MIDDLE ST. CROIX WATERSHED MANAGEMENT ORGANIZATION
455 HAYWARD AVENUE, OAKDALE, MINNESTOA 55082
Phone 651.330.8220 x22 fax 651.330.7747 www.mscwmo.org

Regular Meeting of the Middle St. Croix Watershed Management Organization
Bayport Public Library, Bayport, MN
Thursday, December 14, 2017
6:00PM

1. Call to Order – 6:00PM

2. Approval of Minutes
   a) Draft minutes- November 9 , 2017 ***p. 1-3***

3. Treasurer's Report
   a. Report of savings account, assets for December 14, 2017
   b. Approve payment of bills for December 14, 2017
   c. Monthly budget update through November, 2017

4. Public Comments

5. Old Business

6. New Business
   a. Clean Water Fund Grant Extension Request 2014 Lily Lake Phase III CWF Grant ***p. 4-5***
   b. 2018 Meeting Dates ***p.6-7***
   c. 2018 Review Fees ***p. 8***
   d. 2018 Minnesota Conservation Corps Crew Grant Application ***p. 9***

7. Grant and Cost Share Applications
   a. Nelson School Townhome Permeable Pavement Cost Share Reimbursement, Stillwater ***p. 10***

8. Plan Reviews/Submittals
   a. CSAH 21 2018 Reconstruction- Oak Park Heights, Bayport, Baytown Township ***p. 11-21***
   b. St. Croix Crossing Loop Trail Plan Review- Oak Park Heights & Stillwater ***p.22-32***
   c. St. Croix Crossing Perennial Plantings Plan Review- Oak Park Heights & Stillwater ***p. 33***

9. Administrator's Report ***p. 34-35***

10. Adjourn

Middle St. Croix Watershed Management Organization
Bayport Public Library
Minutes November 9, 2017

Present: Nancy Anderson , City of St. Mary's Point; Dan Kyllo, West Lakeland Township; Mike Runk, City of Oak Park Heights; Tom McCarthy, City of Lake St. Croix Beach; Joe Paiement, City of Lakeland; Brian Zeller, City of Lakeland Shores; Mike Isensee; MSCWMO Administrator; Drew Chirpich, GreenCorps.

Call to Order – Regular Board Meeting
The meeting was called to order at 6:00 p.m.

Approval of Minutes
A motion to approve the October 12, 2017 minutes was made by Ms. Nancy Anderson, seconded by Mr. Tom McCarthy. The motion carried.

Treasurer's Report
The treasurer's report was presented. The remaining checking account balance is $263,515.07. First State Bank CDs $32.094.13. The ending balance in the RBC savings account is $48,662.22. Bills to approve this month: Kennedy & Graven $88.50; Kennedy & Graven $141.60; Washington Conservation District Administration $3,467.50; Washington Conservation District Tech Services $3,873.25.

The board reviewed the monthly budget update and the savings account summary.

Mr. Brian Zeller moved, seconded by Mr. Mike Runk to approve the treasurer's report and bills. The motion carried.

Public Comments
None submitted.

2018 Washington Conservation District Technical Services Agreement
The MSCWMO Board of Managers approved the Washington Consrevation Distirct 2018 Services agreement at the October 12, 2017 Regular Meeting. Mr. Isensee requested to amendmend Exhibit B, Task 5 to clarify the WCD to cover maintenance activities of BMPs in accordance with MSCWMO policies.

Motion by Mr. Paiment, seconded by Ms. Anderson, to add Task 5 to Exhibit B of the 2018 Services Agreement Between the Washington Conservation District and the Middle St. Croix Watershed Management Organization not to exceed $167,049.00

Chlorides Water Quality Presentation.
Green Corps Member Chirpich provided an overview of chlorides and impacts on water quality to the MSCWMO Board of Managers. Mr. Zeller inquired about contract modifications to more clearly identify timing and quantity of chloride application. Mr. McCarthy noted that the City of Lake St. Croix Beach applies grit with chlorides at

intersections as an indicator that trucks have been out. The board instructed Administrator Isensee to look into contracts and provide further recommendations for balancing public safety and chloride application.

Request for Qualifications for Legal Services
Minnesota Statutes, Section 103B.227, Subdivision 5, require MSCWMO to solicit proposals every two years to provide consulting services. Staff is presenting this draft RFQ for board consideration prior to releasing the request.

Motion by Mr. Fellegy, seconded by Ms. Anderson to distribute the Request for Qualifications.

2018 Liability Insurance Waiver
Administator Isensee explained the MSCWMO is required to annually review and renew liability insurance and elect to waive or not waive the limits on tort liability. Based on past recommendations from the MSCWMO attorney, it is recommended that the board not waive tort liability limits.

Motion by Mr. Zeller, seconded by Mr. Paiement, to not waive the monetary limit on municipal tort liability. Motion carried.

2018 Savings Account Transfers.
Administrator Isensee reviewed the MSCWMO Annual budget sets aside $1,000 per year for water monitoring equipment savings and $6,000 per year for Watershed Management Plan savings and requested board approval to transfer $7,000 from the watershed checking account into the watershed savings account for savings identified in the 2017 annual budget.

Motion made by Dan Kyllo, seconded by Nancy Anderson, to transfer $7,000 from the watershed checking account to the watershed savings account as directed in the 2017 MSCWMO Budget. Motion carried.

Top 50P! Grant Funding for the Greeley Gully Project
The $99,158.00 Greeley Gully stabilization project that will reduce phosphorous loading to Brick Pond and Lily Lake by 40.6 pounds of phosphorous per year. During construction, 17 additional trees were identified that required removal and an additional 23 cubic yards of rip rap were needed to ensure the outfalls would remain stable. These change orders increased the cost of the project by $4,665.00. The Washington Conservation District, through the Top 50P! grant from the St. Croix River Assocation has funding available to cover additional costs incurred by change orders for the Greeley Gully stabilization project.

Motion to approve made by Brian Zeller, seconded by Dan Kyllo, to enter into the Washington Conservation District Cost Share Agreement not to exceed $6,201.01 for the completion of the Greeley Gully Stabilization project. Motion carried.

Stillwater Foundation Grant Application
Administraotr Isensee requested the board approve a grant application for $4,200 to the Stillwater Foundation to help fund the Adopt a Raingarden Program.

Motion by Mr.Kyllo, seconded by Ms. Anderson. Motion carries.

Administrator's Report
A written Administrator's report was submitted. Administrator Isensee briefly discussed progress on the Lower St. Croix Basin One Watershed One Plan Work Plan.

Adjourn
Mr. Kyllo moved to adjourn the meeting, seconded by Mr. McCarthy. Motion carried and meeting adjourned at 7:40 p.m.

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TO: MSCWMO Board
FROM: Mike Isensee, Adminstrator
DATE: December 14, 2017

SUBJECT: 6a) C14-9751 Lily Lake Stormwater Quality Retrofits CWF Grant Extension

MSCWMO staff are requesting the Board of Managers approve an extension for the Lily Lake Stormwater Quality Retrofit Clean Water Fund Grant due to failure by the contractor to achieve substantial completion by the contractual deadline. The project is approximately 85% complete, but critical elements were not completed prior to the end of the construction project.

Lily Lake Stormwater Quality Retrofits Grant Extension

Motion Board Manager 1, second Board Manager 2, to approve the extension of the FY 2014 Clean Water Fund Grant Lily Lake Stormwater Retrofits.

FY2014 STATE OF MINNESOTA
BOARD OF WATER and SOIL RESOURCES
CLEAN WATER FUND GRANT AGREEMENT AMENDMENT

Grant Agreement Effective Date:	April 4, 2014	Total Grant Amount:	$ 109,000
Original Grant Agreement Expiration Date:	December 31, 2016	Original Contract:	$ 109,000
Current Grant Agreement Expiration Date:	December 31, 2017	Previous Amendment(s) Total:	$ 0
Requested Grant Agreement Expiration Date:	December 31, 2018	This Amendment:	$ 0

This amendment is by and between the State of Minnesota, through its Board of Water and Soil Resources (Board), and the Middle St. Croix Watershed Management Organization, 105 Stagecoach Trail S, Afton, MN 55001 (Grantee).

Recitals

1. The State has a Grant Agreement with the Grantee identified as the (FY 2014) Project No. C14-9751 Clean Water Fund "Projects and Practices" Grant, Contract #574876, PO #3000004439, for Lily Lake Stormwater Quality Retrofits.
2. The Watershed Management Organization requests an extension to allow time to complete installation of the project. Additional time is required due to failure by the contractor to achieve substantial completion by the contractual deadline. As a result the MSCWMO needs additional time to compel the contractor to complete its contractual obligations, or obtain another contractor to complete the work. The project is currently 85% complete and will be 100% constructed during the 2018 construction season.
3. The State and District are willing to amend the Original Contract as stated below.

Contract Amendment

REVISION 1.

"**1 Term of Grant Agreement**" is amended as follows:

1.2 *Expiration Date:* ~~December 31, 2016~~ ~~December 31, 2017~~ December 31, 2018, or until all obligations have been satisfactorily fulfilled, whichever comes first.

REVISION 2.

"**2 Grantee's Duties**" is amended as follows:

2.2 *Reporting*:

2.2.3 The Grantee will submit a final progress report to the Board by February 1 of ~~2017~~ ~~2018~~ 2019.or within...

Except as amended herein, the terms and conditions of the Original Grant Agreement remain in full force and effect.

APPROVED:

Middle St. Croix WMO

By:_____

Title:_____

Date:_____

Board of Water and Soil Resources

By:_____

Title:_____

Date:_____

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MEMORANDUM

TO: Middle St. Croix WMO Board of Managers
FROM: Mikael Isensee, Administrator
DATE: December 14, 2017

6 b) 2018 Meeting Dates

The MSCWMO Regular Meeting is currently scheduled for 6:00 p.m. the 2nd Thursday of each month at the Bayport Public Library.

In 2017, the MSCWMO Board of Directors did not meet in March, May, or August due to lack of agenda items. In 2017, staff is recommending March, July and August as tentative meeting dates.

January 11th, 2018

February 9th, 2018

March 8th, 2018-Tenative

April 12th, 2018

May 10th, 2018-Tenative

June 7th, 2018

July 12th, 2018

August 9th, 2018-Tenative

September 13th, 2018

October 11th, 2018

November 8th, 2018

December 13th, 2018

Motion by Board Member 1, seconded by Board Member 2, to approve the 2018 MSCWMO Board of Directors Meeting dates.

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MSCWMO PROJECT REVIEW PROCESS – SUBMITTAL TIMING

The applicant shall submit projects qualifying for full review to the MSCWMO administrator at least 21 days prior to the scheduled meeting date of the MSCWMO Board. Late submittals or submittals with incomplete exhibits will be scheduled to a subsequent meeting date. Comments will be returned to the member community within 60 days of receipt.

It is recommended that the applicant (or applicant's representative), member community, MSCWMO staff, and any other government agencies with jurisdiction meet to discuss upcoming submittals a minimum of 7 days before the submittal deadline. The following table contains the pre-application meeting deadline, submittal deadline, and board meeting dates for 2018.

2018 PROJECT REVIEW IMPORTANT DATES

Pre-Application Meeting Deadline*	Submittal Deadline	MSCWMO Board Meeting
December 15th, 2017	December 22nd, 2017	January 11th, 2018
January 12th, 2018	January 19th, 2018	February 9th, 2018
February 8th, 2018	February 15th, 2018	March 8th, 2018
March 15th, 2018	March 22nd, 2018	April 12th, 2018
April 12th, 2018	April 19th, 2018	May 10th, 2018
May 9th, 2018	May 17th, 2018	June 7th, 2018
June 14th, 2018	June 21st, 2018	July 12th, 2018
July 12th, 2018	July 19th, 2018	August 9th, 2018
August 16th, 2018	August 23rd, 2018	September 13th, 2018
September 13th, 2018	September 20th, 2018	October 11th, 2018
October 11th, 2018	October 18th, 2018	November 8th, 2018
November 15th, 2018	November 22nd, 2018	December 13th, 2018

** Not required*

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MSCWMO 2017 REVIEW FEES

MEMORANDUM

TO: Middle St. Croix WMO Board of Managers
FROM: Mikael Isensee, Administrator
DATE: December 14, 2017

RE: 6c) 2018 MSCWMO Review Fees

Staff recommends maintaining the existing review fee structure below for 2018.

SINGLE LOT RESIDENCE REVIEW FEE: $350

ALL OTHER DEVELOPMENT REVIEWS BY FEE SCALE

Total review fee = new or reconstructed impervious surface fee + land disturbance fee.

Standard 5.1 Water Quantity and Quality:		
Less than one acre of new or reconstructed impervious	$350	_____
1-5 acres of new or reconstructed impervious	$500	_____
5-20 acres of new or reconstructed impervious	$1,000	_____
20 acres or more of new or reconstructed impervious	$2,000	_____
Standard 5.2 Erosion and Sediment Control		
10,000 sqft-1 acre of land disturbance	$350	_____
1 acre-5 acres of land disturbance	$500	_____
5 acres-20 acres of land disturbance	$750	_____
20 acres or more of land disturbance	$1,000	_____
	Total Review Fee	

Government entities are exempt from review fees
Projects not meeting applicable performance standards will require submittal of a new application and fee for re-review.

2018 MSCWMO Review Fees
Motion by Board Member 1, seconded by Board Member 2, to maintain the 2017 MSCWMO Review Fee schedule for 2018.

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MEMORANDUM

TO: Middle St. Croix WMO Board of Managers
FROM: Mikael Isensee, Administrator
DATE: December 14, 2017

RE: **5d) 2018 MCC Grant Application**

The Middle St. Croix in collaboration with the Washington Conservation is proposing to submit Minnesota Conservation Corps crew time grants in December. The applications are for crews to assist with the planting of bioretention basins in Stillwater, installing a shoreline buffer along Perro Creek in Bayport, and planting native shoreline restoration areas in Lake St. Croix Beach. The MSCWMO is requesting a 14 days crew time to complete the proposed projects in 2018.

EXAMPLE BOARD MOTION FOR MINUTES:

2018 Minnesota Conservation Corps Crew Time Grant Application

Motion by Board Member 1, seconded by Board Member 2, to submit the MCC Clean Water Fund Grant application for crew time to help complete local conservation projects.

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MEMORANDUM

TO: Middle St. Croix WMO Board of Managers
FROM: Mikael Isensee, Administrator
DATE: December 14, 2017

7 a) Nelson School Townhome Permeable Paver Reimbursement

On October 12, 2017 the MSCWMO approved a $250 water quality grant not to exceed $250 for the installation of a 450 square foot permeable paver sidewalk at 1018 First Street South in Stillwater. The project is located within the Lake St. Croix Direct Drainage area.

Installation is complete for a total project cost of $7,620.00. Technical staff have reviewed the installation and confirmed that it was installed per plan. Staff recommend reimbursement of $250.00.

Nelson School Townhouse Permeable Paver Sidewalk Grant

Motion by Board Member 1, seconded by Board Member 2, to approve reimbursement of $250.00 for the installation per plans of a 450 square foot permeable paver sidewalk at 1018 First Street South.

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November 14, 2017

Nancy Healey
Baytown Township
4020 McDonald Dr.
Stillwater, MN 55082

RE: CSAH 21 Pavement Management and Safety Improvements Project

Dear Ms. Healey,

The Middle St. Croix Watershed Management Organization (MSCWMO) received revised submittals on November 20, 2017, for the proposed CSAH 21 Pavement Management and Safety Improvement Project, located within MSCWMO boundaries in the Township of Baytown. The proposed project qualifies for full review under the MSCWMO 2015 Watershed Management Plan (WMP).

The project provided sufficient information to determine compliance with applicable Performance Standards contained within Section 7.0 of the 2015 MSCWMO WMP. The MSCWMO recommends approval with the following conditions and technical recommendations:

Conditions

1. Identify the locations and demonstrate adequate storage for temporary sediment basins
2. Call out in the plan sheets that excavation within 3.0 feet of final grade for infiltration/filtration systems is prohibited until contributing drainage areas are constructed and fully stabilized.
3. Note that prior to the release of any remaining fee or security, the contractor must provide documentation that constructed volume control facilities have the capacity and perform as designed.

Technical Recommendations

1. Specify MnDOT Type 2 Circular Knit sock for biofiltration underdrains
2. Reduce the total length of underdrains to 60% of the length of the biofiltration cell to maximize filtration media and reduce short circuiting of stormwater into the underdrain.
3. Require double ring infiltrometer testing to demonstrate in accordance with ASTM D3385-09 “Standard Test Method for Infiltration Rate of Soils in Field Using Double-Ring Infiltrometer”.
4. Move the gate valve access point to a location that is higher than the normal ponding depth of the basin.

The enclosed checklist contains detailed information on project review qualification and the policies and performance standards of the WMP. MSCWMO review process information can be downloaded from www.mscwmo.org. Feel free to contact me at 651-330-8220 x22 or misensee@mnwcd.org if you have any questions regarding these comments.

Sincerely,

Mikael Isensee
Administrator
Middle St. Croix Watershed Management Organization

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PROJECT REVIEW

MSCWMO Project Review ID: 17-017

Project Name: SAP 082-621-036 CSAH 21

Applicant: Washington County Transportation

Purpose: Pavement Management and Safety Improvement

Location: 1200 Feet North of 34th Street to 200 Feet South of 56th Street
Baytown Township, City of Bayport, City of Oak Park Heights

Review date: 12/12/2017

Recommendation: Approve with 3 Conditions and 4 Technical Recommendations.

Conditions

1. Identify the locations and demonstrate adequate storage for temporary sediment basins
2. Call out in the plan sheets that excavation within 3.0 feet of final grade for infiltration/filtration systems is prohibited until contributing drainage areas are constructed and fully stabilized.
3. Note that prior to the release of any remaining fee or security, the contractor must provide documentation that constructed volume control facilities have the capacity and perform as designed.

Technical Recommendations

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4. Move the gate valve access point to a location that is higher than the normal ponding depth of the basin.

Applicability:

☒ Any project undertaking grading, filling, or other land alteration activities that involve movement of 100 cubic yards of earth or removal of vegetation on greater than 10,000 square feet of land

☒ Any project that creates or fully reconstructs 6,000 square feet or more of impervious surface

☐ All major subdivisions or minor subdivisions that are part of a common plan of development. Major subdivisions are defined as subdivisions with 4 or more lots.

☐ Any project with wetland impacts

☐ Any project with grading within public waters

☐ Any project with grading within buffers

☐ Any project with grading within 40-feet of the bluff line

☐ Development projects that impact 2 or more of the member communities

☐ New or redevelopment projects within the St. Croix Riverway that require a building permit that adds five hundred (500) square feet or more of additional impervious surface

☐ Any project requiring a variance from the current local impervious surface zoning requirements for the property

☐ Any land development activity, regardless of size, that the City determines is likely to cause an adverse impact to an environmentally sensitive area or other property, or may violate any other erosion and sediment control standard set by the member community.

SUBMITTAL ITEMS:
Electronic submittals are highly encouraged

☒ A completed and signed project review application form and review fee

☒ Grading Plan/Mapping Exhibits

a. Property lines and delineation of lands under ownership of the applicant.

b. Delineation of existing on-site wetlands, shoreland and/or floodplain areas (including any buffers).

c. Ordinary High Water (OHW) elevations and datum, as determined by the MDNR (if applicable).

d. Existing and proposed site contour elevations related to NAVD 1988 datum (preferred) or NGVD, 1929. Datum must be noted on exhibits.

e. Drainage easements covering land adjacent to ponding areas, wetlands, and waterways up to their 100-year flood levels and covering all ditches and storm sewers. Access easements to these drainage easements and to other stormwater management facilities shall also be shown.

f. Minimum building elevation for each lot.

g. Identification of downstream water body.

☒ Permanent Stormwater Management System in compliance with the requirements of the NPDES SDS Construction Stormwater Permit and MSCWMO Performance Standards.

a. Impervious areas (Pre- and Post-Construction).

b. Construction plans and specifications for all proposed stormwater management facilities.

c. Location(s) of past, current or future onsite well and septic systems (if applicable).

☒ Other exhibits required to show conformance to these Performance Standards

☒ A Stormwater Pollution Prevention Plan in compliance with the requirements of the NPDES SDS Construction Stormwater Permit

☒ Grading Plan/Mapping Exhibits:

a. Delineation of the subwatersheds contributing runoff from off-site, proposed and existing on-site subwatersheds, and flow directions/patterns.

b. Location, alignment, and elevation of proposed and existing stormwater facilities.

c. Existing and proposed normal water elevations and the critical (the highest) water level produced from the 100-year 24-hour storms.

d. Location of the 100-year flood elevation, natural overflow elevation, and lowest floor elevations.

☒ Hydrologic/Hydraulic Design Exhibits:

a. All hydrologic and hydraulic computations completed to design the proposed stormwater management facilities shall be submitted. Model summaries must be submitted. The summaries shall include a map that corresponds to the drainage areas in the model and all other information used to develop the model.

b. A table (or tables) must be submitted showing the following:

i. A listing of all points where runoff leaves the site and the existing and proposed stormwater runoff rates and volumes.

ii. A listing of the normal water levels under existing and proposed conditions and the water levels produced from the storm and runoff events listed above for all on-site wetlands, ponds, depressions, lakes, streams, and creeks.

NA Dedications or easements for the portions of the property which are adjacent to the facility and which lie below the 100 year flood level. For sites within public right-of-way, no easement is required.

NA A proposed maintenance agreement, which may be in the format of Appendix K, or other form approved by the city.

HISTORY & CONSIDERATIONS:

SPECIAL OR IMPAIRED WATER

☒ This site drains to, and is within one mile of special or impaired water and complies with enhanced protections.

a. Scenic or Recreational river C.1., C.2., C.3.

b. Scientific and Natural area C.1., C.2., C.3.

c. Waterbody with a TMDL C.1., C.2.

C.1. Stabilization initiated immediately and all soils protected in seven days/provide temp basin for five acres draining to common location.

C.2. Treat water quality volume of one inch of runoff by retaining on site unless not feasible due to site conditions (See Part III.D.1. design requirements).

C.3. Maintain buffer zone of 100 linear feet from Special Water.

EROSION AND SEDIMENT CONTROL [*A checked box indicates compliance]*

☒ *A Stormwater Pollution Prevention Plan (SWPPP) that meets the National Pollutant Discharge Elimination System (NPDES) requirements.*

Narrative

☒ Identify the person knowledgeable and experienced who will oversee the implementation of the SWPPP; the installation, inspection, and maintenance of the BMPs.

a. Identifies the person who will oversee the BMP inspection and maintenance.

b. Identify the training requirements are satisfied.

c. Inspections performed once every 7 days.

d. Inspections performed within 24 hours of a rain event greater than 0.5 in/24 hours.

e. Inspection and Maintenance records include:

i. Date and time of inspection.

ii. Name of person(s) conducting inspections.

iii. Finding of inspections, including the specific location where corrective actions are needed.

iv. Corrective actions taken (including dates, times, and party completing maintenance activities).

v. Date and amount of rainfall events greater than 0.5 in/24 hours.

vi. Rainfall amounts must be obtained by a properly maintained rain gauge installed onsite, or by a weather station that is within one mile or by a weather reporting system.

vii. Requirements to observe, describe, and photograph any discharge that may be occurring during the inspection.

viii. All discovered nonfunctional BMPs must be repaired, replaced, or supplemented with functional BMPs within 24 hours after discovery, or as soon as field conditions allow.

☒ Describes procedures to amend the SWPPP and establish additional temporary ESC BMPs as necessary for site conditions.

☒ Describes the installation timing for all Erosion Sediment Control (ESC) Best Management Practices (BMPs).

☒ Describes final stabilization methods for all exposed areas.

☒ Methods used to minimize soil compaction and preserve topsoil must be described.

☒ Describes dewatering technique to prevent nuisance conditions, erosion, or inundation of wetlands?

NA Identifies any specific chemicals and the chemical treatment systems that may be used for enhancing the sedimentation process on the site, and how compliance will be achieved with the permit requirements.

☒ Describes pollution prevention management measures

a. Storage, handling, and disposal of construction products, materials, and wastes.

b. Fueling and maintenance of equipment or vehicles; spill prevention and response.

c. Vehicle and equipment washing.

d. No engine degreasing allowed on site.

e. Containment of Concrete and other washout waste.

f. Portable toilets are positioned so that they are secure.

Plan sheets

☐ *Temporary Sediment Basins required (10 acres draining to common location or **5 acres** App. A)*
Basin design meets the following criteria:

a. Adequately sized – 2-year, 24-hour storm, minimum 1,800 feet/acre; or no calculative minimum 3,600ft3/acre.

b. Designed to prevent short circuiting.

c. Outlets designed to remove floating debris.

d. Outlets designed to allow complete drawdown.

e. Outlets designed to withdraw water from the surface

f. Outlets have energy dissipation.

g. Have a stabilized emergency spillway.

h. Situated outside of surface waters and any natural buffers.

☒ Locations and types of all temporary and permanent Erosion Control BMPs.

a. Exposed soils have erosion protection/cover initiated immediately and finished within 7 days.

b. Wetted perimeters of ditches stabilized within 200 feet of surface water within 24 hours.

c. Pipe outlets have energy dissipation within 24 hours of connecting.

☒ Locations and types of all temporary and permanent Sediment Control BMPs.

a. Sediment control practices established on down gradient perimeters and upgradient of any buffer zones.

b. All inlets are protected.

c. Stockpiles have sediment control and placed in areas away from surface waters or natural buffers.

d. Construction site entrances minimize street tracking?

e. Plans minimize soil compaction and, unless infeasible to preserve topsoil.

f. 50 foot natural buffers preserved or (if not feasible) provide redundant sediment controls when a surface water is located within 50 feet of the project's earth disturbances and drains to the surface water.

☒ Tabulated quantities of all erosion prevention and sediment control BMPs.

☒ Stormwater flow directions and surface water divides for all pre- and post-construction drainage areas.

☒ Locations of areas not to be disturbed (buffer zones).

☒ Location of areas where construction will be phased to minimize duration of exposed soil areas.

NA *Blufflines are protected from construction activities in urban (40 foot buffer) areas and rural areas (100-foot buffer).*

LAKE, STREAM AND WETLAND BUFFERS

☒ A buffer zone of unmowed natural vegetation is maintained or created upslope of all water bodies (wetlands, streams, lakes).

☒ A 50 foot natural buffer or (if a buffer is infeasible) provide redundant sediment controls when a surface water is located within 50 feet of the project's earth disturbances and stormwater flows to the surface water.

NA If adjacent to a Special or Impaired Water an undisturbed buffer zone of not less than 100 linear feet from the special water is maintained both during construction and as a permanent feature post construction.

STORMWATER MANAGEMENT *[A checked box indicates compliance]*

☒ Water quality treatment is provided prior to direct discharge of stormwater to wetlands and all other water bodies.

Rate and Flood Control Standards

☒ The peak rate of stormwater runoff from a newly developed or redeveloped site shall not exceed the 2-, 10-, and 100-year 24-hour storms with respective 2.8, 4.2, and 7.3-inch rainfall depths with MSCWMO approved time distribution based on Atlas 14 for existing and proposed conditions. The runoff curve number for existing agriculture areas shall be less than or equal to the developed condition curve number. The newly developed or redeveloped peak rate shall not exceed the existing peak rate of runoff for all critical duration events, up to and including the 100-year return frequency storm event for all points where discharges leave a site during all phases of development.

☒ Predevelopment conditions assume "good hydrologic conditions" for appropriate land covers as identified in TR−55 or an equivalent methodology. Runoff curve numbers have been increased where predevelopment land cover is cropland:

Hydrologic Soil Group A: Runoff Curve Number 56
Hydrologic Soil Group B: Runoff Curve Number 70
Hydrologic Soil Group C: Runoff Curve Number 79
Hydrologic Soil Group D: Runoff Curve Number 83

☒ Computer modeling analyses includes secondary overflows for events exceeding the storm sewer systems level-of-service up through the critical 100-year event.

NA In sub-areas of a landlocked watershed, the proposed project does not increase the predevelopment volume or rate of discharge from the sub-area for the 10-year return period event.

NA Flowage easements up to the 100-yr flood level have been secured for stormwater management facilities (such as ditches and storm sewers).

☒ Lowest floor elevations of structures built adjacent to stormwater management features and other water bodies are a minimum of two feet above the 100-year flood elevation and a minimum of two feet above the natural overflow of landlocked basins.

Volume Control Standards

☐ Calculations/computer model results indicate stormwater volume is controlled for new development and redevelopment requirements per the MSCWMO Design Standards.

1. New Nonlinear Development 1.1" * new impervious surfaces
2. Reconstruction/Redevelopment Projects 1.1" * reconstructed impervious surfaces
3. **Linear Projects 0.55" * new and/or fully reconstructed impervious surface and 1.1" from net increase in impervious area**
4. Sites with Restrictions- flexible treatment options documentation has been provided.

Volume Retention Required (cu. ft.)	Volume Retention Provided (cu. ft.)	
	BMP	**Volume**
392,475 sf *0.55" = 18,512 cu. ft.	BMP #1	7,840 cu. ft.
	BMP #2	10,672 cu. ft.
Total Required 18,512 cu. ft.	**Total Proposed**	**18,512 cu.ft.**

Flexible Treatment Options (when applicable)

NA Applicant demonstrated qualifying restrictions as defined in Section 7.2.2 (4) of the 2015 MSCWMO Watershed Management Plan that prohibits the infiltration of the entire required volume.

NA MIDS calculator submission removes 75% of the annual total phosphorous.

Infiltration/Filtration Design Standards

☒ Proposed stormwater management features meet or exceed NPDES General Construction Permit requirements are designed in conformance with the most recent edition of the State of Minnesota Stormwater Manual.

☒ None of the following conditions exist that prohibit infiltration of stormwater on the site

a. Areas where vehicle fueling and maintenance occur.
b. Areas with less than three (3) feet of separation distance from the bottom of the infiltration system to the elevation of the seasonally saturated soils or the top of bedrock.
c. Areas where industrial facilities are not authorized to infiltrate industrial stormwater under an National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Industrial Stormwater Permit issued by the MPCA.
d. Areas where contaminants in soil or groundwater will be mobilized by infiltrating stormwater.
e. Areas of Hydrologic Soil Group D (clay) soils
f. Areas within 1,000 feet up-gradient, or 100 feet down-gradient of active karst features unless allowed by a local unit of government with a current MS4 permit.

☒ Minimum setbacks from the Minnesota Department of Health for infiltration practices are met

Setback	Minimum Distance (ft)
Property line	10
Building foundation*	10
Private well	35
Public water supply well	50
Septic system tank/leach field	35
*Minimum with slopes directed away from the building	

☒ Pretreatment devices(s) remove at least 50% of sediment loads. If downstream from a potential hot spot, a skimmer is in place to facilitate cleanup.

☒ Water quality volume will be discharged through infiltration or filtration media in 48 hours or less.

a. For bioretention (biofiltration and bioinfiltration) volume control management facilities above ground with vegetation the period of inundation shall be calculated using the maximum water depth below the surface discharge elevation and the soil infiltration rate.

b. For infiltration basin volume control management facilities the period of inundation shall be calculated using the maximum water depth below the surface discharge elevation and the soil infiltration rate.

☒ Appropriate soil borings have been conducted that meet the minimum standards.

a. A minimum of one boring was conducted at the location of the infiltration facility for facilities up to 1,000 ft²; between 1,000 and 5,000 ft², two borings, between 5,000 and 10,000 ft², three borings and greater than 10,000 ft² 4 borings plus an additional boring for every 2,500 ft² beyond 12,500 ft²
b. Soil borings extend a minimum of five feet below the bottom of the infiltration practice. If fractured bedrock is suspected, the soil boring goes to a depth of at least ten feet below the proposed bottom of the volume control facility.
c. A minimum of three feet of separation to the seasonal water table and/or bedrock.
d. Identify unified soil classification.

☒ The least permeable soils horizon identified in the soil boring dictated the infiltration rate.

☒ Additional flows are bypassed and are routed through stabilized discharge points.

☒ Filtration basin demonstrates a basin draw down between 24 hours and 48 hours.

NA Filtration system Iron Enhanced Sand Filter is sized to bind soluble phosphorous removal for 30 year functional life of the system using the published value of 17lbs.phosphorous removal per 20 yards of 5% by weight iron filings to 95% sand.

☐ Construction plans provide adequate construction guidance to prevent clogging or compaction and demonstrate performance.

a. Excavation within 3.0 feet of final grade for infiltration/filtration systems is prohibited until contributing drainage areas are constructed and fully stabilized.
b. Rigorous sediment and erosion controls planned to divert runoff away from the system.
c. Installation of volume control facilities must occur in dry soil conditions. Excavation, soil placement and rapid stabilization of perimeter slopes must be accomplished prior to the next precipitation event.
d. Excavation shall be performed by an excavator with a toothed bucket. Use excavator bucket to place materials. Construction equipment shall not be allowed into the basin.
e. Prior to the release of any remaining fee or security, the permit holder must provide documentation that constructed volume control facilities have the capacity and perform as designed.

☒ There is a way to visually verify the system is operating as designed.

☒ A minimum 8.0’ maintenance access is provided to all stormwater facilities.

WETLAND PERFORMANCE STANDARDS

☒ Direct discharge of stormwater to wetlands and all other water bodies without water quality treatment is prohibited.

☒ Any potential changes to the hydrology of the wetland (i.e. changes to the outlet elevation or contributing drainage area) must be reviewed to evaluate the impact of both the existing and proposed wetland conditions and approved by the MSCWMO.

☒ Land-altering activities shall not increase the bounce in water level or duration of inundation from a 2.0-inch 24-hour storm for any downstream wetland beyond the limit specified in Table 7.2 for the individual wetland susceptibility class.

MIDDLE ST. CROIX WATERSHED MANAGEMENT ORGANIZATION
455 Hayward Avenue N.
Oakdale, MN 55128
Phone 651.330.8220 x22 fax 651.330.7747 www.mscwmo.org

MEMORANDUM

TO: Middle St. Croix WMO Board of Managers
FROM: Mikael Isensee, Administrator
DATE: December 14, 2017

RE: **8b) St. Croix Crossing and Loop Trail Phase II**

St. Croix Crossing Project Summary

Cadet Infiltration Basin, located on the North side of HWY 36 on the west approach of the St. Croix Crossing bridge, was credited for the infiltration of 2.24 acre feet of stormwater to meet the MSCWMO volume control standards during the project review process in 2014.

During the construction of the basin in August, the contractor noted substantially slower draining native soils than were identified in the plans and notified MnDOT. MSCWMO Technical staff met onsite at the Cadet Infiltration Basin excavation on August 31, 2017. After additional fact finding the MSCWMO staff identified the following findings:

1. The native soils at Cadet Basin support a design infiltration rate of 0.45" per hour instead of the original planned rate of 1.6" per hour. This reduced native soil infiltration rate impedes the infiltration of the full 2.24 acre feet within 48 hours.
2. The St. Croix Crossings project is fully constructed and there are no additional opportunities to infiltrate stormwater other than the Cadet Basin location
3. Additional soil infiltration rate testing is not expected to result in a higher infiltration rate to support a rate greater than .45" per hour.
4. Additional excavation is not expected to find native soils with a higher infiltration rate.
5. Research demonstrates that biofiltration basins with an underdrain suspended above the native soils (referred to as internal water storage zone in research documents) optimize both volume and pollutant reduction in areas of low infiltration rates.
6. In 2015 the MSCWMO adopted Minimal Impact Design Standards which include flexible treatment options and the MIDS Calculators for sites with restrictions.
7. Infiltration facilities constructed in soils with low hydraulic conductivity and volumes that exceed the 48 hours draw down time have a high risk of failure.

Based on these findings MnDOT modified the basin to perform as a combination infiltration/filtration basin that exceeded the goals of MIDS Flexible Treatment Option #1 based on outputs from the MIDS calculator.

Loop Trail Phase II Project Summary

The purpose of the project is to construct a multi-use trail for the City of Stillwater. This trail will connect to the trail started under SP8214-114 to provide an upper and lower route option for pedestrians and bicyclists. This work will also include a parking lot and a maintenance road that lead down to the river. It is anticipated that the DNR will construct a boat launch in this area (plan

by others). To accommodate this new trail, MnDOT will be adding stormsewer to collect water from existing TH95 infrastructure and the trail to route it in such a manner to avoid or mitigate damage to historical walls, and to reduce erosion. At discharge points, MnDOT will install two SAFL Baffles to capture sediment from an 18" and a 24" pipe prior to discharging to Lake St. Croix.

The project will disturb approximately 6 acres of land and will result in a net decrease of 0.08 acres of impervious surface, but will require an additional 1,742 cubic feet of volume control.

MnDOT provided a large number of challenges and obstacles to providing stormwater treatment in this area and have requested credits from Cadet Infiltration Basin as approved by the MSCWMO Technical Staff. MSCWMO Technical Staff confirmed the Cadet Basin provides sufficient treatment for exceed MIDS Flexible Treatment Option #1 with the additional volume.

EXAMPLE BOARD MOTION FOR MINUTES:

St. Croix Crossings and Loop Trail Phase II Stormwater Treatment

Motion by Board Member 1, seconded by Board Member 2, to the modifications to Cadet Infiltration Basin to meet MIDS Flexible Treatment Options #1 and provide credit for reconstructed impervious surfaces for Loop Trail Phase II.

MIDDLE ST. CROIX WATERSHED MANAGEMENT ORGANIZATION
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PROJECT REVIEW

MSCWMO Project Review ID: 17-018

Project Name: St. Croix Loop Trail Phase II

Applicant: MnDOT

Purpose: Construct a multi-use trail for the City of Stillwater. This work will also include a parking lot and a maintenance road that lead down to the river. It is anticipated that the DNR will construct a boat launch in this area (plan by others). To accommodate this new trail, MnDOT will be adding stormsewer to collect water from existing TH95 infrastructure and the trail to route it in such a manner to avoid or mitigate damage to historical walls, and to reduce erosion.

Location: This trail will connect to the trail started under SP8214-114 to provide an upper and lower route option for pedestrians and bicyclists.

Review date: 12/14/2017

Recommendation: Approve

Applicability:

- ☒ Any project undertaking grading, filling, or other land alteration activities that involve movement of 100 cubic yards of earth or removal of vegetation on greater than 10,000 square feet of land
- ☐ Any project that creates or fully reconstructs 6,000 square feet or more of impervious surface
- ☐ All major subdivisions or minor subdivisions that are part of a common plan of development. Major subdivisions are defined as subdivisions with 4 or more lots.
- ☐ Any project with wetland impacts
- ☐ Any project with grading within public waters
- ☐ Any project with grading within buffers
- ☐ Any project with grading within 40-feet of the bluff line
- ☐ Development projects that impact 2 or more of the member communities
- ☐ New or redevelopment projects within the St. Croix Riverway that require a building permit that adds five hundred (500) square feet or more of additional impervious surface

☐ Any project requiring a variance from the current local impervious surface zoning requirements for the property

☐ Any land development activity, regardless of size, that the City determines is likely to cause an adverse impact to an environmentally sensitive area or other property, or may violate any other erosion and sediment control standard set by the member community.

SUBMITTAL ITEMS:

Electronic submittals are highly encouraged

☒ A completed and signed project review application form and review fee

☒ Grading Plan/Mapping Exhibits

a. Property lines and delineation of lands under ownership of the applicant.

b. Delineation of existing on-site wetlands, shoreland and/or floodplain areas (including any buffers).

c. Ordinary High Water (OHW) elevations and datum, as determined by the MDNR (if applicable).

d. Existing and proposed site contour elevations related to NAVD 1988 datum (preferred) or NGVD, 1929. Datum must be noted on exhibits.

e. Drainage easements covering land adjacent to ponding areas, wetlands, and waterways up to their 100-year flood levels and covering all ditches and storm sewers. Access easements to these drainage easements and to other stormwater management facilities shall also be shown.

f. Minimum building elevation for each lot.

g. Identification of downstream water body.

☒ Permanent Stormwater Management System in compliance with the requirements of the NPDES SDS Construction Stormwater Permit and MSCWMO Performance Standards.

a. Impervious areas (Pre- and Post-Construction).

b. Construction plans and specifications for all proposed stormwater management facilities.

c. Location(s) of past, current or future onsite well and septic systems (if applicable).

☒ Other exhibits required to show conformance to these Performance Standards

☒ A Stormwater Pollution Prevention Plan in compliance with the requirements of the NPDES SDS Construction Stormwater Permit

☒ Grading Plan/Mapping Exhibits:

a. Delineation of the subwatersheds contributing runoff from off-site, proposed and existing on-site subwatersheds, and flow directions/patterns.

b. Location, alignment, and elevation of proposed and existing stormwater facilities.

c. Existing and proposed normal water elevations and the critical (the highest) water level produced from the 100-year 24-hour storms.

d. Location of the 100-year flood elevation, natural overflow elevation, and lowest floor elevations.

☒ Hydrologic/Hydraulic Design Exhibits:

a. All hydrologic and hydraulic computations completed to design the proposed stormwater management facilities shall be submitted. Model summaries must be submitted. The summaries shall include a map that corresponds to the drainage areas in the model and all other information used to develop the model.

b. A table (or tables) must be submitted showing the following:

i. A listing of all points where runoff leaves the site and the existing and proposed stormwater runoff rates and volumes.

ii. A listing of the normal water levels under existing and proposed conditions and the water levels produced from the storm and runoff events listed above for all on-site wetlands, ponds, depressions, lakes, streams, and creeks.

NA Dedications or easements for the portions of the property which are adjacent to the facility and which lie below the 100 year flood level. For sites within public right-of-way, no easement is required.

NA A proposed maintenance agreement, which may be in the format of Appendix K, or other form approved by the city.

HISTORY & CONSIDERATIONS:

SPECIAL OR IMPAIRED WATER

NA This site drains to, and is within one mile of special or impaired water and complies with enhanced protections.

a. Scenic or Recreational river C.1., C.2., C.3.

b. Scientific and Natural area C.1., C.2., C.3.

c. Waterbody with a TMDL C.1., C.2.

C.1. Stabilization initiated immediately and all soils protected in seven days/provide temp basin for five acres draining to common location.

C.2. Treat water quality volume of one inch of runoff by retaining on site unless not feasible due to site conditions (See Part III.D.1. design requirements).

C.3. Maintain buffer zone of 100 linear feet from Special Water.

EROSION AND SEDIMENT CONTROL [*A checked box indicates compliance]*

☐ *A Stormwater Pollution Prevention Plan (SWPPP) that meets the National Pollutant Discharge Elimination System (NPDES) requirements.*

Narrative

☒ Identify the person knowledgeable and experienced who will oversee the implementation of the SWPPP; the installation, inspection, and maintenance of the BMPs.

a. Identifies the person who will oversee the BMP inspection and maintenance.

b. Identify the training requirements are satisfied.

c. Inspections performed once every 7 days.

d. Inspections performed within 24 hours of a rain event greater than 0.5 in/24 hours.

e. Inspection and Maintenance records include:

i. Date and time of inspection.

ii. Name of person(s) conducting inspections.

iii. Finding of inspections, including the specific location where corrective actions are needed.

iv. Corrective actions taken (including dates, times, and party completing maintenance activities).

v. Date and amount of rainfall events greater than 0.5 in/24 hours.

vi. Rainfall amounts must be obtained by a properly maintained rain gauge installed onsite, or by a weather station that is within one mile or by a weather reporting system.

vii. Requirements to observe, describe, and photograph any discharge that may be occurring during the inspection.

viii. All discovered nonfunctional BMPs must be repaired, replaced, or supplemented with functional BMPs within 24 hours after discovery, or as soon as field conditions allow.

☒ Describes procedures to amend the SWPPP and establish additional temporary ESC BMPs as necessary for site conditions.

☒ Describes the installation timing for all Erosion Sediment Control (ESC) Best Management Practices (BMPs).

☒ Describes final stabilization methods for all exposed areas.

☒ Methods used to minimize soil compaction and preserve topsoil must be described.

☒ Describes dewatering technique to prevent nuisance conditions, erosion, or inundation of wetlands?

NA Identifies any specific chemicals and the chemical treatment systems that may be used for enhancing the sedimentation process on the site, and how compliance will be achieved with the permit requirements.

☒ Describes pollution prevention management measures

a. Storage, handling, and disposal of construction products, materials, and wastes.

b. Fueling and maintenance of equipment or vehicles; spill prevention and response.

c. Vehicle and equipment washing.

d. No engine degreasing allowed on site.

e. Containment of Concrete and other washout waste.

f. Portable toilets are positioned so that they are secure.

Plan sheets

NA *Temporary Sediment Basins required (10 acres draining to common location or **5 acres** App. A)*
Basin design meets the following criteria:

a. Adequately sized – 2-year, 24-hour storm, minimum 1,800 feet/acre; or no calculative minimum 3,600ft3/acre.

b. Designed to prevent short circuiting.

c. Outlets designed to remove floating debris.

d. Outlets designed to allow complete drawdown.

e. Outlets designed to withdraw water from the surface

f. Outlets have energy dissipation.

g. Have a stabilized emergency spillway.

h. Situated outside of surface waters and any natural buffers.

☒ Locations and types of all temporary and permanent Erosion Control BMPs.

a. Exposed soils have erosion protection/cover initiated immediately and finished within 7 days.

b. Wetted perimeters of ditches stabilized within 200 feet of surface water within 24 hours.

c. Pipe outlets have energy dissipation within 24 hours of connecting.

☒ Locations and types of all temporary and permanent Sediment Control BMPs.

a. Sediment control practices established on down gradient perimeters and upgradient of any buffer zones.

b. All inlets are protected.

c. Stockpiles have sediment control and placed in areas away from surface waters or natural buffers.

d. Construction site entrances minimize street tracking?

e. Plans minimize soil compaction and, unless infeasible to preserve topsoil.

f. 50 foot natural buffers preserved or (if not feasible) provide redundant sediment controls when a surface water is located within 50 feet of the project's earth disturbances and drains to the surface water.

☒ Tabulated quantities of all erosion prevention and sediment control BMPs.

☒ Stormwater flow directions and surface water divides for all pre- and post-construction drainage areas.

☒ Locations of areas not to be disturbed (buffer zones).

NA Location of areas where construction will be phased to minimize duration of exposed soil areas.

NA *Blufflines are protected from construction activities in urban (40 foot buffer) areas and rural areas (100-foot buffer).*

LAKE, STREAM AND WETLAND BUFFERS

☒ A buffer zone of unmowed natural vegetation is maintained or created upslope of all water bodies (wetlands, streams, lakes).

☒ A 50 foot natural buffer or (if a buffer is infeasible) provide redundant sediment controls when a surface water is located within 50 feet of the project's earth disturbances and stormwater flows to the surface water.

☒ If adjacent to a Special or Impaired Water an undisturbed buffer zone of not less than 100 linear feet from the special water is maintained both during construction and as a permanent feature post construction.

STORMWATER MANAGEMENT *[A checked box indicates compliance]*

☒ Water quality treatment is provided prior to direct discharge of stormwater to wetlands and all other water bodies.

Rate and Flood Control Standards

☒ The peak rate of stormwater runoff from a newly developed or redeveloped site shall not exceed the 2-, 10-, and 100-year 24-hour storms with respective 2.8, 4.2, and 7.3-inch rainfall depths with MSCWMO approved time distribution based on Atlas 14 for existing and proposed conditions. The runoff curve number for existing agriculture areas shall be less than or equal to the developed condition curve number. The newly developed or redeveloped peak rate shall not exceed the existing peak rate of runoff for all critical duration events, up to and including the 100-year return frequency storm event for all points where discharges leave a site during all phases of development.

☒ Predevelopment conditions assume "good hydrologic conditions" for appropriate land covers as identified in TR−55 or an equivalent methodology. Runoff curve numbers have been increased where predevelopment land cover is cropland:

Hydrologic Soil Group A: Runoff Curve Number 56
Hydrologic Soil Group B: Runoff Curve Number 70
Hydrologic Soil Group C: Runoff Curve Number 79
Hydrologic Soil Group D: Runoff Curve Number 83

☒ Computer modeling analyses includes secondary overflows for events exceeding the storm sewer systems level-of-service up through the critical 100-year event.

NA In sub-areas of a landlocked watershed, the proposed project does not increase the predevelopment volume or rate of discharge from the sub-area for the 10-year return period event.

NA Flowage easements up to the 100-yr flood level have been secured for stormwater management facilities (such as ditches and storm sewers).

☒ Lowest floor elevations of structures built adjacent to stormwater management features and other water bodies are a minimum of two feet above the 100-year flood elevation and a minimum of two feet above the natural overflow of landlocked basins.

Volume Control Standards

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4. **Sites with Restrictions- flexible treatment options documentation has been provided.**

Volume Retention Required (cu. ft.)	Volume Retention Provided (cu. ft.)
88378 sf *0.55" = x cu. ft. 118839 sf *1.1" = 1,742 cu. ft. **Total Required 1,742 cu. ft.**	**BMP Volume** Utilizing credit in the Cadet Infiltration/Filtration Basin located on the north side of HWY36 at the St. Croix Crossings Bridge.

Flexible Treatment Options (when applicable)

☒ Applicant demonstrated qualifying restrictions as defined in Section 7.2.2 (4) of the 2015 MSCWMO Watershed Management Plan that prohibits the infiltration of the entire required volume.

☒ MIDS calculator submission removes 75% of the annual total phosphorous.

Infiltration/Filtration Design Standards

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a. Areas where vehicle fueling and maintenance occur.
b. Areas with less than three (3) feet of separation distance from the bottom of the infiltration system to the elevation of the seasonally saturated soils or the top of bedrock.
c. Areas where industrial facilities are not authorized to infiltrate industrial stormwater under an National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Industrial Stormwater Permit issued by the MPCA.
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e. Areas of Hydrologic Soil Group D (clay) soils
f. Areas within 1,000 feet up-gradient, or 100 feet down-gradient of active karst features unless allowed by a local unit of government with a current MS4 permit.

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b. Soil borings extend a minimum of five feet below the bottom of the infiltration practice. If fractured bedrock is suspected, the soil boring goes to a depth of at least ten feet below the proposed bottom of the volume control facility.

c. A minimum of three feet of separation to the seasonal water table and/or bedrock.

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NA Filtration system designed to remove at least 80% of total suspended solids

NA Filtration system Iron Enhanced Sand Filter is sized to bind soluble phosphorous removal for 30 year functional life of the system using the published value of 17lbs.phosphorous removal per 20 yards of 5% by weight iron filings to 95% sand.

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455 HAYWARD AVENUE OAKDALE, MINNESTOA 55128
Phone 651.330.8220 x22 fax 651.330.7747 www.mscwmo.org

December 14, 2017

Eric Johnson, Administrator
City of Oak Park Heights
PO Box 2007
Oak Park Heights, MN 55082

RE: SP8214-161 MN36 St. Croix Landscaping Plan

Dear Mr. Johnson,

The Middle St. Croix Watershed Management Organization (MSCWMO) received revised submittals on December 5, 2017, for the proposed MN36 St. Croix Landscaping Plan, located within MSCWMO boundaries in the City of Oak Park Heights. The proposed project qualifies for full review under the MSCWMO 2015 Watershed Management Plan (WMP).

The project provided sufficient information to determine compliance with applicable Erosion and Sediment Control Performance Standards contained within Section 7.0 of the 2015 MSCWMO WMP.

MSCWMO review process information can be downloaded from www.mscwmo.org. Feel free to contact me at 651-330-8220 x22 or misensee@mnwcd.org if you have any questions regarding these comments.

Sincerely,

Mikael Isensee
Administrator
Middle St. Croix Watershed Management Organization

Administrator's Report- December 2017

Administration

- Lakeland Local Surface Water Management Plan Review and Comments
- Adopt A Raingarden Coordination
- Liability Insurance Renewal

Project Reviews

- Ecumen Senior Housing Revisions Review, Stillwater
- 2909 Itasca Avenue Preapplication Meeting, St. Mary's Point
- Myrtle and 3rd Street Redevelopment Preliminary Comments, Stillwater

Conservation Project Technical Assistance and Cost Share

Managing Existing Projects

~~**St. Croix Watershed Improvement Grant**~~

~~**Description:** $40,000 grant from St. Croix River Association with a goal to monitor phosphorous discharge to target the location for future phosphorous reduction best management practices (2015-2017).~~
Activities This Month: COMPLETED!!

Lake St. Croix Direct Discharge Grant

Description: $142,000 grant for stormwater quality improvements in Oak Park Heights, Stillwater and Bayport (2014-2018).
Activities This Month: No activities this month.

Lily Lake Phase III Grant

Description: $109,000 for stormwater quality improvements for areas discharging to Lily Lake (2014-2017)
Activities This Month: Grant extension. Contractor communications.

~~**South Beach Flood Damage Repair Grant**~~

~~**Description:** $40,000 grant to incorporate native vegetation into a soil filled rip-rap shoreline stabilization project on Lake St. Croix in St. Croix Beach (2014-2016)~~
Activities This Month: COMPLETED!

South Lake St. Croix Direct Discharge Subwatershed Analysis Grant

Description: $10,000 grant to investigate and prioritize water quality improvement projects in the South MSCWMO (2016).
Activities This Month: No action.

Lake St. Croix Direct Discharge Phase II

Description: $151,000 grant for stormwater quality improvements in Oak Park Heights, Stillwater and Bayport (2015-2018).
Activities This Month: No action.

Lily Lake Final – 45

Description: $65,000 grant to identify and partially design stormwater practices to reduce phosphorous discharges to Lily Lake by at least 45 lbs. per year.
Activities This Month: EOR draft designs of two BMPs.

Perro Creek Water Quality Improvements Phase I

Description: $63,000 grant to design and install stormwater quality practices to reduce nutrients and bacteria discharging directly into Perro Creek and then to Lake St. Croix.
Activities This Month: Preliminary design concepts and communications with City of Bayport and Engineering.

Meetings

- American Society of Civil Engineers Operations and Maintenance Conference
- Washington County Water Consortium
- Washington County Budget Presentation
- Green Corps Weekly Check-in Meetings
- Perro Creek Shoreline Restoration Meeting with the Bayport Girl Scouts