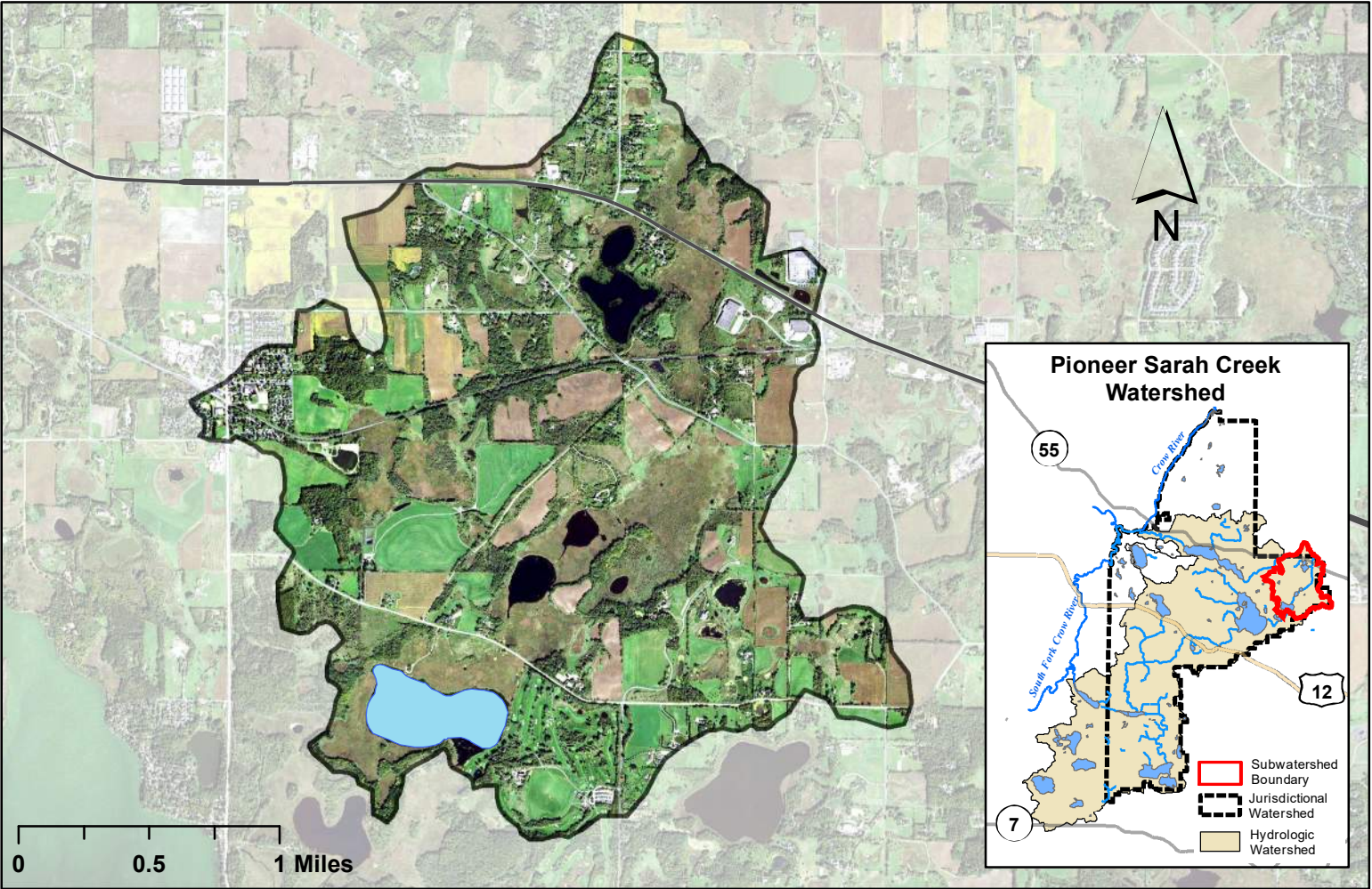


Division of Water Resources

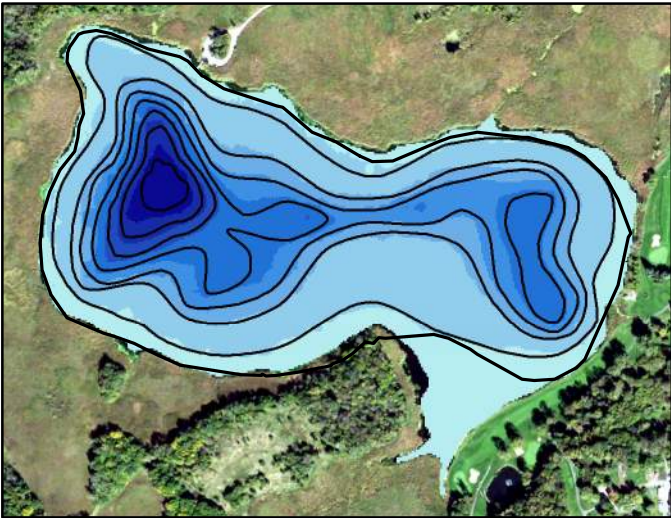
January 2020

Spurzem Lake Watershed Map

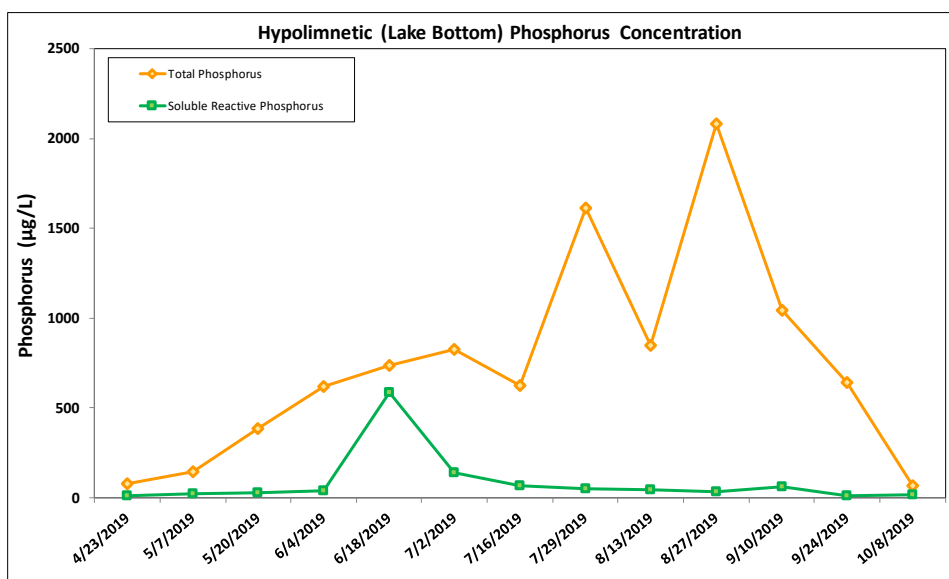
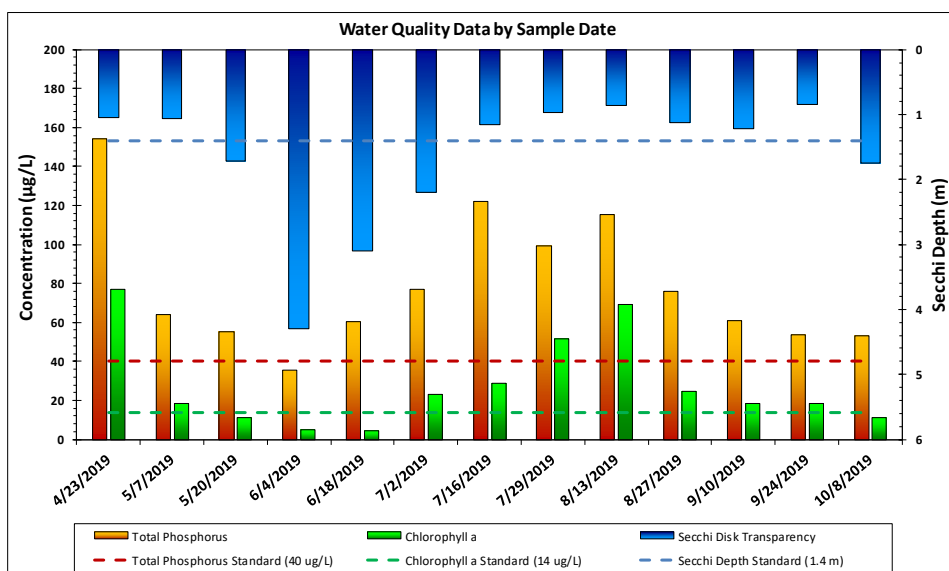
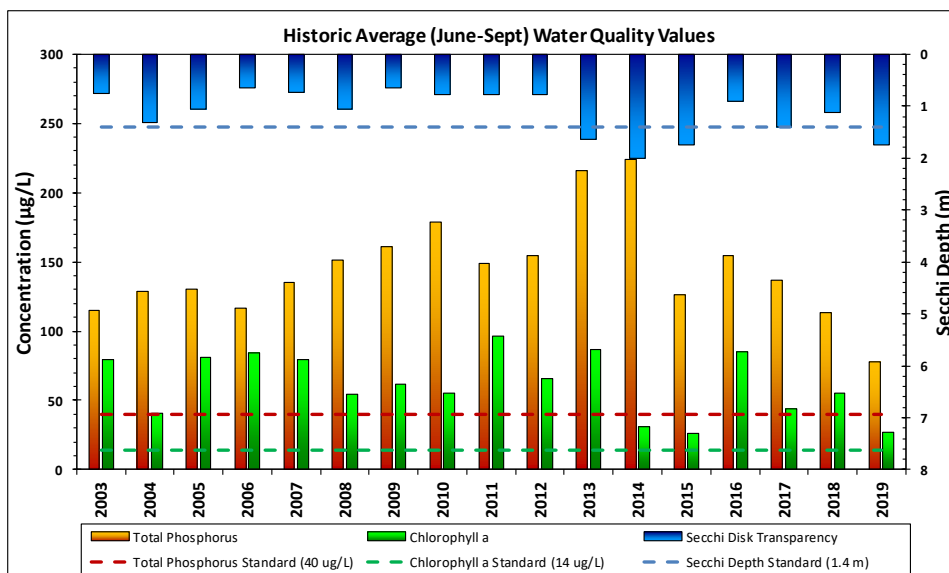
item 04-2



Spurzem Lake Bathymetry



Lake and Watershed Characteristics	
DNR #	27014900
Watershed Area	2,915 Acres
Lake Area	78.6 Acres
Percent Littoral Area	70%
Average Depth	11.1 ft.
Maximum Depth	37.4 ft.
Watershed Area:Lake Area	37.1:1
Impairment Classification	Excess Nutrients 2008
Classification	Deep Lake



Spurzem Lake Water Quality Report Card				
Year	TP	Chl-a	Secchi	Avg Grade
2003	D	F	D	D-
2004	D	C	C	C-
2005	D	F	D	D-
2006	D	F	F	F
2007	D	F	D	D-
2008	D	D	D	D
2009	F	D	F	F
2010	F	D	D	D-
2011	D	F	D	D-
2012	F	D	D	D-
2013	F	F	C	D-
2014	F	C	C	D+
2015	D	C	C	C-
2016	F	F	D	F
2017	D	C	C	C-
2018	D	D	D	D
2019	D	C	C	C-
MPCA Standard	C	B	C	C+

Met Council Grading System for Lake Water Quality

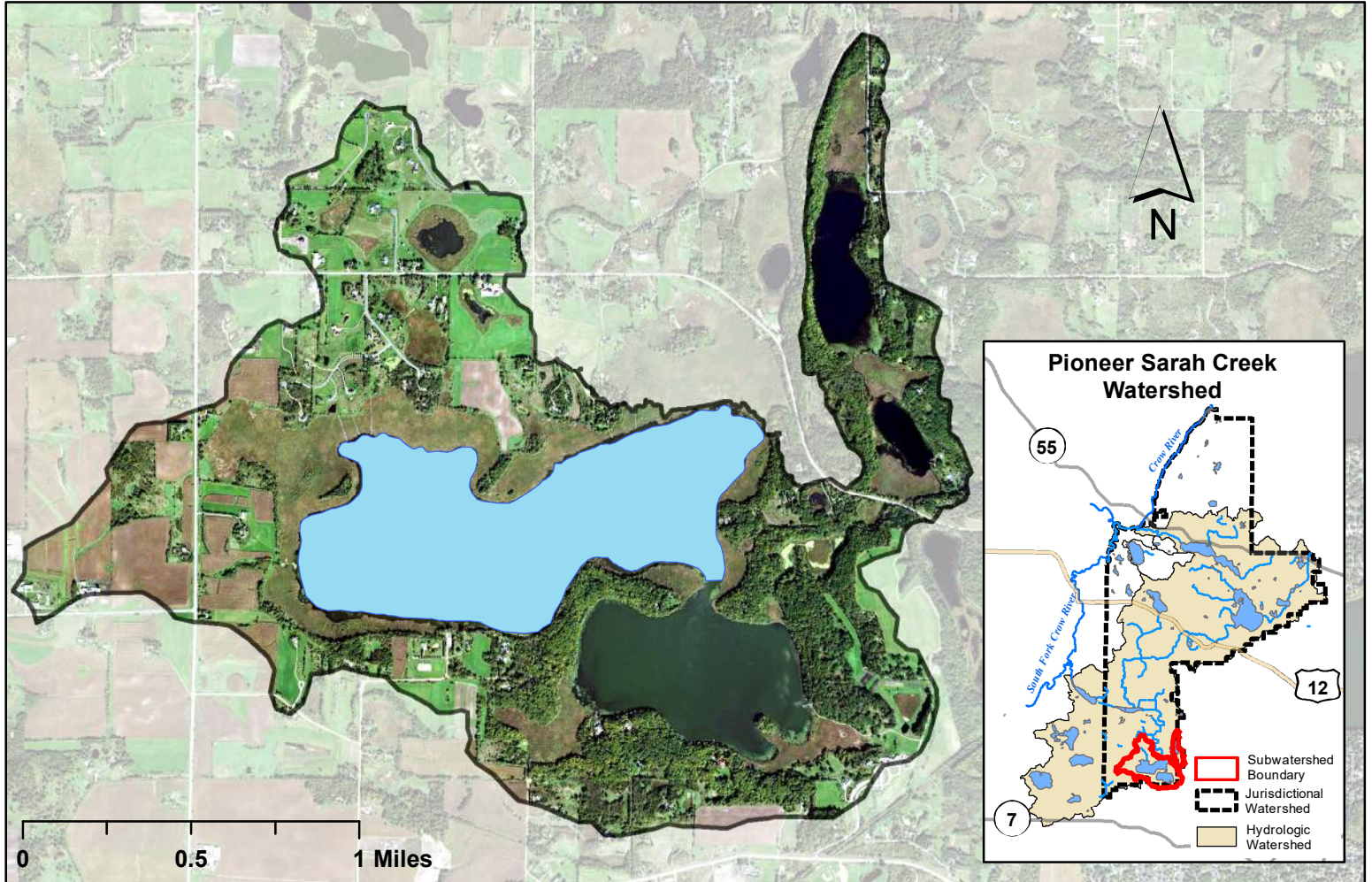


Division of Water Resources

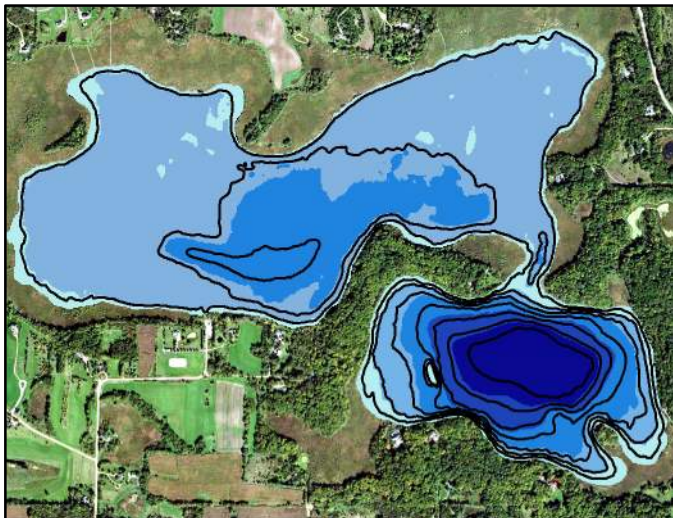
January 2020

Whaletail North Watershed Map

item 04-2

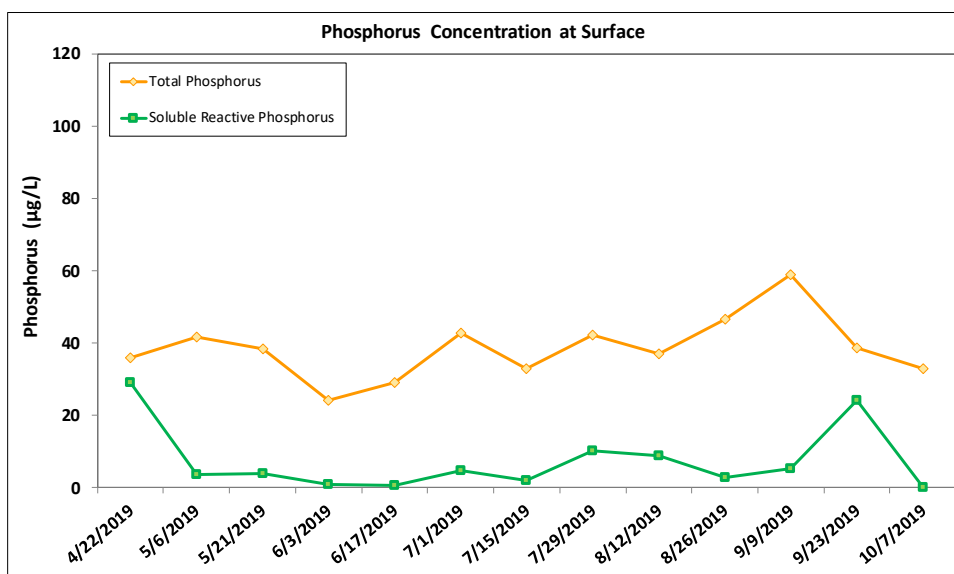
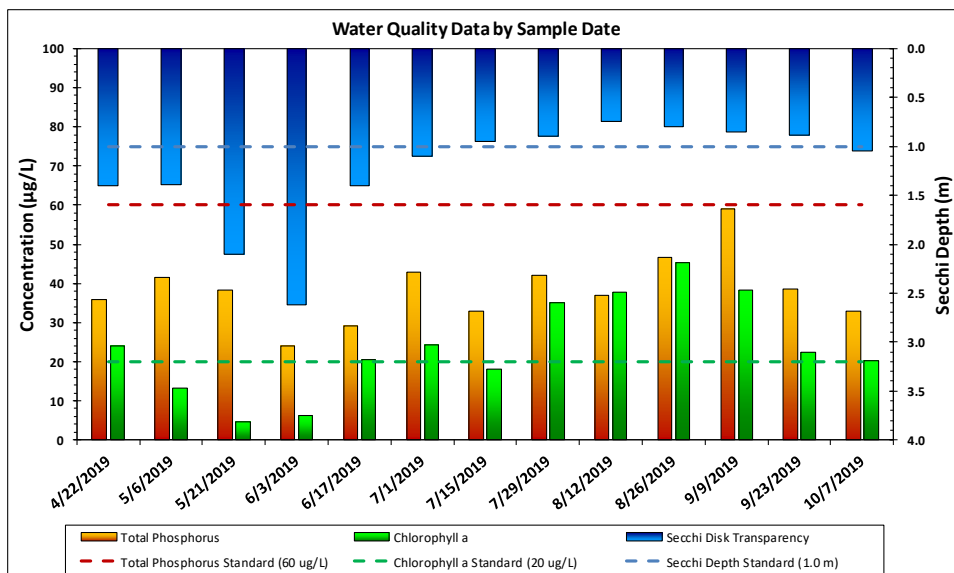
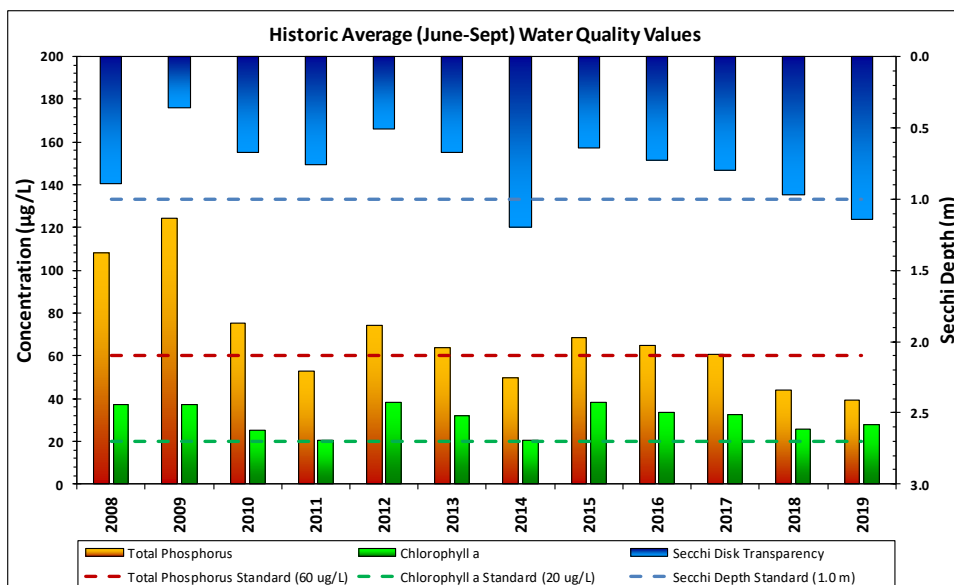


Whaletail North Bathymetry



Lake and Watershed Characteristics

DNR #	27018401
Watershed Area	1,585 Acres
Lake Area	370 Acres
Percent Littoral Area	100%
Average Depth	5.2 ft.
Maximum Depth	10.3 ft.
Watershed Area:Lake Area	4.3:1
Impairment Classification	Proposed 2016
Classification	Provisional Shallow Lake

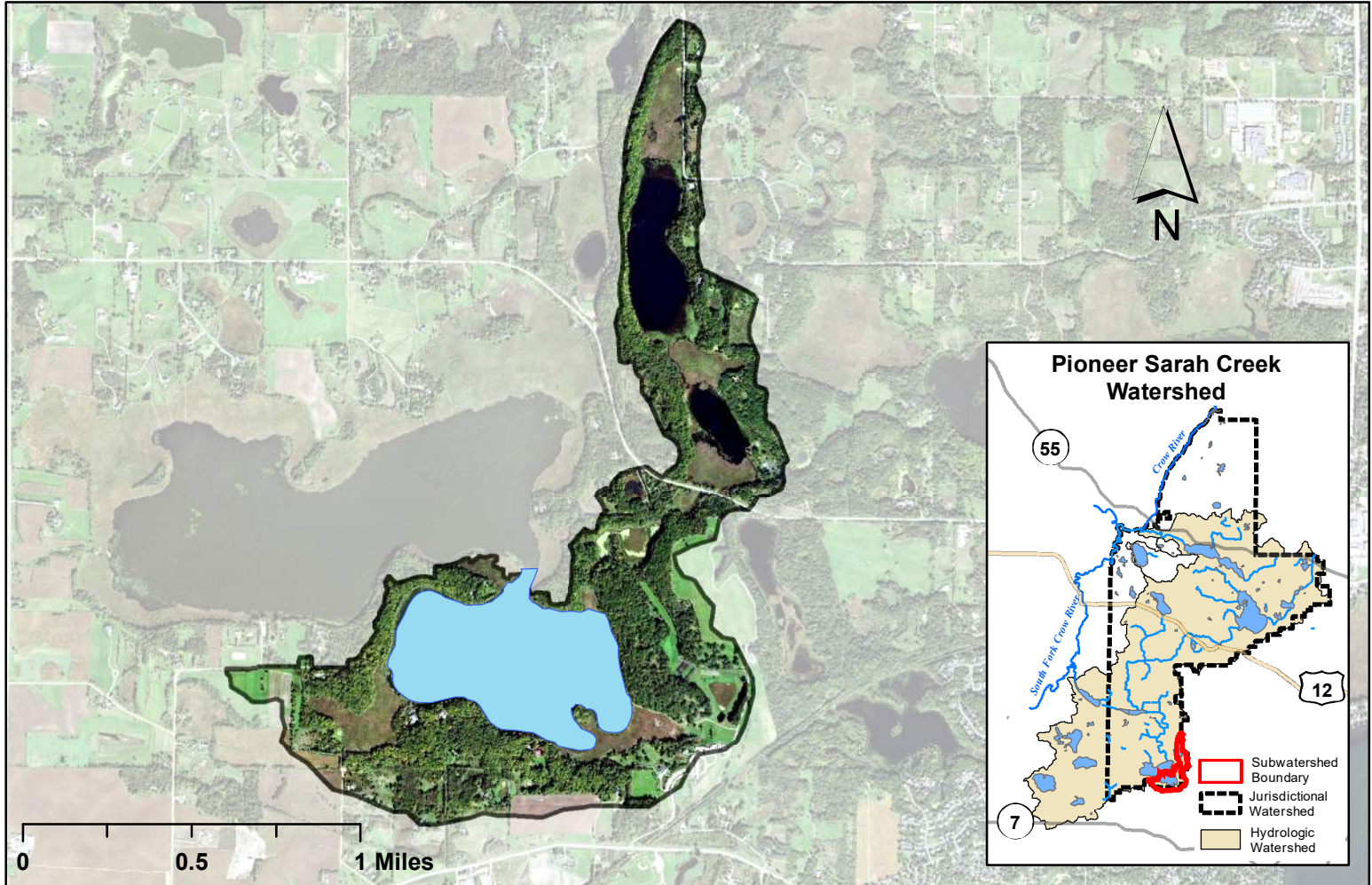


Whaletail North Water Quality Report Card				
Year	TP	Chl-a	Secchi	Avg Grade
2008	D	C	D	D+
2009	D	C	F	D
2010	D	C	F	D
2011	C	C	D	C-
2012	D	C	F	D
2013	C	C	F	D+
2014	C	C	C	C
2015	D	C	F	D
2016	C	C	D	C-
2017	C	C	D	C-
2018	C	C	D	C-
2019	C	C	D	C-
MPCA Standard	C	C	D	C-

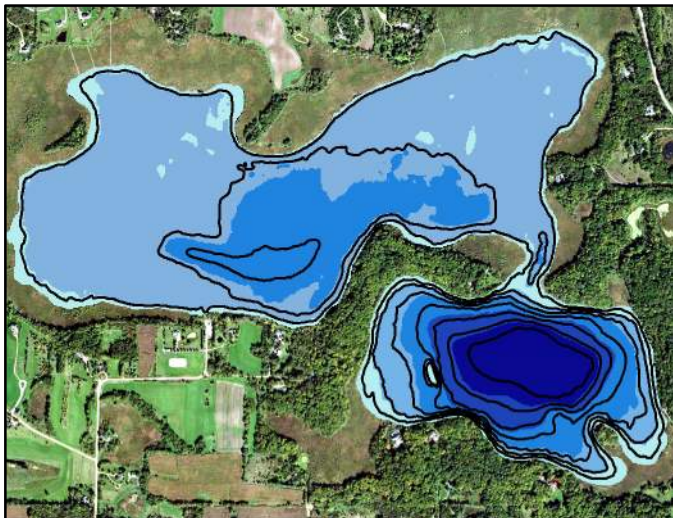
Met Council Grading System for Lake Water Quality

Whaletail South Watershed Map

item 04-2

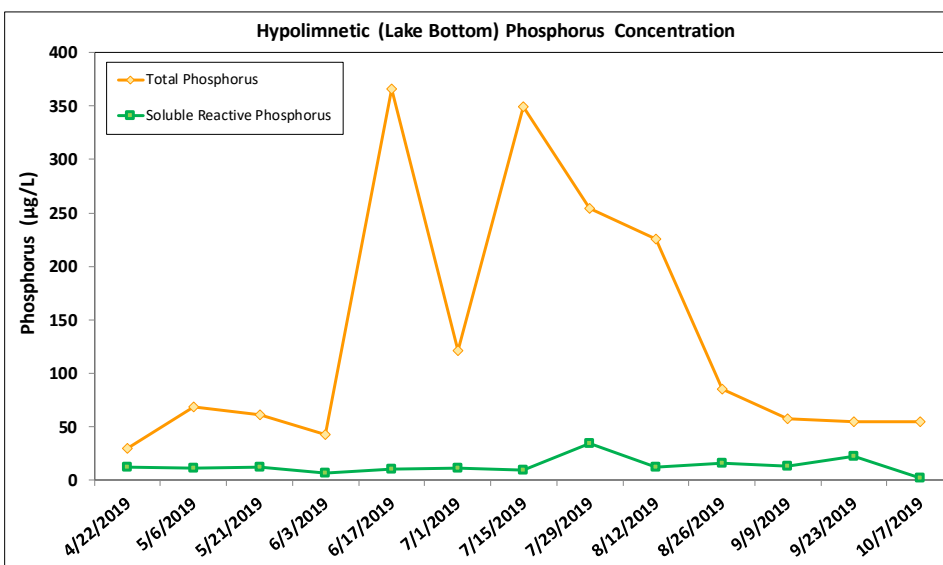
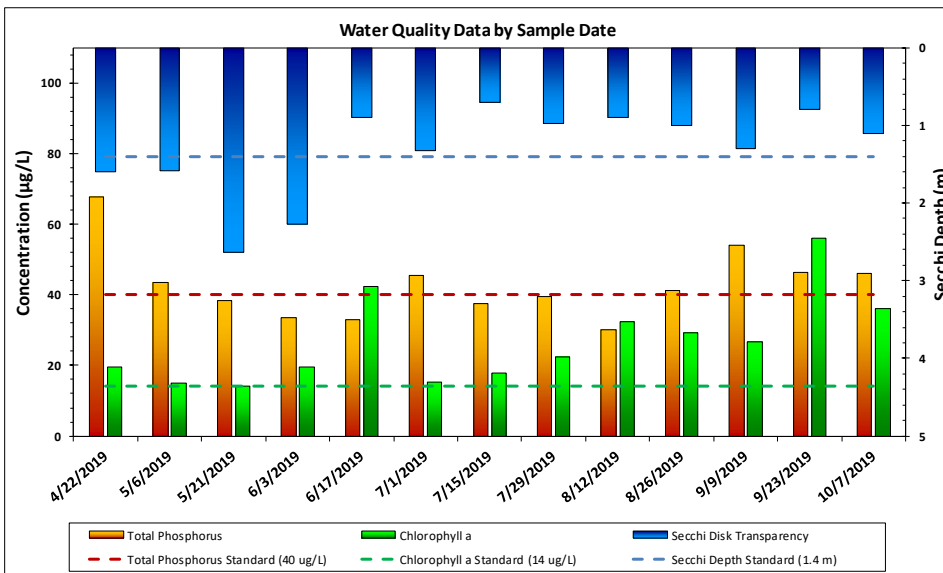
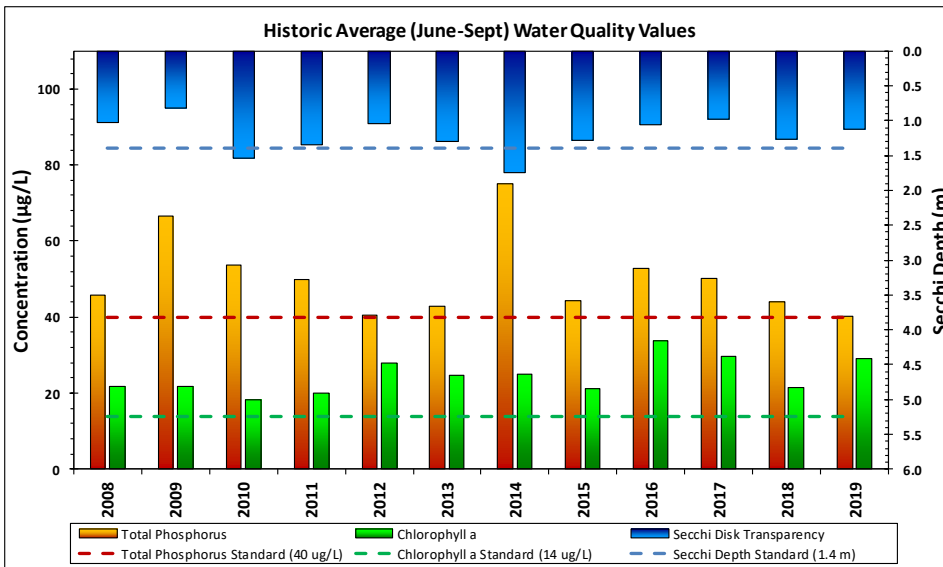


Whaletail South Bathymetry



Lake and Watershed Characteristics

DNR #	27018402
Watershed Area	661 Acres
Lake Area	156 Acres
Percent Littoral Area	66%
Average Depth	12.1 ft.
Maximum Depth	23.3 ft.
Watershed Area:Lake Area	4.2:1
Impairment Classification	Proposed 2016
Classification	Provisional Deep Lake



Whaletail South Water Quality Report Card				
Year	TP	Chl-a	Secchi	Avg Grade
2000	D	B	D	C-
2001	C	C	D	C-
2003	C	C	C	C
2005	C	C	D	C-
2007	C	C	C	C
2008	C	C	D	C-
2009	C	C	D	C-
2010	C	B	C	C+
2011	C	C	C	C
2012	C	C	D	C-
2013	C	C	C	C
2014	D	C	C	C-
2015	C	C	C	C
2016	C	C	D	C-
2017	C	C	D	C-
2018	C	C	C	C
2019	C	C	D	C-
MPCA Standard	C	B	C	C+

Met Council Grading System for Lake Water Quality



Division of Water Resources

January 2020

Appendix C

Rules and Standards

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Pioneer-Sarah Creek Watershed Management Commission

Rules and Standards

Adopted: March 4, 2015

Effective: June 1, 2015

**PIONEER-SARAH CREEK
WATERSHED MANAGEMENT COMMISSION
RULES AND STANDARDS**

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RULE K.	VARIANCES	26
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Appendix A – Wet Pond Design Standards

POLICY STATEMENT

The Pioneer-Sarah Creek Watershed Management Commission is a Joint Powers Association of the State under the Minnesota Watershed Act, and a watershed management organization as defined in the Metropolitan Surface Water Management Act. These acts provide the Commission with power to accomplish its statutory purpose: the conservation, protection, and management of water resources in the boundaries of the watershed through sound scientific principles. The Commission has adopted a water resources management plan pursuant to the Acts. These Rules implement the plan's principles and objectives.

Land alteration and utilization can affect the rate and volume and degrade the quality of surface water runoff. Sedimentation from ongoing erosion and construction activities can reduce hydraulic capacity of waterbodies and degrade water quality. Water quality problems already exist in many waterbodies in the watershed. Most of these waterbodies have been designated by the State of Minnesota as Impaired Waters, and do not meet state water quality standards.

Activities that increase the rate or volume of stormwater runoff will aggravate existing flooding problems and contribute to new ones. Activities that degrade runoff quality will cause quality problems in receiving water. Activities that fill floodplain or wetland areas will reduce flood storage and hydraulic capacity of waterbodies, and will degrade water quality by eliminating the filtering capacity of such areas.

These Rules and Standards protect the public health, welfare, and natural resources of the watershed by regulating the alteration of land and waters in the watershed to 1) reduce the severity and frequency of high water, 2) preserve floodplain and wetland storage capacity, 3) improve the chemical and physical quality of surface waters, 4) reduce sedimentation, 5) preserve the hydraulic and navigational capacities of waterbodies, 6) promote and preserve natural infiltration areas, and 7) preserve natural shoreline features. In addition to protecting natural resources, these Rules and Standards are intended to minimize future public expenditures on problems caused by land and water alterations.

RELATIONSHIP WITH MUNICIPALITIES AND COUNTY

The Commission recognizes that the control and determination of appropriate land use is the responsibility of the municipalities. The Commission will review projects involving land-disturbing activities in accordance with these Rules and Standards. The Commission intends to be active in the regulatory process to ensure that water resources are managed in accordance with its goals and policies.

The Commission desires to provide technical advice to the municipalities in the preparation of local stormwater management plans and the review of projects that may affect water resources prior to investment of significant public or private funds.

RULE A. DEFINITIONS

For the purposes of these Rules, unless the context otherwise requires, the following words and terms shall have the meanings set forth below. References in these Rules to specific sections of the Minnesota Statutes or Rules include amendments, revisions or recodifications of such sections. The words “shall” and “must” are mandatory; the word “may” is permissive.

100 Year Event. The rainfall depth with a 1 percent chance of occurring in a given year.

Abstraction. Removal of stormwater from runoff, by such methods as infiltration, evaporation, transpiration by vegetation, and capture and reuse, such as capturing runoff for use as irrigation water.

Agricultural Activity. The use of land for the production of agronomic, horticultural or silvicultural crops, including dairy animals, food animals, nursery stock, sod, fruits, vegetables, flowers, cover crops, grains, Christmas trees, and for grazing.

Alteration or Alter. When used in connection with public waters or wetlands, any activity that will change or diminish the course, current, or cross-section of public waters or wetlands.

Applicant. Any person or political subdivision that submits an application to the Commission for a project review under these Rules.

Best Management Practices (BMPs). Techniques proven to be effective in controlling runoff, erosion and sedimentation including those documented in the Minnesota Construction Site Erosion and Sediment Control Planning Handbook (BWSR 1988), Protecting Water Quality in Urban Areas (MPCA 2000), and the Minnesota Stormwater Manual (MPCA 2005) as revised.

Biofiltration. Using living material to capture and/or biologically degrade or process pollutants prior to discharging stormwater, such as directing runoff through a vegetated buffer or to a rain garden or vegetated basin with an underdrain.

Bioretention. A terrestrial-based (upland, as opposed to wetland) water quality and water quantity control process. Bioretention employs a simplistic, site-integrated design that provides opportunity for runoff infiltration, filtration, storage and water uptake by vegetation.

Buffer Strip. An area of natural, unmaintained, vegetated ground cover abutting or surrounding a watercourse or wetland.

BWSR. The Minnesota Board of Water and Soil Resources.

Commission. The Pioneer-Sarah Creek Watershed Management Commission.

Commissioners. The Board of Commissioners of the Pioneer-Sarah Creek Watershed Management Commission.

Compensatory Storage. Excavated volume of material below the floodplain elevation required to offset floodplain fill.

County. Hennepin County, Minnesota.

Dead Storage. The permanent pool volume of a water basin or the volume below the runout elevation of a water basin.

Detention Basin. Any natural or manmade depression for the temporary storage of runoff.

Development. Any proposal to subdivide land, any land-disturbing activity or creation of impervious surface.

Directly Connected Impervious Surface. Any hard surface (rooftop, driveway, sidewalk, roadway, etc.) from which runoff is not subject to loss beyond initial abstraction before being routed to the downstream collection and conveyance system.

Disturbance. See Land Disturbing Activity.

Drain or Drainage. Any method for removing or diverting water from waterbodies, including excavation of an open ditch, installation of subsurface drainage tile, filling, diking, or pumping.

Erosion. The wearing away of the ground surface as a result of wind, flowing water, ice movement, or land disturbing activities.

Erosion and Sediment Control Plan. A plan of BMPs or equivalent measures designed to control runoff and erosion and to retain or control sediment on land during the period of land disturbing activities in accordance with the standards set forth in these Rules.

Excavation. The artificial removal of soil or other earth material.

Fill. The deposit of soil or other material by artificial means.

Filtration. A process by which stormwater runoff is captured, temporarily stored, and routed through a filter bed to improve water quality and slow down stormwater runoff.

Floodplain. The area adjacent to a waterbody that is inundated during a 1% chance (100-year) flood, as defined by the FEMA Flood Insurance Study for the member City.

Impaired Water. A waterbody that does not meet state water quality standards and that has been included on the MPCA Section 303(d) list of Impaired Waters of the state.

Impervious Surface. A surface compacted or covered with material so as to be highly resistant to infiltration by runoff. Impervious surface shall include roads, driveways and parking areas, whether or not paved, sidewalks greater than 3 feet wide, patios, tennis and basketball courts, swimming pools, covered decks and other structures. Open decks with joints at least ¼ inch wide, areas beneath overhangs less than 2 feet wide, and sidewalks 3 feet or less wide shall not constitute impervious surfaces under these Rules.

Infiltration. The passage of water into the ground through the soil.

Infiltration Area. Natural or constructed depression located in permeable soils that capture, store and infiltrate the volume of stormwater runoff associated with a particular design event.

Interested Party. A person or political subdivision with an interest in the pending subject matter.

Land Disturbing Activity. Any change of the land surface to include removing vegetative cover, excavation, fill, grading, and the construction of any structure that may cause or contribute to erosion or the movement of sediment into waterbodies. The use of land for agricultural activities, or improvements such as mill an overlay or concrete rehabilitation projects that do not disturb the underlying soil, shall not constitute a land disturbing activity under these Rules.

Landlocked Basin. A basin that is 1 acre or more in size and does not have a natural outlet at or below the 1% chance (100-year) flood elevation as determined by the 1% chance (100-year), 10-day runoff event.

Low Floor. The finished surface of the lowest floor of a structure.

Member City. Any city wholly or partly within the Commission's boundary that has executed the Joint Powers Agreement.

MnDOT. The Minnesota Department of Transportation.

MPCA. The Minnesota Pollution Control Agency.

Municipality. Any city wholly or partly within the Commission's boundary.

NPDES. National Pollutant Discharge Elimination System.

NURP. The Nationwide Urban Runoff Program developed by the Environmental Protection Agency to study stormwater runoff from urban development.

Ordinary High Water Level (OHW). The elevation delineating the highest water level which has been maintained for a sufficient period of time to leave evidence upon the landscape,

commonly that point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial. For watercourses, the OHW level is the elevation of the top of the bank of the channel. If an OHW has been established for a waterbody by the Minnesota Department of Natural Resources, that will constitute the OHW under this definition.

Owner. The owner of a parcel of land or the purchaser under a contract for deed.

Parcel. A parcel of land designated by plat, metes, and bounds, registered land survey, auditor's subdivision, or other accepted means and separated from other parcels or portions by its designation.

Person. Any individual, trustee, partnership, unincorporated association, limited liability company or corporation.

Political Subdivision. A municipality, county or other political division, agency or subdivision of the state.

Project. A space, parcel, or parcels of real property owned by one or more than one person which is being or is capable of being developed or redeveloped as a single project.

Public Health and General Welfare. Defined in Minnesota Statutes, Section 103D.011, Subdivisions 23 and 24.

Public Waters. Any waters as defined in Minnesota Statutes, Section 103G.005, Subdivision 15.

Public Waters Wetland. Any wetland as defined in Minnesota Statutes, Section 103G.005, Subdivision 15a.

Redevelopment. Any proposal to re-subdivide land, or any land-disturbing activity or addition of impervious surface to a developed site.

Runoff. Rainfall, snowmelt or irrigation water flowing over the ground surface.

Sediment. Soil or other surficial material transported by surface water as a product of erosion.

Sedimentation. The process or action of depositing sediment.

Shoreland Protection Zone. Land located within a floodplain or within 1,000 feet of the OHW of a public water or public waters wetland or 300 feet of a public waters watercourse.

Site. A space, parcel, or parcels of real property owned by one or more than one person which is being or is capable of being developed or redeveloped as a single project.

Standard. A required level of quantity, quality, or value.

Stormwater Management Plan. A plan for the permanent management and control of runoff prepared and implemented in accordance with the standards set forth in these Rules.

Structure. Anything manufactured, constructed or erected which is normally attached to or positioned on land, including portable structures, earthen structures, walks, roads, water and storage systems, drainage facilities and parking lots.

Subdivision or Subdivide. The separation of a parcel of land into two or more parcels.

TMDL. A Total Maximum Daily Load is the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. “TMDL” can also refer to a study that calculates that load, or to the allocation of that allowable load to its various sources. An Implementation Plan may be part of the TMDL study or it may be a separate document that sets forth the steps that will be taken to achieve the TMDL.

Volume Management. The retention and abstraction of a certain volume of stormwater runoff onsite through techniques such as infiltration, evapotranspiration, and capture and reuse.

Water Basin. An enclosed natural depression with definable banks capable of containing water that may be partly filled with public waters.

Waterbody. All water basins, watercourses and wetlands as defined in these Rules.

Watercourse. Any natural or improved stream, river, creek, ditch, channel, culvert, drain, gully, swale, or wash in which waters flow continuously or intermittently in a definite direction.

Water Resources Management Plan. The watershed management plan for the Commission adopted and implemented in accordance with Minnesota Statutes, Section 103B.231.

Watershed. Region draining to a specific watercourse or water basin.

Wetland. Land transitional between terrestrial and aquatic systems as defined in Minnesota Statutes, Section 103G.005, Subdivision 19.

Wetland Conservation Act (WCA). Minnesota Wetland Conservation Act of 1991 as amended.

RULE B. PROCEDURAL REQUIREMENTS

- 1. APPLICATION REQUIRED.** Any person or political subdivision undertaking an activity for which a project review is required by these Rules shall first submit to the Commission a project review application, design data, plans, specifications, fees, and such other information and exhibits as may be required by these Rules. Applications shall be signed by the owner, or the owner's authorized agent, except for activities of a political subdivision which may be signed by either the owner or the general contractor. All project review applications must be authorized by the municipality where the proposed project is located.
- 2. FORMS.** Project review applications shall be submitted on forms provided by the Commission. Forms are available at the Commission office or Web site.
- 3. ACTION BY COMMISSION.** The Commission shall act within 60 days after receipt of a complete application, including all required information, exhibits and fees. If a state or federal law or court order requires a process to occur before the Commission acts on an application, or if an application requires prior approval of a state or federal agency, the deadline for the Commission to act is extended to 60 days after completion of the required process or the required prior approval is granted. The Commission may extend the initial 60-day period by providing written notice of the extension to the applicant. The extension may not exceed 60 days unless approved by the applicant.
- 4. SUBMITTAL.** A complete project review application with all required information and exhibits shall be filed with the Commission at least 14 calendar days prior to the scheduled meeting date of the Commission. Late or incomplete submittals will be scheduled to a subsequent meeting date.
- 5. CONDITIONS.** A project review may be approved subject to reasonable conditions to assure compliance with these Rules. The conditions may include a requirement that the applicant and owner enter into an agreement with the member city in a form acceptable to the Commission to a) specify responsibility for the construction and future maintenance of approved structures or facilities, b) document other continuing obligations of the applicant or owner, c) grant reasonable access to the proper authorities for inspection, monitoring and enforcement purposes, d) affirm that the Commission or other political subdivisions can require or perform necessary repairs or reconstruction of such structures or facilities, e) require indemnification of the Commission for claims arising from issuance of the approved project review or construction and use of the approved structures or facilities, and f) reimburse the reasonable costs incurred to enforce the agreement. Project reviews and agreements may be filed for record to provide notice of the conditions and continuing obligations.

6. **ISSUANCE OF PROJECT REVIEWS.** The Commission will issue a project review approval only after the applicant has satisfied all requirements of these Rules and paid all required fees.
7. **VALIDITY.** Issuance of a project review approval based on plans, specifications, or other data shall not prevent the Commission from thereafter requiring the correction of errors in the approved plans, specifications and data, or from preventing any activity being carried on thereunder in violation of these Rules.
8. **MODIFICATIONS.** The applicant shall not modify the approved activity or plans and specifications on file with the Commission without the prior approval of the Commission.
9. **INSPECTION AND MONITORING.** With permission of the property owner and under the authority of the member city, the Commission may perform such field inspections and monitoring of the approved activity as the Commission deems necessary to determine compliance with the conditions of the project review and these Rules. Any portion of the activity not in compliance shall be promptly corrected. In applying for a project review, the applicant consents to entry upon the land for field inspections and monitoring, or for performing any work necessary to bring the activity into compliance.
10. **SUSPENSION OR REVOCATION.** The Commission may suspend or revoke a project review approved under these Rules whenever the project review approval is issued in error or on the basis of incorrect information supplied, or in violation of any provision of these Rules, or if the preliminary and final project approvals received from the municipality or county are not consistent with the conditions of the approved project review.
11. **EXPIRATION OF COMMISSION APPROVALS.** An approved project review shall expire and become null and void if the approved activity is not commenced within one year from date of approval, or if the approved activity is suspended or abandoned for a period of one year from the date the activity originally commenced. With the approval of the affected member city, applicants may apply for an extension of that period if the city review process is extended beyond the usual review period. Before an activity delayed for one year or more can recommence, the project approval must be renewed. Any applicant may apply for an extension of time to commence the approved activity under an unexpired project review approval.

An application for renewal or extension must be in writing, and state the reasons for the renewal or extension. Any plan changes and required fees must be included with the application. There must be no unpaid fees or other outstanding violations of the approval being renewed or extended. An application for extension must be received by the Commission at least 30 days prior to the approval's expiration. The Commission shall consider the application for renewal or extension on the basis of the Rules in effect on the date the application is being considered. The Commission may extend the time for commencing the approved activity for a period not exceeding one year upon finding that

circumstances beyond the control of the applicant have prevented action from being taken.

- 12. SEVERABILITY.** If any provision of these Rules is adjudged unconstitutional or invalid by a court of competent jurisdiction, the remainder of these Rules shall not be affected thereby.

RULE C. GENERAL STANDARDS

- 1. POLICY.** It is the policy of the Commission to protect the water resources of the watershed by requiring that all activities within the watershed comply with minimum standards for the protection of water quality and the environment.
- 2. REGULATION.**
 - a) All land disturbing activities, whether requiring a project review under these Rules or otherwise, shall be undertaken in conformance with BMPs.
 - b) Project reviews are required of any land disturbing activity meeting the review thresholds set forth in Rule D Section 2.
 - c) In areas that drain to Impaired Waters, TMDL Implementation Plans may include site-specific requirements for any land-disturbing activities that are in addition to these rules and standards.
 - d) No person shall conduct land-disturbing activities without protecting adjacent property and waterbodies from erosion, sedimentation, flooding, or other damage.
 - e) Development shall be planned and conducted to minimize the extent of disturbed area, runoff velocities, and erosion potential, and to reduce and delay runoff volumes. Disturbed areas shall be stabilized and protected as soon as possible and facilities or methods used to retain sediment on-site.
 - f) Existing natural watercourses and vegetated soil surfaces shall be used to convey, store, filter, and retain runoff before discharge into public waters or a stormwater conveyance system.
 - g) Runoff from roof gutter systems shall discharge onto lawns or other pervious surfaces to promote infiltration where possible.
 - h) Use of fertilizers and pesticides in the shoreland protection zone shall be so done as to minimize runoff into public waters by the use of earth material, vegetation, or both. No phosphorus fertilizer shall be used unless a soil nutrient analysis shows a need for phosphorus or in the establishment of new turf.
 - i) When development density, topographic features, and soil and vegetation conditions are not sufficient to adequately handle runoff using natural features and vegetation, various types of constructed facilities such as diversions, settling basins, skimming

devices, dikes, waterways, and ponds may be used. The Commission encourages designs using surface drainage, vegetation and infiltration rather than buried pipes and man-made materials and facilities.

- j) Whenever the Commission determines that any land disturbing activity has become a hazard to any person or endangers the property of another, adversely affects water quality or any waterbody, increases flooding, or otherwise violates these Rules, the Commission shall notify the member city where the problem occurs and the member city shall require the owner of the land upon which the land disturbing activity is located, or other person or agent in control of such land, to repair or eliminate such condition within the time period specified therein. The owner of the land upon which a land disturbing activity is located shall be responsible for the cleanup and any damages from sediment that has eroded from such land. The Commission may require the owner to submit a project review application under these Rules before undertaking any repairs or restoration.

RULE D. STORMWATER MANAGEMENT

1. **POLICY.** It is the policy of the Commission to control excessive rates and volumes of runoff by:
 - a) Requiring that peak runoff rates not exceed existing conditions or the capacity of downstream conveyance facilities or contribute to flooding or streambank erosion.
 - b) Managing subwatershed discharge rates and flood storage volumes to be consistent with the goals of the Commission's water resources management plan and the local water resources management plans.
 - c) Controlling runoff rates by the use of on-site or if feasible regional detention or infiltration facilities.
 - d) Reviewing stormwater management structures based on the 1% (100-year) critical storm event for the drainage area.
 - e) Routing runoff to water treatment ponds or other acceptable facilities before discharging into waterbodies.
 - f) Promoting the use of natural resources for storing runoff and improving water quality and other amenities where appropriate.
 - g) Promoting natural infiltration of runoff.
2. **REGULATION.** No person or political subdivision shall commence a land disturbing activity or the development or redevelopment of land for the following types of projects without first submitting to and obtaining approval of a project review from the Commission or the city in which the project is located that incorporates a stormwater management plan for the activity, development or redevelopment:

- a) Plans of any land development or site development that disturbs more than 1 acre of land.
- b) Linear projects that create one acre or more of new impervious surface must meet all Commission requirements for the net new impervious surface.
- c) Plans of any land development or individual site development adjacent to or containing a lake, wetland, or a natural or altered watercourse as listed in the Hennepin County wetland inventory or the final inventory of Protected Waters and Wetlands for Hennepin County, as prepared by the DNR.
- d) Any culvert installation or replacement, bridge construction, stream cross-section alteration, or activity requiring a DNR Waters Permit.
- e) Plans for any land development or site development within the 1% chance (100-year) floodplain as defined by the Flood Insurance Study for the member city or the Commission's flood study.
- f) Plans of any land development or site development regardless of size, if such review is requested by a member city.
- g) Land disturbing activity that drains to more than one watershed, for that portion of the site draining into the Pioneer-Sarah Creek Watershed.

3. CRITERIA. Stormwater management plans shall comply with the following criteria regarding runoff rate restrictions, volume control requirements, and water quality requirements.

- a) A hydrograph method based on sound hydrologic theory will be used to analyze runoff for the design or analysis of flows, volumes, water quality, and water levels.
- b) *Runoff rates* for the proposed activity shall not exceed existing runoff rates for the 2-year, 10-year, and 100-year critical storm events and rainfall distribution for the project location as set forth in NOAA Atlas 14 Volume 8, published June 2013, or its successor, using the online NOAA Precipitation Frequency Data Server or a similar data source. Applicant must document the location and event depths used. If an approved local water management plan requires more restrictive rate control, then the more restrictive rate shall govern. Runoff rates may be restricted to less than the existing rates when necessary for the public health and general welfare of the watershed.
 - i) If detention basins are used to control rate of runoff they shall be designed to provide:
 - (1) An outlet structure to control the 2-year, 10-year, and 100-year critical storm events to predevelopment runoff rates. Said outlet structure will be required to control critical storm events to less than predevelopment runoff rates if downstream facilities have insufficient capacity to handle the increased flow.

- (2) Alternative to (1), runoff may be directed to a downstream facility within the same hydrologic subwatershed that has sufficient capacity to provide the required rate control. This means that no rate control may be required for an individual development provided there is a regional facility designed and constructed to accommodate the flow from this property.
- (3) An identified overflow spillway sufficiently stabilized to convey a 1% (100-year) critical storm event.
- (4) A normal water elevation above the OHW of adjacent waterbodies.
- (5) Access for future maintenance.
- (6) An outlet skimmer to prevent migration of floatables and oils for at least the two year storm event.
- (7) The low floor elevation shall be at minimum two feet above the critical event 100-year elevation and at minimum one foot above the emergency overflow elevation of nearby waterbodies and stormwater ponds.
- ii) Regional detention basins may be used to manage peak flow rates and meet water quality objectives when feasible.
- iii) Analysis of flood levels, storage volumes and flow rates for waterbodies and detention basins shall be based on the range of rainfall and snow melt duration producing the critical flood levels and discharges, whichever is most critical.
- iv) Landlocked water basins may be provided with outlets that:
 - (1) Retain a hydrologic regime complying with floodplain and wetland alterations.
 - (2) Provide sufficient storage below the outlet run-out elevation to retain back-to-back 100-year, 24-hour rainfalls and runoff above the highest anticipated groundwater elevation and prevent damage to property adjacent to the basin.
 - (3) Do not create adverse downstream flooding or water quality conditions.
- c) Stormwater runoff volume must be *infiltrated/abstracted* onsite in the amount equivalent to one point one inch (1.1") of runoff generated from new impervious surface.
 - i) Applicant must minimize the creation of new impervious surface, reduce existing impervious surfaces where possible, and minimize the amount of directly connected impervious surface.
 - ii) When using infiltration for volume reduction, runoff must be infiltrated within 48 hours. Infiltration volumes and facility sizes shall be calculated based on the measured infiltration rate determined by a double-ring infiltrometer test(s) conducted to the requirements of ASTM Standard D3385 at the proposed bottom elevation of the infiltration area. Other testing methods may be used with the approval of the Commission's Engineer. The measured infiltration rate shall be divided by the appropriate correction factor selected from the Minnesota

Stormwater Manual. This site investigation must be conducted by a licensed soil scientist or engineer.

- iii) A post-construction percolation test must be performed on each infiltration practice and must demonstrate that the constructed infiltration rate meets or exceeds the design infiltration rate prior to project acceptance by the city.
- iv) Infiltration areas will be limited to the horizontal areas subject to prolonged wetting.
- v) Areas of permanent pools tend to lose infiltration capacity over time and will not be accepted as an infiltration practice.
- vi) Stormwater runoff must be pretreated to remove solids before discharging to infiltration areas to maintain the long term viability of the infiltration areas.
- vii) Design and placement of infiltration BMPs shall be done in accordance with the Minnesota Department of Health guidance "Evaluating Proposed Stormwater Infiltration Projects in Vulnerable Wellhead Protection Areas," as amended.
- viii) Constructed bioretention and infiltration practices such as rain gardens, infiltration trenches, and infiltration benches shall not be used in:
 - (1) Fueling and vehicle maintenance areas;
 - (2) Areas with less than 3 feet separation from the bottom of the infiltration system to the elevation of seasonal high groundwater;
 - (3) Areas with runoff from industrial, commercial and institutional parking lots and roads and residential arterial roads with less than 5 feet separation distance from the bottom of the infiltration system to the elevation of seasonal high groundwater;
 - (4) Areas within 400 feet of a community water well, within 100 feet of a private well, or within a delineated 1-year time of travel zone in a wellhead protection area;
 - (5) Sites documented to contain contaminated soils or groundwater.
- ix) Credit towards compliance with the abstraction requirement in (c) may be achieved by:
 - (1) Meeting post construction soil quality and amendment depth requirements. Areas that will be subjected to clearing, grading, or compaction that will not be covered by impervious surface, incorporated into a drainage facility, or engineered as structural fill or slope may be included in the credit calculation if they meet post construction soil quality and amendment depth requirements. Soil amendment areas become part of the site's storm drainage system, and must be protected by a utility and drainage easement and be included in the site's utility maintenance agreement. The applicant may compute a credit of 0.5 inches over the soil amendment area and apply that toward the abstraction volume requirement.

- (a) A minimum 8-inch depth of compost amended soil or imported topsoil shall be placed in all areas of the project site being considered for the abstraction credit. Before the soil is placed, the subsoil must be scarified (loosened) at least 4 inches deep, with some incorporation of the amended soil into the existing subsoil to avoid stratified layers.
 - (b) Soil amendment may be achieved by either mixing 2 inches of approved compost into the 8 inches of soil depth, or by mixing a custom-calculated amount of compost to achieve 8 inches of uncompacted soil depth with a minimum organic content of five percent.
 - (c) The amended areas must pass a 12-inch probe test during the site final inspection, in accordance with the Commission's testing procedure. Once amended, soil areas must be protected from recompaction.
- (2) Preserving undisturbed forest or grassland conservation areas. Conservation areas must remain undisturbed during construction and must be protected by a permanent conservation easement prescribing allowable uses and activities on the parcel and preventing future development. A long-term vegetation management plan describing methods of maintaining the conservation area in a natural vegetative condition must be submitted with the stormwater management plan. The applicant may compute a credit of 0.5 inches over the conservation area and apply that toward the abstraction volume requirement.
- (3) Providing wetland buffers in excess of minimum requirements. Areas eligible for credit must meet all wetland buffer requirements, must be monumented and shown on the construction plans. The applicant may compute a credit of 0.5 inches over the excess buffer area and apply that toward the abstraction volume requirement.
- (4) Disconnecting impervious surface by redirecting runoff across a pervious surface or into an engineered bioinfiltration facility. Impervious disconnection must be designed to prevent any reconnection of runoff with the storm drain system. The applicant may subtract the disconnected impervious surface area from the total impervious surface area used to compute the required abstraction volume.
- x) Alternative to (c), runoff may be directed to a downstream facility within the same hydrologic subwatershed that has sufficient capacity to provide the required volume management. This means that no volume management may be required for an individual development provided there is a regional facility designed and constructed to accommodate the volume from this property.
- d) Where infiltration is not advisable or infeasible due to site conditions, *biofiltration* must be provided for that part of the abstraction volume that is not abstracted by other BMPs. Where biofiltration is infeasible, at a minimum filtration through a medium that incorporates organic material, iron fillings, or other material to reduce soluble phosphorus must be provided.

- e) There shall be *no net increase in total phosphorus (TP) or total suspended solids (TSS)* from pre-development land cover to post-development land cover. Pre-development land cover is defined as the predominant land cover over the previous 10 years. The TP and TSS export coefficients to be used to calculate predevelopment and post-development land use loadings are set forth in Commission project review guidance.
 - i) Full infiltration of one point one (1.1) inches of runoff from all impervious surface will satisfy (e).
 - ii) If it is not feasible to achieve the full 1.1 inch infiltration requirement, a combination of BMPs may be used to achieve the no-net-increase requirement.
 - iii) If permanent sedimentation and water quality ponds are used they shall be designed to the Wet Pond Design Standards set forth on Appendix A to these Rules and provide:
 - (1) Water quality features consistent with NURP criteria and best management practices.
 - (2) A permanent wet pool with dead storage of at least the runoff from a 2.5-inch storm event.
 - iv) Alternative to (e), runoff may be directed to a downstream facility within the same hydrologic subwatershed that has sufficient capacity to provide the required treatment. This means that no treatment may be required for an individual development provided there is a regional facility designed and constructed to accommodate the flow from this property.

4. **WAIVERS.**

- a) The Commission may waive the on-site runoff rate, volume and water quality control design criteria as noted above, if a municipality has an off-site stormwater facility that provides equivalent control and treatment of runoff that conforms to Commission standards.
- b) The design criteria for infiltration may be waived for sites with total impervious surface of less than one acre if infiltration BMPs have been incorporated to the maximum extent possible.

5. **EXHIBITS.** The following exhibits shall accompany the project review application (one set full size, one set reduced to a maximum size of 11" x 17", and one electronic set in pdf format). All plans must be signed by a licensed professional engineer registered in Minnesota.

- a) Property lines and delineation of lands under ownership of the applicant.
- b) Delineation of the subwatershed contributing runoff from off-site, proposed and existing subwatersheds on-site, emergency overflows and watercourses.
- c) Proposed and existing stormwater facilities location, alignment and elevation.

- d) Delineation of existing on-site wetland, marsh, shoreland and floodplain areas.
 - e) Where infiltration or filtration is used as a stormwater management practice, identification, description, results of double-ring infiltrometer tests, and permeability and approximate delineation of site soils and seasonal high groundwater elevation in both existing and proposed as-developed condition.
 - f) Existing and proposed ordinary high and 1% chance (100-year) water elevations on-site.
 - g) Existing and proposed site contour elevations at 2-foot intervals, referenced to NAVD (1988 datum). If NAVD 1988 is not used, applicant must specify the datum used and the appropriate conversion factor.
 - h) Construction plans and specifications of all proposed stormwater management facilities, including design details for outlet controls.
 - i) Runoff volume and rate analysis for the 2-year, 10-year, and 100-year critical storm events, existing and proposed.
 - j) Pre-construction and post-construction annual runoff volume (ac-ft), annual total phosphorus (lbs/yr), and annual total suspended solids (lb/yr).
 - k) All hydrologic, water quality and hydraulic computations made in designing the proposed stormwater management facilities.
 - l) A narrative describing the pre-and post-construction drainage conditions and the post-construction BMPs incorporated in the plans.
 - m) Applications requesting a soil management credit must include a Soil Management Plan (SMP) that shall include an 11" x 17" or larger site map indicating areas where soils will be amended, and calculations for soil volumes to be stockpiled and amounts and specifications of amendment or topsoil to be imported to achieve specified minimum organic matter content.
 - n) Delineation of any ponding, flowage or drainage easements, or other property interests, to be dedicated for stormwater management purposes.
6. **MAINTENANCE.** All stormwater management structures and facilities shall be maintained in perpetuity to assure that the structures and facilities function as originally designed. The owner of any water quality treatment device if not a governmental unit shall provide to the member city, in a form acceptable to the Commission, a recordable agreement detailing an operations and maintenance plan that assures that the structure(s) will be operated and maintained as designed.
7. **EASEMENTS.** The member city shall obtain from the applicant, in form acceptable to the Commission, recordable temporary and perpetual easements for ponding, flowage and drainage purposes over hydrologic features such as waterbodies, wetlands, buffers, floodplain and stormwater basins and other permanent BMPs. The easements shall include the right of reasonable access for inspection, monitoring, maintenance and enforcement purposes.

8. **COVENANTS.** The Commission may require as a condition of project review approval that the member city shall require that the land be subjected to restrictive covenants or a conservation easement, in form acceptable to the Commission, to prevent the future expansion of impervious surface and the loss of infiltration capacity.

RULE E. EROSION AND SEDIMENT CONTROL

1. **POLICY.** It is the policy of the Commission to control runoff and erosion and to retain or control sediment on land during land disturbing activities by requiring the preparation and implementation of erosion and sediment control plans.
2. **REGULATION.** No person or political subdivision shall commence a land disturbing activity or the development or redevelopment of land for which a project review is required under Rule D without first submitting to and obtaining approval of a project review from the Commission that incorporates an erosion and sediment control plan for the activity, development or redevelopment.
3. **CRITERIA.** Erosion and sediment control plans shall comply with the following criteria:
 - a) Erosion and sediment control measures shall be consistent with best management practices as demonstrated in the most current version of the MPCA manual "Protecting Water Quality in Urban Areas," and shall be sufficient to retain sediment on-site.
 - b) Erosion and sediment controls shall meet the standards for the General Permit Authorization to Discharge Storm Water 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.
 - c) All erosion and sediment controls shall be installed before commencing the land disturbing activity, and shall not be removed until completion.
 - d) The activity shall be phased when possible to minimize disturbed areas subject to erosion at any one time.
4. **EXHIBITS.** The following exhibits shall accompany the project review application (one set full size, one set reduced to a maximum size of 11" x 17", and one electronic set in pdf format). Erosion and sediment control plans must be prepared by a qualified professional.
 - a) An existing and proposed topographic map showing contours on and adjacent to the land, property lines, all hydrologic features, the proposed land disturbing activities, and the locations of all runoff, erosion and sediment controls and soil stabilization measures.

- b) Plans and specifications for all proposed runoff, erosion and sediment controls, and temporary and permanent soil stabilization measures.
 - c) Detailed schedules for implementation of the land disturbing activity, the erosion and sediment controls, and soil stabilization measures.
 - d) Detailed description of the methods to be employed for monitoring, maintaining and removing the erosion and sediment controls, and soil stabilization measures.
 - e) Soil borings if requested by the Commission.
5. **MAINTENANCE.** The project review applicant shall be responsible for proper operation and maintenance of all erosion and sediment controls and soil stabilization measures, in conformance with best management practices and the NPDES permit. The project review applicant shall, at a minimum, inspect and maintain all erosion and sediment controls and soil stabilization measures daily during construction, weekly thereafter, and after every rainfall event exceeding 0.5 inches, until vegetative cover is established.

RULE F. FLOODPLAIN ALTERATION

1. **POLICY.** It is the policy of the Commission to prevent and control flooding damage by:
- a) Preserving existing water storage capacity below the 100-year critical flood elevation on all waterbodies in the watershed to minimize the frequency and severity of high water.
 - b) Minimizing development in the floodplain that will unduly restrict flood flows or aggravate known high water problems.
 - c) Requiring compensatory storage for floodplain fill.
2. **REGULATION.** No person or political subdivision shall alter or fill land below the 100-year critical flood elevation of any public waters watercourse, public waters wetland, or other wetland without first obtaining an approved project review from the Commission.
3. **CRITERIA.**
- a) Floodplain alteration or filling shall not cause a net decrease in flood storage capacity below the projected 1% (100-year) critical flood elevation or alter the timing of flooding unless it is shown that the proposed alteration or filling, together with the alteration or filling of all other land on the affected reach of the waterbody to the same degree of encroachment as proposed by the applicant, will not cause high water or aggravate flooding on other land and will not unduly restrict flood flows.
 - b) All new structures shall be constructed with the low floor at the elevation required in the municipality's ordinance, however, in no case shall the low floor be less than two feet above the regulatory elevation.

- 4. EXHIBITS.** The following exhibits shall accompany the project review` application (one set full size, one set reduced to a maximum size of 11" x 17", and one electronic set in pdf format):
- a) Site plan showing boundary lines, delineation and existing elevation contours of the work area, ordinary high water level, and 1% (100-year) critical flood elevation. All elevations shall be referenced to the NAVD 1988 datum. If NAVD 1988 is not used, applicant must specify the datum used and the appropriate conversion factor.
 - b) Grading plan showing any proposed elevation changes.
 - c) Preliminary plat of any proposed subdivision.
 - d) Determination by a registered professional engineer of the 100-year critical flood elevation before and after the proposed activity.
 - e) Computation of the change in flood storage capacity as a result of the proposed alteration or fill.
 - f) Erosion and sediment control plan which complies with these Rules.
 - g) Soil boring logs and report if available.
- 5. EXCEPTIONS.** If a municipality has adopted a floodplain ordinance that prescribes an allowable degree of floodplain encroachment, the applicable ordinance shall govern the allowable degree of encroachment and no project review will be required under this Floodplain Alteration Rule.

RULE G. WETLAND ALTERATION

- 1. POLICY.** It is the policy of the Commission to preserve and protect wetlands for their water quality, stormwater storage, habitat, aesthetic, and other attributes by:
- a) Achieving no net loss in the quantity, quality and biological diversity of wetlands in the watershed.
 - b) Increasing the quantity, quality and biological diversity of wetlands in the watershed by restoring or enhancing diminished or drained wetlands.
 - c) Enforcing mitigation of direct or indirect impacts from activities that destroy or diminish the quantity, quality and biological diversity of watershed wetlands.
 - d) Replacing affected wetlands where sequencing demonstrates that avoidance is not feasible.
- 2. REGULATION.** No person or political subdivision shall drain, fill, excavate or otherwise alter a wetland without first obtaining the approval of a wetland replacement plan from the local government unit with jurisdiction over the activity. Mitigation of wetland impacts will be considered in the following sequence: 1) mitigated by enhancing the

impacted wetland; 2) mitigated within the subcatchment of the impacted wetland; 3) mitigated in the drainage area of the impacted wetland; 4) mitigated in the watershed of the impacted wetland; 5) mitigated through purchase of wetland bank credits.

3. **CRITERIA.**

- a) Any drainage, filling, excavation or other alteration of a wetland shall be conducted in compliance with Minnesota Statutes, section 103G.245, the Wetland Conservation Act, and regulations adopted thereunder.
- b) A wetland may be used for stormwater storage and treatment only if pre-treatment is provided and the use will not adversely affect the function and public value of the wetland as determined by the local government unit.
- c) Other activities which would change the character of a wetland shall not diminish the quantity, quality or biological diversity of the wetland.

4. **LOCAL GOVERNMENT UNIT.** The Commission will serve as the local government unit (LGU) for administration of the Wetland Conservation Act (WCA) for those cities that have designated the Commission to serve in that capacity. If a member city has not designated the Commission as the LGU for the administration of the WCA, they shall be responsible for administering the WCA. MnDOT serves as the LGU on its right of way.

RULE H. BRIDGE AND CULVERT CROSSINGS

- 1. **POLICY.** It is the policy of the Commission to maintain channel profile stability and conveyance capacity by regulating crossings of watercourses for driveways, roads and utilities.
- 2. **REGULATION.** No person or political subdivision shall construct or improve a road, driveway or utility crossing across any public waters watercourse or county ditch without first submitting to the Commission and receiving approval of a project review.
- 3. **CRITERIA.** Crossings shall:
 - a) Retain adequate hydraulic capacity to pass the 100-year flow and maintain the 100-year flow profile, if available.
 - b) Mimic the existing base flow (1-year, 2-year) conditions.
 - c) Not adversely affect water quality.
 - d) Represent the "minimal impact" solution to a specific need with respect to all reasonable alternatives.
 - e) Allow for future erosion, scour, and sedimentation maintenance considerations.

- f) If the project proposes changing the FEMA FIS profile,, a FEMA map revision must be obtained.
- g) If the project requires a DNR Work in Public Waters permit, the conditions of that permit must be satisfied.

4. EXHIBITS. The following exhibits shall accompany the project review application (one set full size, one set reduced to a maximum size of 11" x 17", and one electronic set in pdf format):

- a) Construction plans and specifications.
- b) Analysis prepared by a registered professional engineer showing the effect of the project on hydraulic capacity and water quality.
- c) An erosion and sediment control plan that complies with these Rules.

5. MAINTENANCE.

- a) The maintenance, reconstruction and stabilization of any public crossing shall be the responsibility of the political subdivision with jurisdiction over the crossing.
- b) The maintenance, reconstruction and stabilization of any private crossing shall be the responsibility of the owner of the crossing.
- c) If a crossing over any public waters watercourse is determined by the Commission to be causing significant erosion, the Commission may notify the member city where said crossing is located and the member city may order the owner of the crossing to make necessary repairs or modifications to the crossing and outlet channel.

RULE I. BUFFER STRIPS

- 1. POLICY.** It is the policy of the Commission to maintain the water quality and ecological functions provided by watercourses and wetlands by requiring the development of vegetated buffers around watercourses, lakes and wetlands where development and redevelopment occurs, and to encourage the installation of vegetated buffers around all watercourses and wetlands. Vegetative buffers reduce the impact of surrounding development and land use on watercourse, lake and wetland functions by stabilizing soil to prevent erosion, filtering sediment from runoff, and moderating water level fluctuations during storms. Buffers provide essential habitat for wildlife. Requiring buffers recognizes that watercourse, lake and wetland quality and function are related to the surrounding upland.
- 2. REGULATION.** No person or political subdivision shall commence a land disturbing activity or the development or redevelopment of land for which a project review is required under Rule D on land that contains or is adjacent to a watercourse, lake or wetland

without first submitting to and obtaining approval of a project review from the Commission that incorporates a vegetated buffer strip between the development or redevelopment and the watercourse or wetland.

3. GENERAL PROVISIONS.

- a) This Rule shall apply to all lands containing or abutting watercourses, lakes or wetlands that are subject to a project review under these Rules. Watercourses, lakes and wetlands shall be subject to the requirements established herein, and other applicable federal, state and local ordinances and regulations. If a municipality has a buffer strip requirement that has been reviewed and approved by the Commission, the municipal regulation shall have precedence over the Commission's Rules.
- b) An applicant shall determine whether any watercourse, lake or wetland exists, and shall delineate the boundary for any wetland on the land. An applicant shall not be required to delineate wetlands on adjacent property, but must review available information to estimate the wetland boundary.
- c) Documentation identifying the presence of any watercourse, lake or wetland on the applicant's land, including wetland delineation and buffer strip vegetation evaluation, must be provided to the Commission with a project review application.
- d) Wetland and buffer strip identifications and delineations shall be prepared in accordance with state and federal regulations.

4. CRITERIA. The following standards apply to all lands that contain or abut a watercourse, lake or wetland:

- a) BMPs shall be followed to avoid erosion and sedimentation during land disturbing activities.
- b) When a buffer strip is required the applicant shall, as a condition to issuance of an approved project review:
 - i) Submit to the member city, in a form acceptable to the Commission, a recordable conservation easement for protection of approved buffer strips. The easement shall describe the boundaries of the watercourse or wetland and buffer strips, identify the monuments and monument locations, and prohibit any of the alterations set forth in Paragraph 5(e) below and the removal of the buffer strip monuments within the buffer strip or the watercourse or wetland.
 - ii) Submit to the member city, in a form acceptable to the Commission, an executed buffer maintenance plan and agreement for the first two growing seasons following establishment, and providing an escrow or an alternate surety to assure successful vegetation establishment.
 - iii) Install the wetland monumentation required by Paragraph 7 below.

- c) All open areas within the buffer strip shall be seeded or planted in accordance with Paragraph 8 below. All seeding or planting shall be completed prior to removal of any erosion and sediment control measures. If construction is completed after the end of the growing season, erosion and sediment control measures shall be left in place and all disturbed areas shall be mulched for protection over the winter season.

5. BUFFER STRIPS.

- a) A buffer strip shall be maintained around the perimeter of all watercourses, lakes or wetlands. The buffer strip provisions of this Rule shall not apply to any parcel of record as of the date of this Rule until such parcel is developed or redeveloped or unless required by a previous project review. The Commission does, however, strongly encourage the installation of buffer strips on all parcels in the watershed.
- b) Buffer strips on watercourses, lakes, and wetlands shall be an average 25 feet wide and a minimum of 10 feet wide. It is recommended that all structures have a minimum 15 foot setback from the buffer strip.
- c) Buffer strips shall apply whether or not the watercourse or wetland is on the same parcel as a proposed development.
- d) Buffer areas disturbed by grading operations must be finish graded to a slope of 6:1 or less or an increase in width of five (5) feet for each one (1) foot decrease in horizontal width (i.e., a 25 required foot buffer width at a 5:1 slope must be 30 feet wide, 4:1 must be 35 feet wide, and 3:1 must be 40 feet wide.)
- e) Buffer strip vegetation shall be established and maintained in accordance with Paragraph 8 below. Buffer strips shall be identified within each parcel by permanent monumentation in accordance with Paragraph 7 below.
- f) Subject to Paragraph 5(g) below, alterations including building, storage, paving, mowing, plowing, introduction of noxious vegetation, cutting, dredging, filling, mining, dumping, grazing livestock, agricultural production, yard waste disposal or fertilizer application, are prohibited within any buffer strip. Noxious vegetation shall be removed to meet state standards. Alterations would not include plantings that enhance the natural vegetation or selective clearing or pruning of trees or vegetation that are dead, diseased or pose similar hazards.
- g) The following activities shall be permitted within any buffer strip, and shall not constitute prohibited alterations under Paragraph 5(f) above:
 - i) Use and maintenance of an unimproved access strip through the buffer, not more than 20 feet in width, for recreational access to the watercourse, lake or wetland and the exercise of riparian rights.
 - ii) Placement, maintenance, repair or replacement of utility and drainage systems that exist on creation of the buffer strip or are required to comply with any subdivision approval or building permit obtained from the municipality or county,

so long as any adverse impacts of utility or drainage systems on the function of the buffer strip have been avoided or minimized to the extent possible.

- iii) Construction, maintenance, repair, reconstruction, or replacement of existing and future public roads crossing the buffer strip, so long as any adverse impacts of the road on the function of the buffer strip have been avoided or minimized to the extent possible.

6. ALTERNATE WETLAND PROTECTION METHODS.

- a) Should application of the buffer standards in Paragraph 5 above render a parcel of record as of the date of this Rule unbuildable based on current city ordinances, the Watershed engineer may allow alternative methods to protect the wetland. Such methods must include a buffer strip no less than ten feet wide, supplemented by redirection of drainage to a wider area of buffer, or to a Best Management Practice such as a rain garden or vegetated swale.
- b) The use of alternative wetland protection methods will be evaluated as part of the review of a stormwater management plan under these Rules. Alternative wetland protection methods must be in keeping with the spirit and intent of this Rule.

7. MONUMENTATION. A monument shall be required at each parcel line where it crosses a buffer strip and shall have a maximum spacing of 200 feet along the edge of the buffer strip. Additional monuments shall be placed as necessary to accurately define the edge of the buffer strip. A monument shall consist of a post and a buffer strip sign meeting Commission standards. The signs shall include warnings about mowing, disturbing or developing the buffer strip.

8. VEGETATION.

- a) Where acceptable natural vegetation exists in buffer strip areas, the retention of such vegetation in an undisturbed state is required unless an applicant receives approval to replace such vegetation. A buffer strip has acceptable natural vegetation if it:
 - i) Has a continuous, dense layer of native vegetation that has been uncultivated or unbroken for at least 5 consecutive years; or
 - ii) Has an overstory of native trees and/or shrubs that has been uncultivated or unbroken for at least 5 consecutive years; or
 - iii) Contains a mixture of the plant communities described in Subparagraphs 8(a)(i) and (ii) above that has been uncultivated or unbroken for at least 5 years.
- b) Notwithstanding the performance standards set forth in Paragraph 8(a), the Commission may determine existing buffer strip vegetation to be unacceptable if:
 - i) It contains undesirable plant species including but not limited to common buckthorn, reed canary grass, or species on the Minnesota State Noxious Weeds List; or

- ii) It has topography that tends to channelize the flow of runoff; or
 - iii) For some other reason it is unlikely to retain nutrients and sediment.
 - iv) Where buffer strips are not vegetated or have been cultivated or otherwise disturbed within 5 years of the project review application, such areas shall be replanted and maintained with native vegetation. The buffer strip plantings must be identified on the project review application. Acceptable buffer strip design and planting methods are detailed in the reference document “Restoring and Managing Native Wetland and Upland Vegetation” (Jacobson 2006, prepared for BWSR and MnDOT).
- c) Buffer strip vegetation shall be established and maintained in accordance with the requirements found in this Paragraph. During the first two full growing seasons, the owner must replant any buffer strip vegetation that does not survive. The owner shall be responsible for reseeding and/or replanting if the buffer strip changes at any time through human intervention or activities. At a minimum the buffer strip must be maintained as a “no mow” area.

9. ENCROACHMENT.

- a) Buffer strips must be kept free of all materials, equipment and structures, including fences and play equipment. Buffer strips must not be grazed, cropped, logged or mown except as approved by the Commission. The topography of the buffer strips shall not be altered by any means, including paving, plowing, cutting, dredging, filling, mining, or dumping.
- b) Variances.
 - i) Only variances meeting the standards and criteria set forth in Rule K shall be granted.
 - ii) Variances shall not be granted that would circumvent the intent and purposes of this Rule.

RULE J. FEES

- 1. POLICY.** The Commission finds that it is in the public interest to require applicants to pay the cost of administering and reviewing project review applications, and inspecting approved activities to assure compliance with these Rules, rather than using the Commission’s annual administrative levy for such purposes. The Commission shall by resolution establish a schedule of fees that may be amended from time to time to reflect the cost of providing each service.
- 2. APPLICATION.** Each application for the issuance, transfer or renewal of a project review recommendation under these Rules shall be accompanied by an application fee to defray the cost of processing the application.

3. **REVIEW.** A project review applicant under these Rules shall pay a fee for the cost of the review and analysis of the proposed activity, including services of engineering, legal, and other consultants. The review fee shall be payable upon the submission of the project review application.
4. **WETLAND MITIGATION PLAN.** A project review applicant under these rules shall pay a fee for the cost of the review and analysis of a proposed activity involving a wetland mitigation plan in a municipality where the Commission is the LGU. The fee is to cover the costs of engineering, legal, and other consultants and shall be payable upon the submission of the project review application. Should the cost of said wetland mitigation plan review exceed the review fee, the application shall deposit such additional sums as are needed to pay such costs. Failure to pay such costs is grounds to deny the application or suspend review.
5. **WETLAND MITIGATION PLAN MONITORING.** A project review applicant under these rules in a municipality where the Commission is the LGU shall deposit an escrow to cover the cost of Commission monitoring and annual monitoring plan review for the five-year period. If the escrow amount is insufficient to cover the costs the Commission may require additional funds from the applicant.
6. **WETLAND MITIGATION SECURITY DEPOSIT.** A project review applicant under these rules in a municipality where the Commission is the LGU shall provide a security to assure that the replacement plan is followed. The amount of the security shall be calculated on a case-by-case basis based on the estimated cost of construction, follow up and contingency. The security may also include an amount determined by the Commission to be sufficient to protect the public in the event the replacement plan does not succeed.
7. **DEPOSITS.** The Commission will maintain an accounting for all deposits made under this Rule. No interest will be paid to applicants for funds held in deposit.

RULE K. VARIANCES

1. **WHEN AUTHORIZED.** The Commission may grant variances from the literal provisions of these Rules. A variance shall only be granted when in harmony with the general purpose and intent of the Rules in cases where strict enforcement of the Rules will cause practical difficulties or particular hardship, and when the terms of the variance are consistent with the Commission's water resources management plan and Minnesota Statutes, chapter 103D.
2. **HARDSHIP.** "Hardship" as used in connection with the granting of a variance means the land in question cannot be put to a reasonable use if used under the conditions allowed by these Rules; the plight of the applicant is due to circumstances unique to the land and

not created by the applicant; and the variance, if granted, will not adversely affect the essential character of the locality and other adjacent land. Economic considerations alone shall not constitute a hardship if a reasonable use for the land exists under the terms of these Rules. Conditions may be imposed in the granting of a variance to insure compliance and to protect adjacent land and the public health and general welfare of the Commission.

3. **PROCEDURE.** An application for a variance shall describe the practical difficulty or particular hardship claimed as the basis for the variance. The application shall be accompanied with such surveys, plans, data and other information as may be required by the Commission to consider the application.
4. **VIOLATION.** A violation of any condition imposed in the granting of a variance shall be a violation of these Rules and shall automatically terminate the variance.

RULE L. ENFORCEMENT

1. **ADMINISTRATION.** These Rules shall be administered by the Commission. The Commission shall consider applications required under these Rules and determine whether such applications should be approved, approved with conditions, or denied. Such determination shall be communicated to the member city in which the project lies and to the applicant.
2. **IMPLEMENTATION BY MEMBER CITIES.** It shall be the duty of each city to enforce and implement such determinations by the Commission under the various permitting processes and regulations of the city. Each city shall make such amendments to its official controls, regulations, and permitting processes as are necessary to provide it with the authority to enforce and implement the determinations of the Commission.
3. **FAILURE BY CITY TO IMPLEMENT.** Upon a determination by the Commission that a city has not enforced or implemented a decision of the Commission in the administration of these Rules, the Commission shall notify the city of such determination and direct that appropriate action be taken by the city. If the city does not take such action, the Commission may take such legal steps as are available to it to effect such enforcement or implementation.

RULE M. AMENDMENT OF THESE RULES

1. **AMENDMENT.** These rules may be amended from time to time by the Commission. Proposed amendments shall be reviewed by the member cities prior to adoption unless the Commission determines that said amendment is of a minor or technical nature. Minor or technical amendments include recodifying or streamlining the rules, clarifying

policies, or other actions that do not adversely affect a member city or impact the Commission's or member cities' ability to meet their water management plan goals.

2. **PROCEDURE.** Proposed major amendments to these rules shall be first considered by the Commission and then forwarded to the member cities for a 45-day comment period. Following that comment period, the Commission shall consider the proposed amendment and the comments received for approval. All amendments shall be made by resolution.

PIONEER-SARAH CREEK WATERSHED MANAGEMENT COMMISSION
RULES APPENDIX A
WET POND DESIGN STANDARDS

Permanent Pool Depth	Average 4', maximum 10'
Permanent Pond Surface Area	Greater of 2% of watershed's impervious area and 1% of the watershed
Permanent Pool Length to Width Ratio	3:1 or greater with an irregularly shaped shoreline
Side Slopes	10:1 for 10-foot bench centered on the normal water elevation and between 3:1 and 20:1 elsewhere
Side Slope Stabilization	Native seed with mix 33-261 (MnDOT 310), 34-271 (BWSR W2) or equivalent between NWL and HWL, provide 10' buffer where possible with mix 35-221 (MnDOT 330 (dry)) or mix 35-241 (MnDOT 350 (mesic))
Floatable Removal	Skimming device discharging at no greater than 0.5 fps during the 2-year event or a submerged outlet with a minimum 0.5 feet from the normal water level to the crown of the outlet pipe
Sediment Accumulation Area	Provide maintenance pads to remove sediment deltas at inlets
Permanent Pool Volume	A 4-foot mean depth and equal to 2.5-inch rain over the watershed
Source	Protecting Water Quality in Urban Areas (MPCA 2000)

SUMMARY

**Pioneer-Sarah Creek Watershed Management Commission
Management Rules and Standards***

	Standard	Purpose	Applicability
Project Reviews Required	A Stormwater Management Plan consistent with all applicable management rules and standards* must be reviewed and approved prior to commencement of land disturbing activities.	To control excessive rates and volumes of runoff; manage subwatershed discharge rates and flood storage volumes; improve water quality; protect water resources; and promote natural infiltration of runoff.	All development or redevelopment projects of the following types: <ul style="list-style-type: none"> • Projects disturbing more than one acre of land • Projects within the 100-year floodplain • Projects adjacent to or within a lake, wetland, or watercourse • Any land disturbing activity requested by a member city to be reviewed regardless of project size • Linear projects creating more than one acre of new impervious surface
Rate Control	Peak runoff rates may not exceed existing rates for the 2-year, 10-year, and 100-year critical storm event; or the capacity of downstream conveyance facilities; or contribute to flooding	To control excessive rates and volumes of runoff; manage subwatershed discharge rates and flood storage volumes	All projects disturbing more than one acre of land. Redevelopment projects disturbing less than 50 percent of the site must meet the requirement only for the disturbed area.
Volume Management	1.1 inch of impervious surface runoff must be abstracted on site within 48 hours	To control excessive rates and volumes of runoff; manage discharge rates and flood storage volumes; protect stream channels from erosion; and promote natural infiltration of runoff.	All projects disturbing more than one acre of land. Redevelopment projects disturbing less than 50 percent of the site must meet the requirement only for the disturbed area.
Erosion and Sediment Control	Erosion control plan using Best Management Practices (BMPs) and consistent with the NPDES General Construction Permit is required	To control erosion and sediment so as to protect conveyance systems and water quality	All projects requiring a project review
Floodplain Alteration	Compensating storage is required to mitigate floodplain fill	To prevent and control flooding damage	All development or redevelopment projects within the 100-year floodplain regardless of project size
Water Quality	No net increase in total phosphorus and total suspended sediment annual load	To protect water quality	All projects disturbing more than one acre of land. Redevelopment projects disturbing less than 50 percent of the site must meet the requirement only for the disturbed area.
Buffer Strips	Vegetated buffer strips average 25 foot, minimum 10 foot wide adjacent to lakes, wetlands and other watercourses	To protect water quality; reduce erosion and sedimentation; reduce pollutants from runoff and debris; and provide habitat	All projects requiring a project review that contain or abut a wetland or watercourse
Wetland	Wetlands may not be drained, filled, excavated, or otherwise altered without an approved wetland replacement plan from the local government unit (LGU) with jurisdiction	To preserve and protect wetlands for their water quality, stormwater storage, habitat, aesthetic, and other attributes	All land disturbing activity impacting a wetland as defined by the Wetland Conservation Act (WCA)

*Important Note: Approved TMDL Implementation Plans may have additional site-specific requirements.

Appendix D

Monitoring Program

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**Pioneer-Sarah Creek Watershed Management Commission
Fourth Generation Watershed Management Plan
Monitoring Program**

Minnesota Rules 8410.0100 Subp. 5 states that:

A. Each plan must establish water quality and quantity monitoring programs that are capable of producing accurate data to the extent necessary to determine whether the water quality and quantity goals of the organization are being achieved. The programs shall, at a minimum, include the location of sampling, the frequency of sampling, the proposed parameters to be measured, and the requirement of periodic analysis of the data.

The Commission obtained valuable baseline data on its lakes and streams through the monitoring phase of the Total Maximum Daily Load (TMDL) and Watershed Restoration and Protection Strategies (WRAPS) projects. There is limited data on the streams in the watershed. Several lakes in the watershed have a lengthy history of monitoring, including Lakes Independence, Sarah, and Rebecca.

A number of lakes in the watershed are on the 303(d) Impaired Waters List for excess nutrients: Independence, Sarah, Spurzem, Hafften, North and South Whale Tail, Half Moon, Irene, Peter, and Ardmore. The MPCA removed, or delisted Lake Rebecca in 2016 based on its improved water quality. Sarah Creek is listed for excess *E. coli*. Pioneer Creek and a portion of Deer Creek (unnamed Creek to Ox Yoke Lake), were listed in 2016 for low dissolved oxygen and *E. coli*. While outside the watershed's legal boundary, Unnamed Creek (Mud Lake to Rice Lake) is within the Pioneer-Sarah Creek WRAPS boundary and was listed in 2016 for dissolved oxygen and *E. coli*.

TMDLs have been completed for the lake nutrient and stream *E. coli* impairments except for Lake Irene. Pollutant load reductions to achieve state water quality standards for the stream and lake impairments as well as protection activities for Little Long Lake and Lake Rebecca, which currently meet state water quality standards. The Commission has taken on responsibility not only for an ongoing monitoring program that meets the requirements of Minnesota Rules cited above, but that also meets any monitoring requirements of the WRAPS.

Fourth Generation Monitoring Program Framework

The Fourth Generation Monitoring Program has two organizing principles:

1. Continue to obtain detailed flow and water quality data on Pioneer and Sarah Creeks and on sentinel lakes, and collect data on other lakes and streams on a rotating basis; and
2. Collect data sufficient to document water quality trends, both positive and negative, and assess progress toward meeting TMDL/WRAPS goals.

Each year the Commission will evaluate this proposed program and make modifications as necessary based on the most current data needs. The monitoring objectives guiding the Pioneer-Sarah Creek watershed monitoring program and the assessment of data are:

- To quantify the current status of streams and lakes throughout the watershed in comparison to state water quality standards.
- To quantify changes over time, or trends, in stream and lake water quality in the watersheds.
- To enhance the value of previous monitoring data by extending the period of record.
- To track and quantify the effectiveness of implemented BMPs throughout the watersheds for the protection of water quality.
- To evaluate progress toward meeting TMDL load reduction and other goals.

Monitoring data will be used to:

- Quantify any changes to receiving waters (lakes, streams, and wetlands) and their biota as land use conversion and development occurs.
- Convey information about the water resources in the watershed and their condition to multiple stakeholders, raising the visibility of the Commission.
- Target TMDL/WRAPS implementation and resource protection actions based on cost-effectiveness.
- Perform TMDL/WRAPS progress reviews.
- Accumulate enough information to support de-listing impaired waters that have improved to meet state water quality standards.
- Assist member cities who have Municipal Separate Storm Sewer Systems (MS4s) with their permit application and annual reporting requirements.
- Support applications for grant funding.
- Calibrate and validate hydrologic, hydraulic, and water quality models

Stream Monitoring

Table 1 sets forth the framework for stream monitoring in the Pioneer-Sarah Creek watershed for 2021-2030. Monitored parameters may vary from year to year based on current data needs such as obtaining baseline data for upcoming new standards or collecting additional data to assist in evaluating progress towards TMDL goals.

The Commission will annually monitor flow and water quality on Sarah Creek at site SCO (see Figure 1) and on Pioneer Creek at the Copeland Drive crossing (PSC) and at one additional site in the watershed per year on a rotating basis, so that each site is monitored every two to three years. These sites are: Pioneer Creek-Pagenkopf; Dance Hall Creek (DHC); Loretto Creek (LC); and Spurzem Creek (SC). In addition, the Commission may from time to time undertake special stream monitoring on other tributaries where necessary, for example to measure progress toward meeting a TMDL, calibrate models or refine source assessments.

The Commission currently partners with Hennepin County Environment and Energy to offer the RiverWatch volunteer macroinvertebrate monitoring program for high school students. One site on

Pioneer Creek just south of Pagenkopf Road has been monitored periodically since 2001. This is a valuable education and outreach program that provides useful information about stream health. However, the data collected through these programs is not comparable to the data used by the MPCA to evaluate stream biotic health using the state standard Macroinvertebrate Index of Biotic Integrity. The Commission will continue to offer the RiverWatch monitoring opportunity, but the data may need to be supplemented by professional staff using the MPCA macroinvertebrate protocol and assessment. The need for and specific locations and schedule will be developed in the WRAPS.

Additional stream monitoring that may be considered based on the findings of the WRAPS/TMDLs is longitudinal and diurnal dissolved oxygen (DO) monitoring. Longitudinal monitoring assesses stream DO along the entire length of the stream in one morning. Monitoring starts near sunup at the headwaters, where a DO reading is taken. The technician then moves downstream a set distance and takes another reading, then repeats until the end of the stream is reached. This provides a snapshot of the entire stream at once early in the morning when stream DO is at its lowest. Diurnal monitoring occurs at a point in the stream where an instrument takes continuous DO measurements of a 72 hour period. This shows how DO fluctuates from low to high to low again on a daily cycle. The Commission may undertake such monitoring later in the 10-year planning period, to understand how management actions are impacting DO in the streams with DO impairments.

Lakes Monitoring

There are numerous basins in the Pioneer-Sarah Creek watershed, with 17 lakes that have at some point in time been monitored. Lakes Independence, Sarah, and Rebecca have an extensive record, including surface water and water column monitoring. The Commission has regularly participated in the Metropolitan Council's Citizen Assisted Lake Monitoring Program (CAMP) since 2005, although some lakes were occasionally monitored through that program as far back as 1993.

CAMP volunteers monitor surface water conditions and chemistry. They also judge the appearance of the lake, its odor, and its suitability for recreation. Ardmore, Haften, Little Long, and Peter have been monitored periodically through this program.

Three Rivers Park District monitors Lake Rebecca, and the Commission contracts with the District to annually monitor Independence, Sarah, Little Long, Spurzem, Whale Tail, and Half Moon. The Commission received a Surface Water Assessment Grant to undertake 2010 and 2011 monitoring on several basins that had not previously been studied: Irene, Rattail, Robina, and Schwauppau, and also on Mud and Rice, which are outside the legal boundary but within the hydrologic boundary. Aquatic vegetation surveys have been completed on several lakes as part of the WRAPS monitoring.

Table 1 sets forth the framework for lake monitoring in the Pioneer-Sarah Creek watershed. This framework establishes three "Sentinel Lakes" that will be monitored every year by the Three Rivers Park District for the Commission: Independence, Sarah, and Little Long Lakes. In addition, Three Rivers will continue annual monitoring on Lake Rebecca. These lakes include three high-profile recreational lakes and one lake with very good water quality (Little Long). Other lakes will be monitored on a rotating basis, either under contract with Three Rivers Park District (Half Moon,

Spurzem, Rattail) or through CAMP (Ardmore, Hafften, and Peter, and on Irene, Schwauppau, Winterhalter, and Thomas if volunteers can be found). The Commission will also periodically update aquatic vegetation surveys in the sentinel lakes.

Other Monitoring

Aquatic Invasive Species (AIS). Three Rivers Park District and DNR periodically conduct zebra mussel surveys on Lake Independence. The District also has zebra mussel sampling plates on several lakes. The District and DNR partnered on zebra mussel treatments on Lake Independence when they were first discovered. The District has also conducted common carp biomass/population estimates on Lake Independence and its tributaries. The Commission currently shares in the cost of curly-leaf pondweed treatments on Lake Sarah.

Wetlands. The Commission does not currently undertake any wetland monitoring. Hennepin County Environmental Services offers the Wetland Health Evaluation Program (WHEP), training and supervising adult volunteers to assess wetland vegetation and macroinvertebrates. The Commission may in the future elect to participate in this program if suitable sites and volunteers can be found.

Special Monitoring. The Commission may from time to time undertake special monitoring where necessary, for example monitoring upstream and downstream of a wetland to calibrate models or refine source assessments, or to do performance monitoring of installed BMPs.

The Commission will periodically collect from the member cities, Hennepin County, MnDOT and other MS4s information about the BMPs that were installed in the watershed in the previous year. This data will assist in tracking progress toward achieving TMDL and WRAPS load reduction and protection goals.

Table 1. Pioneer-Sarah Creek WMC Fourth Generation proposed monitoring framework.

Resource	Activity	Purpose	Requirement	Frequency	Comments/Standards
Streams	Flow and water quality monitoring on Sarah Creek at SCO (Hwy 92 crossing) and on Pioneer Creek at PSC (Copeland Rd crossing)	Current conditions and long-term trends; TMDL compliance; annual water yield trend; calibrate models	MR 8410.0100 Subp. 5 / TMDL compliance / voluntary	Annually	Modify or add parameters as necessary
	Flow and water quality monitoring on tributary sites, rotate among: Dance Hall Creek (DHC); Loretto Creek (LC); and Spurzem Creek (SC)	Current conditions and long-term trends; TMDL compliance; annual water yield trend; calibrate models		Rotate every 2-3 years	Modify or add parameters as necessary
	DO longitudinal and diurnal assessment on impaired streams	TMDL compliance	TMDL compliance/ voluntary	Every 5 years	DO standards, biotic response
	Macroinvertebrate community	TMDL compliance	TMDL compliance/ voluntary	Every 5 years	IBI Standards
	RiverWatch volunteer stream monitoring	Current condition; trends; education & outreach	Voluntary	Annually	Educational activity
	Land Use/ stream condition/ buffer assessments	Long-term trends	Voluntary	As needed	TMDL compliance and BMP implementation
Lakes	Citizens Assisted Monitoring Program (CAMP)	Current condition; trends; education & outreach	MR 8410.0100 Subp. 5 / TMDL compliance / voluntary	6 lakes total, 2-3 lakes per year, bi-weekly	Lake water quality standards; education and outreach
	Sentinel Lakes annual monitoring	Current conditions and long-term trends		5 lakes, monthly, annually	Lake water quality standards
	Monthly monitoring through Three Rivers Park District	Current conditions and long-term trends		Monthly as needed	Lake water quality standards
	Vegetation surveys	Current conditions and long-term trends	TMDL compliance/ voluntary	Spring and fall every 5 years	Lake restoration
	DNR fish surveys	Current conditions and long-term trends	TMDL compliance/ voluntary	DNR schedule	Lake restoration
Wetlands	Wetland Health Evaluation Program	Current condition; trends; education & outreach	Voluntary	Annually	Baseline wetland health
Groundwater	Track well groundwater elevation data	Baseline for ground-water recharge/ discharge	Voluntary	As needed	Important if base flow becomes an issue
Other	Special source assessment and other monitoring	Collect one-time or periodic special monitoring, such as: inflow and outflow of target wetlands; small streams; BMP effectiveness; biology	TMDL compliance/ voluntary	As needed	Some special monitoring may require cost-share from a benefitting MS4
	Annually log BMPs undertaken in the subwatershed of each resource	Progress toward meeting load reductions	TMDL compliance/ voluntary	Annually	Member cities report annually

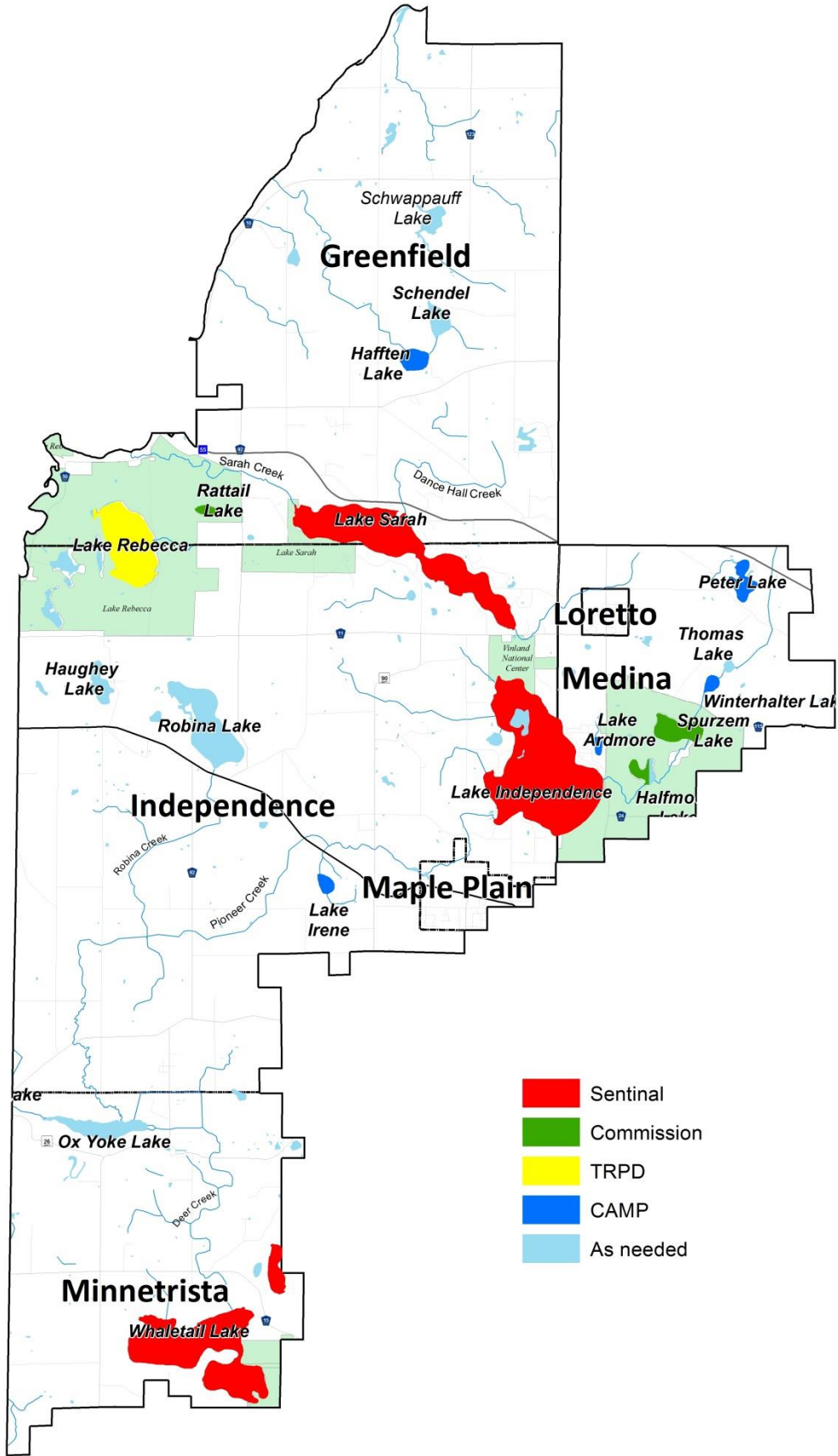


Figure 1. Pioneer-Sarah Creek WMC Fourth Generation Monitoring Program - Lakes

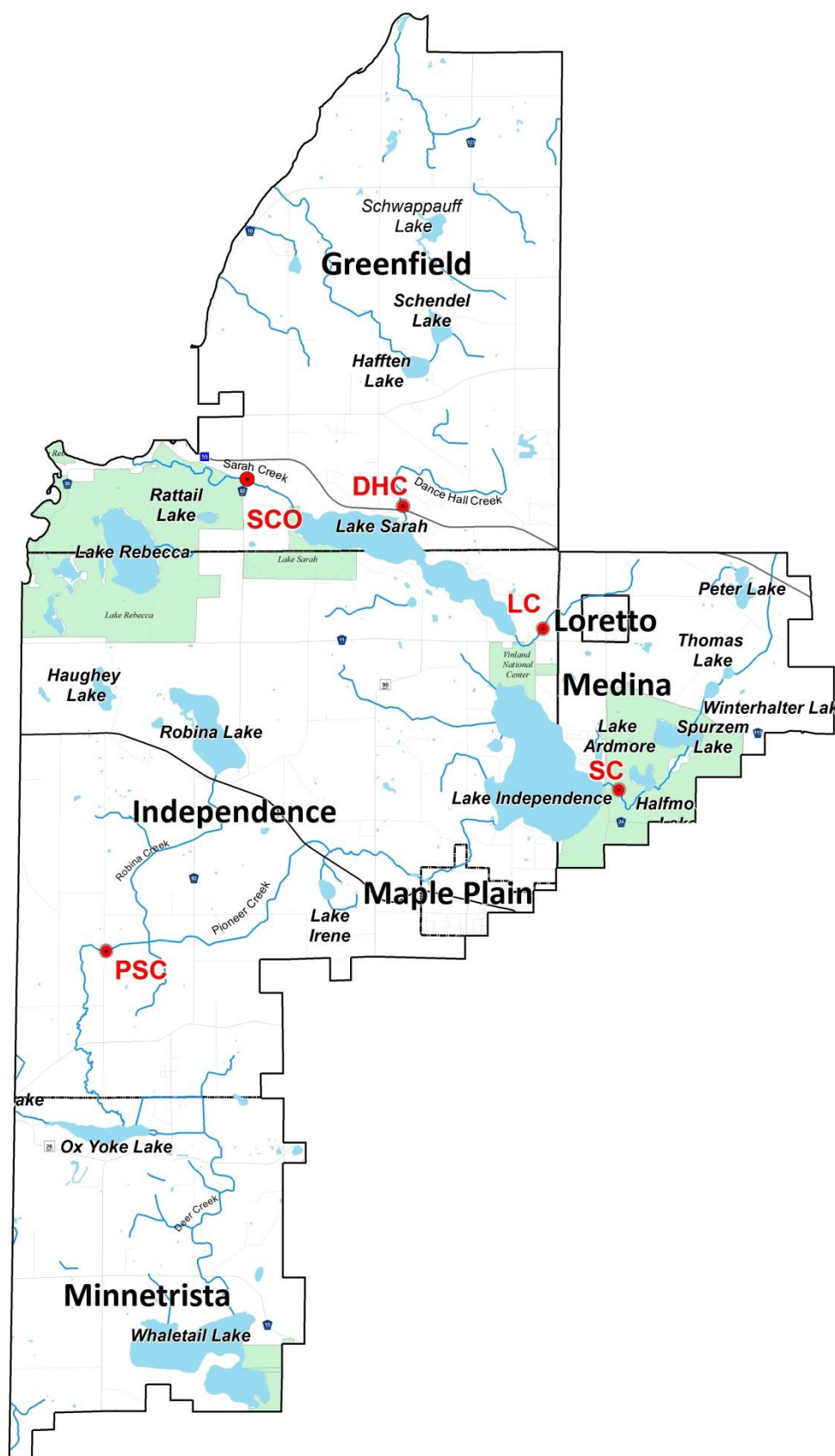


Figure 2. Pioneer-Sarah Creek WMC Fourth Generation Monitoring Program-Streams

Appendix E

Education and Outreach Plan

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**Pioneer-Sarah Creek Watershed Management Commission
Fourth Generation Watershed Management Plan
Education and Outreach Plan**

The goal of the Pioneer-Sarah Creek Watershed Management Commission's Education & Outreach Program is to engage people in the community in the protection and improvement of lakes, rivers, streams and wetlands through education, increased water awareness and community participation.

STAKEHOLDER EDUCATIONAL GOALS

Stakeholders and target audiences are individuals or groups to whom education is being directed. The Plan has identified the following target audiences and general educational goals for each. Often more than one target audience will benefit from an educational activity.

1. All property owners
 - a. Understand that they live in a watershed and know where their stormwater runoff goes
 - b. Understand nutrient sources and the impacts of excess nutrients on lakes and streams
 - c. Understand how runoff rates and volumes affect lakes and streams
 - d. Understand and undertake Best Management Practices (BMPs) to reduce nutrient loads and runoff volume
 - e. Participate in volunteer activities or events
2. Lakeshore property owners
 - a. Know the water quality status of their lake, and the types and magnitude of improvements needed
 - b. Know both the major beneficial aquatic plants in their lake as well as the major invasives
 - c. Have a general understanding of limnology (lake science)
 - f. Understand and undertake Best Management Practices such as lakeshore buffers and proper application of fertilizer, herbicides, and pesticides
3. Government: elected and appointed officials, staff, board and commission members
 - a. Have a general understanding of watersheds, water resources and where stormwater to and from the city goes
 - b. Understand the water resources implications of land use change
 - c. Are aware of water management policies and actions of other local, watershed, regional, and state organizations
 - g. Understand how to incorporate water resources management actions into development and redevelopment as well as city operations
4. Educators and students
 - a. Incorporate water resources education and activities into curricula
 - b. Participate in family education and outreach events centered around water
 - c. Have opportunities for volunteer monitoring, service projects, and other hands-on learning
 - h. Educators are aware of and have access to continuing education centered around water
5. Agriculture and animal operators
 - a. Understand and use Best Management Practices such as proper manure management and targeted fertilizer application
 - b. Undertake conservation and nutrient management actions

IMPLEMENTATION STRATEGIES

- Expand education and outreach opportunities by coordinating with other entities such as Hennepin County.
- Use the Commission's, member cities', and educational partners' websites and newsletters, social media, co-ops, local newspapers and cable TV to share useful information to stakeholders on ways to improve water quality and keep content current.
- Convene Citizen Advisory Committees as needed to advise the Commission and to assist in program development and implementation.
- Participate with collaborative groups to pool resources to undertake activities in a cost-effective manner, promote interagency cooperation and collaboration, and promote consistency of messages.
- Prominently display the Commission's logo on information and outreach items, project and interpretive signs, and other locations to increase visibility.
- Provide opportunities for the public to learn about and participate in water quality activities.
- Provide education opportunities for elected and appointed officials and other decision makers.
- Enhance education opportunities for youth.
- Provide opportunities for bridge-building between stakeholders with sometimes competing ideas and interests, such as lakeshore owners and agricultural operators.
- Collaborate with Hennepin County to undertake targeted education and outreach to agricultural and other landowners in the watershed.

2021-2025 PRIORITY AREAS FOR EDUCATION AND OUTREACH

In setting its annual work plan, the Commission will review education and outreach priorities and develop specific education and outreach actions for the coming year. These actions may be ongoing or programs or activities; participation in programs or activities sponsored by other organizations; suggestions or information for member city implementation; or other actions depending on the education and outreach priorities. The following are the priority areas for the first few years of the Fourth Generation Plan:

1. Sponsor watershed and water resources training opportunities such as NEMO (Nonpoint Education for Municipal Officials) for the Commissioners, and as available for member city councils and staff.
2. Collaborate with Hennepin County staff to undertake ongoing Commissioner education on various introductory and continuing education topics.
3. Work cooperatively with Hennepin County staff to reach out to urban, rural, and agricultural property owners
4. Disseminate education materials to all stakeholders about actions they can take to protect and improve water quality.
5. Maintain a website and social media presence with up to date and fresh content.
6. Participate with collaborative groups such as Watershed Partners.

Table 1. Pioneer-Sarah Creek Fourth Generation Watershed Management Plan Education and Public Outreach Activities.

Activity	Educational Outcomes	Example Actions	Estimated Cost	Schedule/ Frequency
Collaborate with Hennepin County staff to provide Commissioner and landowner education and outreach	<ul style="list-style-type: none"> Enhance Commissioner knowledge Raise profile of Commission Coordination of messages Increased public outreach 	<ul style="list-style-type: none"> Short presentations on a variety of topics at each Commission meeting as ongoing education Accompany county staff at outreach activities such as small group meetings 	Minimal	Monthly
Convene Citizen Advisory Committees (CAC) as necessary	<ul style="list-style-type: none"> Coordination and implementation of education and outreach program Increased public outreach 	<ul style="list-style-type: none"> Meet as necessary to coordinate and implement education and outreach Use email and social media to coordinate efforts and enhance community participation and communication Make recommendations to Commission Represent the Commission at education and outreach events 	Variable	As necessary
Coordinate programming with collaborative groups	<ul style="list-style-type: none"> Consistency of message across wider area Youth education Adult education Increased visibility for Commission 	<ul style="list-style-type: none"> Participate in developing education campaigns 	Variable	As necessary
Coordinate with other organizations to provide continuing education opportunities to elected and appointed officials	<ul style="list-style-type: none"> Enhance understanding of watersheds and water resources Increase awareness of trends in regulations, maintenance, public opinions, etc. 	<ul style="list-style-type: none"> Sponsor Northland NEMO or other workshops for all Commissioners, City Councils, and Planning Commissions Provide tailored education and outreach activities such as workshops, presentations, written materials, and on-line resources 	\$300 Annually	At least once per year
Maintain website	<ul style="list-style-type: none"> Ability to provide a wide range of information to users for self-directed education 	<ul style="list-style-type: none"> Maintain and update website 	\$2,200 Annually	Ongoing
Sponsor volunteer water quality monitoring, watershed clean-up activities, and volunteer planting and maintenance opportunities	<ul style="list-style-type: none"> Engage and educate residents, students, and other interested parties through hands-on activities Support positive actions to protect and improve water resources Increased visibility for and knowledge of Commission 	<ul style="list-style-type: none"> Sponsor volunteer lake, stream, and wetland monitoring Encourage and facilitate volunteer events Hold an annual family water quality event 	\$500 Annually + volunteer monitoring budget	Ongoing

Activity	Educational Outcomes	Example Actions	Estimated Cost	Schedule/ Frequency
Distribute electronic and printed educational materials	<ul style="list-style-type: none"> ▪ Distribution of useful information to assist in implementing BMPs 	<ul style="list-style-type: none"> ▪ Post electronic information on Commission and County website ▪ Distribute printed materials to member cities, and make available at events 	\$300 Annually Cities fund repro cost	Printed– 1 per year Electronic – at least 3 new items per year
Contribute press releases and information material to local media	<ul style="list-style-type: none"> ▪ Distribution of useful information to assist in implementing BMPs ▪ Increased visibility for and knowledge about Commission 	<ul style="list-style-type: none"> ▪ Submit press releases on programs and projects in the watersheds ▪ Submit press releases with useful, timely information 	\$330 Annually	At least 3 times/year
Coordinate programming with other Metro organizations	<ul style="list-style-type: none"> ▪ Consistency of message across wider area ▪ Access to additional education and outreach materials 	<ul style="list-style-type: none"> ▪ Continue membership in Blue Thumb and Watershed Partners ▪ Coordinate with NEMO 	\$1,000 Annually	Annual and ongoing
Provide education, outreach, and financial assistance to lake associations, schools, faith based-groups, community organizations, and other groups	<ul style="list-style-type: none"> ▪ Improve general understanding of watersheds and water resources ▪ Encourage the adoption of practices that protect water resources ▪ Increase visibility for and knowledge of Commission 	<ul style="list-style-type: none"> ▪ Sponsor annual lake association summit ▪ Provide small grants as incentives to implement volunteer events and demonstration projects ▪ Provide small grants to educators to enhance environmental and water resources education in the schools 	\$3,000 - 5,000 Annually	Ongoing
			\$15,980 to \$17,980	

Appendix F

Capital Improvement Program (CIP)

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**Pioneer-Sarah Creek Watershed Management Commission
Third Generation Watershed Management Plan
Capital Improvement Projects and Funding**

Projects proposed for the Capital Improvement Program (CIP) are shown in Table F.1 and described in more detail following the table. This initial CIP was prepared from projects submitted by the member cities and reviewed and prioritized by the Commission's Technical Advisory Committee (TAC). Priority in this case is expressed as order of implementation. Order 1 projects should be completed before considering order 2 projects. Order 3 projects are typically opportunistic projects that could be implemented at any time as resources and willing property owners are available. Completion of some of the more expensive projects on the CIP will be dependent on grant and other resources.

It is anticipated that this CIP will be reviewed annually, and additional projects and studies may be added by plan amendment as submitted by the member cities or as recommended by the TAC. It is the intent of the Commission to finance these projects using its current Cost Share Policy as funds are available and through local funds and grants as available.

Some of the projects on this CIP are dependent on winning grants to help defray the cost of implementation. The Commission budgets annually for professional assistance in preparing grant applications. Hennepin County and Three Rivers Park District staff also provide assistance with grant applications.

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Table F.1. Capital Improvement Program.

Note: See project descriptions following the tables. PSC = Pioneer-Sarah WMC; Ind=Independence; Med=Medina; Lor=Loretto; Gr=Greenfield; Minn=Minnetrista; MP=Maple Plain; TRPD=Three Rivers Park District

Order	Project Name	Total Cost	Commission Share	Potential Funding Source(s)	Engaged Landowner	2020	2021	2022	2023	2024	2025	2026-2030
Lake Independence Drainage Area												
1	Ardmore Carp Barrier and Stream Stabilization	\$74,000	\$16,000	Grant, TRPD	Yes							
1	Baker Park Ravine	\$520,000	\$5,000	Grants, PSC, TRPD, Ind, Med	Yes	5,000						
1	Lake Independence TMDL Review & Management Plan	\$30,000	\$30,000	PSC, Ind, Med, Lor, TRPD	NA		30,000					
2	Lake Independence Area BMPs	\$100,000	\$25,000	PSC, Ind, Med, County, Lor, Grant	Not yet			10,000		10,000		5,000
1	Subwatershed Assessment: Spurzem Area	\$60,000	\$15,000	PSC, Med, Lor	NA		15,000					
2	Spurzem Area BMPs	\$100,000	\$25,000	Grant, PSC, Med, Lor, County	Not yet				10,000		10,000	5,000
1	Lake Ardmore Management Plan	\$10,000	\$10,000	PSC, Med	NA				10,000			
2	Ardmore Lake Alum Treatment	\$20,000	\$5,000	Grant, PSC, Med	NA					5,000		
2	Half Moon Lake Alum Treatment	\$45,000	\$11,250	Grant, PSC, TRPD, Med, Lor	NA							11,250
2	Peter Lake Alum Treatment	\$65,000	\$16,250	Grant, PSC, Med	NA							16,250
2	Spurzem Lake Alum Treatment	\$62,000	\$15,500	Grant, PSC, TRPD, Med, Lor	NA							15,500
3	Lake Independence Alum Treatment	\$1,390,500	\$250,000	Grant, PSC, Med, Ind, Lor, TRPD	NA							250,000
Lake Sarah Drainage Area												
1	Sediment Sampling in Lake Sarah	\$12,000	\$3,000	PSC, Ind, Gr, Lor	NA		3,000					
2	Lake Sarah TMDL Review & Management Plan	\$25,000	\$25,000	PSC, Ind, Gr, Lor	NA			25,000				
2	Dancehall Creek SWA BMPs	\$200,000	\$50,000	Grant, PSC, Gr, County	Not yet			10,000	10,000		10,000	20,000
2	HR68 & Gully Stabilization	\$75,000	\$18,750	PSC, Ind, County	Not yet			18,750				
1	Lake Sarah Curlyleaf Pondweed Treatment	\$28,000	\$8,000	PSC, Ind, Gr, lake assn	NA	8,000	8,000					
3	Lake Sarah Alum Treatment	\$250,000	\$62,500	Grant, PSC, Ind, Gr, Lor	NA						62,500	
Pioneer Creek Drainage Area												
1	Whaletail South Alum Treatment	\$300,646	\$75,160	Grant, PSC, Minn, TRPD	NA		75,160					
1	Pioneer Creek @ Pagenkopf Rd Carp Barrier	\$75,000	\$18,750	Grant, PSC, Ind	NA		18,750					
2	CSAH 91/ CR92 Supplemental BMPs	\$100,000	\$25,000	PSC, County	NA		25,000					
3	Wetland Restorations/ Deer & Unnamed Creeks	\$50,000	\$12,500	PSC, Minn, County	Not yet		6,250				6,250	
3	Channel Restorations/ Deer & Unnamed Creeks	\$60,000	\$15,000	PSC, Minn, County	Not yet			7,500				7,500
Crow River Drainage Area												
1	Shriners BMP Impl & Regional Hydraulic Restoration	\$150,000	\$25,000	Grant, PSC, County, TRPD	Yes	150,000						
1	Lake Rebecca Alum Treatment	\$225,000	\$56,250	Grant, PSC, TRPD	NA				53,250			
3	Subwatershed Assessment: Hafften, Schendel, Schwauppauff	\$15,000	\$3,750	PSC, Gr	NA							3,750
Ongoing Opportunity Based Projects - Watershed Wide												
2	Stormwater BMPs / retrofits	varies	\$10,000	PSC, County	Not yet		5,000		5,000			
2	Feedlot / Manure Management BMPs	varies	\$10,000	PSC, County	Not yet			5,000		5,000		
2	Agricultural Practice BMPs	varies	\$10,000	PSC, County	Not yet				5,000		5,000	
	TOTAL	\$4,042,146	\$852,660			\$163,000	\$286,160	\$76,250	\$93,250	\$10,000	\$93,750	\$334,250

Note: The Commission intends to review this CIP annually and may revise it from time to time, including providing more detail for 2026-2030, in accordance with its Plan Amendment policies.

Project Descriptions

Unless otherwise noted, it is assumed that the Commission's share will be as shown on Table F.1, with the balance funded by the member city, supplemented as necessary through grant funds and stakeholder and landowner financial participation.

Lake Independence Drainage Area

Lake Independence TMDL Review and Management Plan

The Lake Independence TMDL was completed in 2007. Stakeholders have completed several implementation actions since that time. Additional monitoring data such as sediment core release rate analysis and lake inflow have since been collected. This project is a progress review and development of a Lake Management Plan for Lake Independence, including updating watershed and lake response modelling and TMDL load reduction targets. The progress review will also update the TMDL implementation plan, including actions for the upstream impaired lakes. The focus of this plan will be on holistic, whole-lake ecological management that includes actions to manage aquatic vegetation and fish communities and internal load in addition to watershed load reductions.

Lake Independence Area BMPs

The City of Independence had previously completed a subwatershed assessment for that part of the city that is tributary to Lake Independence. The report identified 64 potential BMPs, including wetland restorations, hydrologic restorations, gully stabilizations, residential rain gardens, grassed waterways, and other practices to reduce phosphorus and sediment loading to the lake. Most of these are on private property. This project is to provide cost share for those practices as willing landowners become available. <http://www.pioneersarahcreek.org/independence-sra.html>

Subwatershed Assessment-Spurzem Drainage Area

This project is the completion of a subwatershed assessment of the drainage area to Spurzem Lake to identify potential BMPs and estimate their costs and removals.

Spurzem Area BMPs

Following completion of the subwatershed assessment, this project is to share in the cost of implementing BMPs to reduce phosphorus and sediment loading to Spurzem Lake or the upstream tributary lakes.

Lake Ardmore Management Plan

The Commission and the city of Medina have recently completed some BMPs in the Lake Ardmore drainage area. This lake is tributary to Lake Independence. This project is the development of a holistic, whole-lake ecological management that includes actions to manage aquatic vegetation and fish communities and internal load in addition to watershed load reductions.

Ardmore Lake Alum Treatment

The purpose of the project is to significantly reduce the sediment phosphorus release during anoxic conditions through the application of aluminum sulfate in Ardmore Lake, which is upstream of Lake Independence. The reduction of phosphorus internal loading in Ardmore will significantly improve the in-lake water quality conditions and is necessary to achieve the MPCA in-lake water quality standards.

Half Moon Lake Alum Treatment

The purpose of the project is to significantly reduce the sediment phosphorus release during anoxic conditions through the application of aluminum sulfate in Half Moon Lake, which is upstream of Lake Independence. The reduction of phosphorus internal loading in Half Moon will significantly improve the in-lake water quality conditions and is necessary to achieve the MPCA in-lake water quality standards.

Peter Lake Alum Treatment

The purpose of the project is to significantly reduce the sediment phosphorus release during anoxic conditions through the application of aluminum sulfate in Peter Lake, which is upstream of Lake Independence. The reduction of phosphorus internal loading in Peter will significantly improve the in-lake water quality conditions and is necessary to achieve the MPCA in-lake water quality standards.

Spurzem Lake Alum Treatment

The purpose of the project is to significantly reduce the sediment phosphorus release during anoxic conditions through the application of aluminum sulfate in Spurzem Lake, which is upstream of Lake Independence. The reduction of phosphorus internal loading will significantly improve the in-lake water quality conditions and is necessary to achieve the MPCA in-lake water quality standards.

Lake Independence Alum Treatment

The project is to significantly reduce the sediment phosphorus release through the application of aluminum sulfate, which will significantly improve the in-lake water quality conditions. The control of internal load is necessary to achieve the MPCA in-lake water quality standards. The Commission considers Independence a Sentinel Lake. A TMDL study was completed in 2007 that identified internal loading as a significant portion of the total loading that impacts water quality conditions.

Lake Sarah Drainage Area*Lake Sarah Sediment Sampling*

Prior to completing the proposed TMDL Review and Management Plan, sampling the sediment in Lake Sarah would provide a more accurate estimate of internal load released from sediments. This is critical for partitioning phosphorus load between external and internal sources and in determining the types of BMPs and their priority.

Lake Sarah TMDL Review and Management Plan

The Lake Sarah TMDL was completed in 2011. A subwatershed assessment has been completed for the Dance Hall Creek drainage area. Stakeholders have completed several watershed and in-lake implementation actions since that time. Additional monitoring data has been or will be collected. This project is a progress review and development of a Lake Management Plan for Lake Sarah, including updating watershed and lake response modelling and TMDL load reduction targets. The progress review will also update the TMDL implementation plan. The focus of this plan will be on holistic, whole-lake ecological management that includes actions to manage aquatic vegetation and fish communities and internal load in addition to watershed load reductions.

Dance Hall Creek Drainage Area BMPs

The Lake Sarah TMDL identified flow discharging from Dance Hall Creek into Lake Sarah as a significant source of nutrient load to the lake. In 2014, the City of Greenfield partnered with Hennepin County Environmental Services, Three Rivers Park District, and the Commission to complete a subwatershed

assessment of the Dance Hall Creek drainage area. This project would implement high-priority BMPs identified in that study. <http://www.pioneersarahcreek.org/dance-hall-creek.html>

HR 68 and Gully Stabilization

Hydrologic restoration and stabilization of a gully that is conveying excess phosphorus and sediment to Lake Sarah. This project is identified as HR 68 in the Lake Sarah and Lake Independence Stormwater Retrofit Analysis. While located on private property willing landowners have been identified.

Lake Sarah Curlyleaf Pondweed Treatment

In partnership with the DNR and the Lake Sarah Improvement Association, apply herbicide (Aquathol) to non-native curly-leaf pondweed (CLP) which was included in the TMDL Implementation Plan as a solution to the large in-lake load for Lake Sarah (900 lbs/yr or 17% overall load).

Lake Sarah Alum Treatment

The purpose of the project is to significantly reduce the sediment phosphorus release during anoxic conditions through the application of aluminum sulfate in Lake Sarah. The reduction of phosphorus internal loading in Sarah will significantly improve the in-lake water quality conditions and is necessary to achieve the MPCA in-lake water quality standards.

Pioneer Creek Drainage Area

Whaletail South Alum Treatment.

The purpose of the project is to significantly reduce the sediment phosphorus release during anoxic conditions through the application of aluminum sulfate in South Whaletail Lake. The reduction of phosphorus internal loading in South Whaletail Lake will significantly improve the in-lake water quality conditions. The control of internal load in South Whaletail Lake is necessary to achieve the MPCA in-lake water quality standards.

Pioneer Creek Pagenkopf Road Carp Barrier.

The project is to install a carp barrier on Pioneer Creek at the downstream end of the culvert located at Pagenkopf Road. A carp movement study indicated that fish are moving in large numbers in the spring through Pioneer Creek to access shallow lakes located downstream of Lake Independence to spawn. A barrier would (1) prohibit carp movement from moving back and forth between Lake Independence and the downstream shallow lakes through Pioneer Creek at Pagenkopf, and (2) provide an opportunity to remove carp at the barriers in the spring to reduce overall biomass

Supplemental BMPs for CSAH12/CR92 Reconstruction.

Hennepin County and MNDOT are working jointly to improve safety along CSAH12 at its intersection with County Road 92. Stormwater BMPs, specifically two ponds, will be implemented to treat runoff from new impervious surface created with this project. This CIP proposes to install additional BMPs, specifically at least one iron-enhanced sand filter or spent-lime filter, to better treat dissolved phosphorus and other pollutants prior to discharge into Robina Creek. This project only includes BMPs that go above-and-beyond permit requirements.

Wetland Restorations/ Deer & Unnamed Creeks.

The project is the restoration of two wetland systems to address the dissolved oxygen impairment and improve hydrology and water quality in the Deer and Unnamed Creek flow through wetland systems. The purpose is to decrease sediment oxygen demand and improve the overall water quality.

Channel Restorations/ Deer & Unnamed Creeks

The project is channel restoration through development of low-flow channels in impaired Unnamed and Deer Creeks. The goal is to complete approximately 2000 linear feet of channel restoration, 1000 feet per project. The purpose is to decrease width and increase velocity, meandering, riffles, and aeration throughout the waterbodies.

Crow River Drainage Area

Shriners BMP Implementation & Regional Hydraulic Restoration

This project is several improvements at the Zuhrah Shrine Horse Facility and adjacent properties just east of Lake Rebecca to alleviate wetland flooding issues impacting pasturing and feeding conditions and contributing to excess nutrient and sediment loading to Lake Rebecca. Improvements that will be considered include:

- Tile repair
- Sediment basins
- Bio reactors at tile outlets
- Dry lot construction
- Grazing and manure plan
- Control structure at culvert
- Other basin opportunities
- Water quality testing and monitoring
- Piezometer for ground water monitoring
- SWA for area
- Tile outlet inventory
- Control structure at Co Rd 92 crossing

Lake Rebecca Alum Treatment

The purpose of the project is to reduce the sediment phosphorus release during anoxic conditions through the application of aluminum sulfate in Rebecca Lake. The reduction of phosphorus internal loading in Rebecca will be necessary to ensure that the lake continues to meet the MPCA water quality standards. Lake Rebecca had an alum treatment in 2010/2011 to reduce the internal loading of sediment phosphorus release. The overall effectiveness of the alum treatment has been reduced overtime, and a bump treatment will be needed to ensure that the lake continues to meet the MPCA water quality standards. A study will be completed in 2020 to evaluate the existing alum-phosphorus binding capacity through sediment phosphorus release analysis.

Subwatershed Assessment-Hafften, Schendel, Schwauppauuff

This project is the completion of a subwatershed assessment of the drainage area to Hafften, Schendel, Schwauppauuff Lakes and the Crow River to identify potential BMPs, and estimate their costs and removals.

Ongoing Opportunity Based Projects - Watershed Wide

Stormwater BMPs/Retrofits, Feedlot/Manure Management BMPs, Agricultural Practice BMPs.

The Commission has a partnership with Hennepin County Environment and Energy staff as they work with private landowners to undertake stormwater and agricultural management practices. As opportunities arise throughout the watershed, the Commission may supplement County cost-share funds to assist and incentivize those landowners to achieve phosphorus, sediment, and bacterial loading to the waters in the watershed.