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, August 9, 2018
6:00PM

1. Call to Order – 6:00PM

2. Approval of Minutes
   a. Draft minutes June 14 , 2018 ***pages 1-5***

3. Treasurer's Report
   a. Report of savings account, assets for August 9, 2018
   b. Approve payment of bills for August 9, 2018
   c. Budget Tracker Review

4. Public Comments

5. Old Business
   a. None

6. New Business
   a. Draft 2019 Budget *page 6*
   b. 1W1P Priority Concerns and Additional Goals ***pages 7 and 8***
   c. FY19 Clean Water Fund Grant Applications ***page 9***
7. Grants
   a. Lily Final 45 Update and Payment Approval ***pages 10 and 11***
   b. 2018 Year End Cash Flow *page 12*

8. Grant and Cost Share Applications
   a. North Hill Community Garden Reimbursement, Stillwater ***page 13***
   b. Arneson Native Slope Stabilization Cost Share Reimbursement, Lakeland ***page 14***
   c. Peoples Church Native Prairie Restoration Grant Application, Bayport ***page 15***
   d. Stillwater Foundation Adopt A Raingarden Final Grant Report, Stillwater ***pages 16 to 18***
   e. Amy's Raingarden Grant Application, Bayport ***page 19***

9. Plan Reviews/Submittals
   a. Johnson Residence, Lakeland ***pages 20-24***
   b. Orchards at Cahanes, Baytown ***pages 25-37***
   c. Palmer Station, Oak Park Heights ***pages 38-48***
   d. 2nd Street Commercial, Lakeland Shores

10. Administrator's Report *pages* ***49-50***

11. Adjourn

Regular Meeting of the Middle St. Croix Watershed Management Organization
Bayport Public Library, Bayport, MN
Thursday, June 14, 2018
6:00PM

Present: Brian Zeller, Lakeland Shores; Mike Runk, Oak Park Heights; Nancy Karras-Anderson, St. Mary's Point; Tom McCarthy, Lake St. Croix Beach; Patrick McGann, Bayport; Doug Menikheim, Stillwater; John Fellegy, Baytown Township; Lakeland; Cameron Blake, WCD; Administrator Mike Isensee.

Call to Order
The meeting was called to order at 6:00PM by Brian Zeller.

Approval of Minutes
A motion to approve the May 10th, 2018 minutes was made by Brian Zeller, seconded by Nancy Karras-Anderson. Motion carried.

Treasurer's Report
Report of savings account, assets for June 14, 2018
Approve payment of bills for June 1, 2018
Received City of Lakeland 2016 second half payment of $6,601.99

The treasurer's report was presented by Administrator Isensee. The remaining checking account balance is $298,133.36. First State Bank CDs are valued at $32,094.13. The ending balance in the RBC savings account is $48,757.03.

Bills to be approved this month are: Carmen Simonet Design: $85.00; Chuck Meyer: $250.00; Emmons & Oliver Resources: $2,791.70; Wenck Associates: $2,187.30; Washington Conservation District (Administration) $2,500.00; Washington Conservation District (Technical Services) $8,234.79; Washington Conservation District: $4,795.75; Total: $20,844.54.

Brian Zeller requested a budget tracker review. Administrator Isensee reported administrative costs were about 50% which was a little over and technical assistance costs were at 64%.

A motion to approve the items in the treasurer's report was made by Brian Zeller, seconded by Mike Runk. Motion passed.

County/Watershed Joint Meeting Summary
Administrator Isensee presented a summary of the County Watershed Joint meeting. The three major themes he identified were presented by County Commissioners were transparency, communication, and collaboration. The direct requests were: to meet with the county commissioner once annually, to report progress to cities once a month, to record meetings, to copy county commissioners on board packets, and to keep good relationships with city staff. Patrick McGann agreed this was a good

summary. Brian Zeller discussed feedback from commissioners included a concern about the scope and mission creep of the watersheds which is why they are asking for more transparency and open communication about agendas. He believes the MSCWMO will not be impacted by this as much due to not having taxing authority and therefore being limited in mission creep. Doug Menikheim questioned if the Washington Conservation District is also having mission creep and discussion occurred about this and other watershed districts between Brian Zeller and John Fellegy. Administrator Isensee stated that the WCD has a wide breadth of expertise and the watershed districts use WCD technical staff to implement watershed programs and priorities. Brian Zeller stated that Administrator Isensee is contracted halftime through the WCD.

Administrator Isensee presented a thank you letter from the City of Stillwater to the MSCWMO for the letter of support for the City's legislative request to fund the Lake St. Croix Stabilization and Integrated Trail project. Doug Menikheim agreed this funding was a big deal and that the city had hired a public lobbyist to help Stillwater succeed in getting this funding.

Washington Conservation District Monitoring Program Update
Administrator Isensee reported that the MSCWMO contracts with the WCD in order to do water quality monitoring on Lily Lake, Lake McKusick, and Perro Creek. He explained that there is usually one annual report but the WCD is starting to send updates more often and will be sending updates for April and May. John Fellegy asked Administrator Isensee if he had seen information about water quality monitoring done by private citizens. Administrator Isensee explained that in the past the MSCWMO had used the CAMP program run through the Met Council but due to data inconsistency the board had elected to utilize the WCD to conduct the monitoring on high priority water bodies (Lake McKusick, Lily Lake, Perro Creek).

Perro Creek Native Shoreline Restoration Cost Share Application
Administrator Isensee reported that the Bayport Girl Scouts Troop 56631 of Bayport are working in partnership with the City of Bayport and the MSCWMO to restore native buffers on both sides of Perro Creek for 100 linear feet along the Southwest side of Perro Park in Bayport. Technical staff recommend allocating $1,000 from the cost share budget for the purchase of materials, site preparation (herbicide, hard raking and erosion control blanket installation), native planting event coordination, post planting watering and weed control.

A motion to approve expenditures from the MSCWMO Cost Share budget not to exceed $1,000 for the Perro Creek Native Shoreline Restoration was made by John Fellegy, seconded by Patrick McGann. Motion passed.

Grace Fix Raingarden Application
Grace Fix is requesting a MSCWMO Water Quality grant to install a 200 square foot raingarden on the west side of her property located along Lake St. Croix at 1975 Quant Avenue in West Lakeland Township. Staff recommends approval. A motion to approve reimbursement of expenses not to exceed $500.00 for the Fix Raingarden was made by Brian Zeller, seconded by Nancy Karras-Anderson. Motion passed.

Lakeland Native Slope Stabilization Application
Sally Arneson has completed the year-long Master Water Steward training and is now working on her Capstone Project. The project is working in partnership with the City of Lakeland to stabilize an eroding slope located on the west side of Quixote Avenue, upgradient of the iron enhanced sand filter. Currently, the toe of the slope is eroding as water flows down along the pavement and the slope. The capstone project proposes to install native plants and erosion control blanket where needed to more effectively stabilize the 3,500 square foot slope. The City and the Ms. Arneson are requesting the $500 water quality improvement grant. Total project costs are estimated at $1,500, for the purchase of erosion control blanket and 1,300 native plant plugs. Staff recommends approval of a $500.00 water quality improvement grant.

Brian Zeller asked if this was city property. Administrator Isensee said it was but that private septic homeowners near the project have been collaboration with the plan with the city. Brian Zeller expressed concern about residents interfering historically with raingardens nearby. Administrator Isensee said he had not experienced issues while working with these homeowners in the last 3-4 years and is not concerned about working with them on this project. A motion to approve reimbursement of expenses not to exceed $500.00 for the Lakeland Native Slope Stabilization Project was made by Tom McCarthy, seconded by Nancy Karras-Anderson. Motion passed.

Meyers Cost Share Reimbursement
Motion to reimburse $250 for the 8,000 square foot turf to prairie restoration at 3491 Pete Miller Avenue, Baytown Township was made by Brian Zeller, seconded by John Fellegy. Motion passes.

Stillwater 2018 Streets Improvements, Stillwater
Administrator Isensee reviewed the Erosion and Sediment Control plans for the mill and overlay work as part of the Stillwater 2018 Streets Improvement project and recommends approval.

A motion to approve this was made by Brian Zeller, seconded by Doug Menikheim. Motion passes.

CSAH 23 (3rd Street) Reconstruction, Stillwater
The Middle St. Croix Watershed Management Organization (MSCWMO) received required submittal items on May 25, 2018 for the proposed CSAH 23 (3rd Street) Reconstruction, Stillwater located within MSCWMO boundaries and in the city of Stillwater.

Due to steep grades, the fully developed downtown area including several historic properties, and presence of shallow bedrock in some areas, the project qualifies for flexible treatment option 3. Washington County Public Works, Transportation Division, proposes to install three underground hydrodynamic devices that achieve 18.14% reduction in particulate phosphorous and provide cash in lieu of treatment for the remaining 1.9 lbs. per year of total phosphorous to be treated. The total cash in lieu of treatment amount is $118,720.00, to be utilized to implement water quality practices within the Stillwater portion of the Lake St. Croix Direct Discharge Subwatershed.

Administrator Isensee reported that the retrofits will consist of three hydrodynamic separators that will reduce TP and TSS by 20% at key intersections on 3rd street. Brian Zeller asked what this would

look like and Administrator Isensee replied it would look like a manhole sump and works by dissipating energy in order to drop out sediment with a baffle system so it doesn't recirculate. Brian Zeller asked for clarification on where the cash in lieu of treatment could be spent. Administrator Isensee explained that this would fund other retrofits in the Lake St. Croix Direct Discharge Watershed that are currently being design as part of the Lake St. Croix Direct Discharge Retrofit effort. Brian Zeller asked when these treatments could be installed, and John Fellegy asked if a filter could be added to improve performance. Administrator Isensee explained it was a cost benefit and that installing them during the street construction saves money. Brian Zeller expressed concern that this could set a precedent for contractors to pay for in lieu of treatment rather than to treat stormwater. Administrator Isensee explained that the County is doing the maximum treatment they can in an area with multiple restrictions. The cash in lieu treatment was the result of the "Flexible Treatment" alternatives process in the MSCWMO performance standards.

Brian Zeller asked if there was resolution with an erosion issue with an office renovation on 3rd street. Discussion occurred regarding the potential future redevelopment of that area.

Tom McCarthy asked about the maintenance of the hydrodynamic separators and Administrator Isensee explained the County is obligated to maintain them, which entails removing accumulated sediment with a vacuum truck.

A motion to approve the CSAH 23 (3rd Street) Reconstruction Review results and accept $118,720 from Washington County in lieu of treatment was made by Brian Zeller, seconded by Tom McCarthy. Motion passes.

1076 Quixote Shoreline Stabilization
The MSCWMO recommends approval of the Sandra Boe and Scott Johnson Shoreline Stabilization at 1067 Quixote Ave N with one condition: The 500 cubic foot infiltration basin that was approved in 2016 is installed per plan.

A motion to approve the 1067 Quixote Shoreline Stabilization project was made by John Fellegy, second by Nancy Karras-Anderson. Motion passed.

SCRA Grant
Administrator Isensee reported that the MSCWMO received notice of a $30,000 grant award for water quality improvement projects in the lower St Croix.

A motion to accept this grant was made by John Fellegy, seconded by Tom McCarthy. Motion passes.

Administrator's Report
Administrator Isensee reported that there were no specific highlights. 8 different funding sources are currently being utilized and many projects are being done. John Fellegy asked about the Orchards at Cahanas Review and Administrative Isensee said this would be on the August meeting agenda but there were not too many water quality concerns after 3 pre-application meetings. Joh Fellegy

expressed concern that managing stormwater could be difficult due the sites topography and Administrator Isensee agreed it was a complicated but the prelimary design and modeling was going well.

Doug Menikheim said the next One Watershed One Plan meeting is on August 27th.

Brian Zeller moved to adjourn the meeting and John Fellegy seconded. Motion passed at 6:54 p.m.

MSCWMO 2019 Draft Budget

	2018 MSCWMO Budget	2019 MSCWMO Budget	% CHANGE
ADMINISTRATION			
Administration - General	$ 29,200.00	$ 29,200.00	0.00%
Accounting	$ 1,500.00	$ 1,500.00	0.00%
Legal Fees - General	$ 1,000.00	$ 1,000.00	0.00%
Audit	$ 1,900.00	$ 2,100.00	10.53%
Insurance & Bonds	$ 3,000.00	$ 3,000.00	0.00%
Office supplies/equipment/postage	$ 750.00	$ 750.00	0.00%
Minutes/Clerical	$ 1,100.00	$ 1,100.00	0.00%
Copying/printing/reproduction/minutes	$ 750.00	$ 750.00	0.00%
Admin Total	**$ 39,200.00**	**$ 39,400.00**	**0.51%**
PROJECT FUNDS			
Project Contingency	$ 2,000.00	$ 2,000.00	0.00%
Engineering - Project	$ 5,400.00	$ 5,400.00	0.00%
Development Plan Reviews	$ 4,800.00	$ 4,800.00	0.00%
Erosion Monitoring Program	$ 2,250.00	$ 2,250.00	0.00%
BMP Cost-Share (general)	$ 15,500.00	$ 15,500.00	0.00%
BMP TA & Admin	$ 25,521.00	$ 25,521.00	0.00%
Community TA	$ 3,000.00	$ 3,000.00	0.00%
Water Resource Educator	$ 6,000.00	$ 6,300.00	5.00%
Website	$ 750.00	$ 750.00	0.00%
Inspection and Tracking Database	$ 900.00	$ 900.00	0.00%
Project Total	**$ 66,121.00**	**$ 66,421.00**	**0.454%**
WATER MONITORING			
Water Monitoring	$ 20,749.00	$ 21,293.00	2.62%
Water Monitoring Total	**$ 20,749.00**	**$ 21,293.00**	**2.622%**
LONG TERM PROJECT SAVINGS			
Water Monitoring - Set aside for equipment rep	$ 1,000.00	$ 1,000.00	0.00%
WMP Update	$ 6,000.00	$ 6,000.00	0.00%
Savings Total	**$ 7,000.00**	**$ 7,000.00**	**0.00%**
MSCWMO Member Contribution Budget	**$ 133,070.00**	**$ 134,114.00**	**0.78%**

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MEMORANDUM

TO: Middle St. Croix WMO Board of Managers
FROM: Mike Isensee, Administrator
DATE: April 12, 2018

RE: **5b) Lower St. Croix One Watershed One Plan (1W1P) Goals**

The Lower St. Croix Watershed planning team is requesting goals from the MSCWMO Board of Managers. Our current goals from our plan (listed below) are already included in the planning process. Please consider additional goals.

Additional goals can be broad over-arching concepts similar to those listed below or more specific goals based on our communities concerns for the health of long-term health of Lake St. Croix.

MSCWMO 2015-2025 Plan Goals

Water Quality
Protect and improve water quality in the Middle St. Croix watershed through the treatment and control of stormwater runoff.

Water Quantity
Minimize existing and future potential damages to property, public safety, and water resources due to flood events.

Erosion and Sediment Control
Prevent erosion and subsequent sedimentation from surface runoff within the watershed on construction sites; agricultural lands; and along stream banks, lakeshores, and roadsides.

Monitoring
Collect monitoring data needed to understand the quality of major water bodies, identify problems and determine appropriate practices and management practices.

Wetlands

1W1P Vision: Discovering what we can do better together.

1W1P Objective: Well-coordinated local plans to strengthen partnerships, focus on shared priorities, and identify gaps.

1W1P Outcome: A roadmap for working collaboratively while implementing locally.

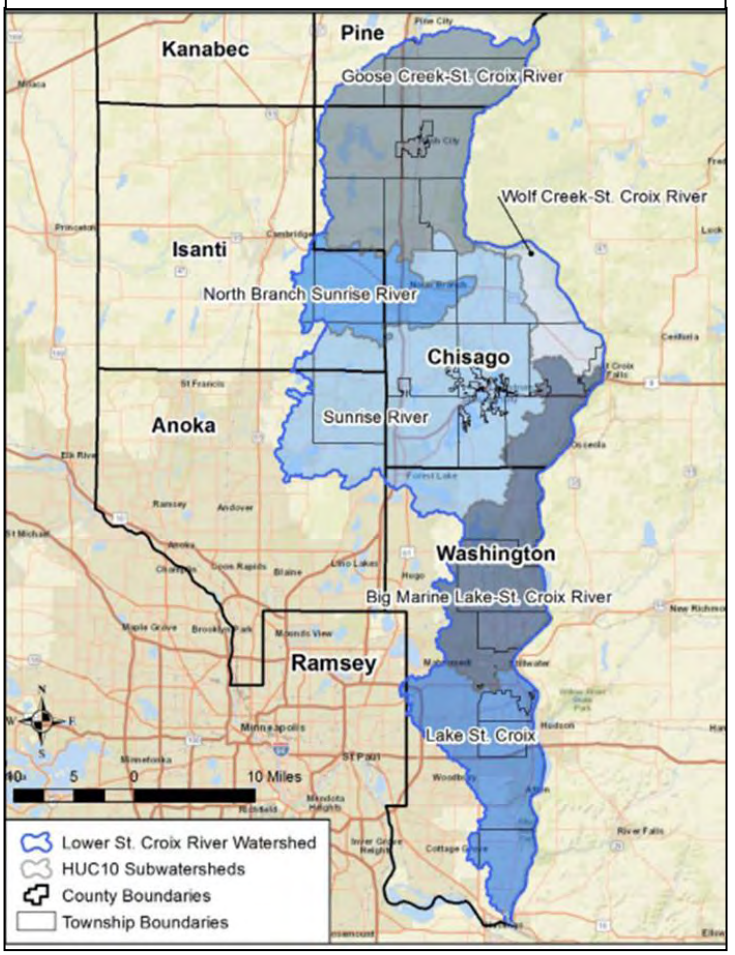

Figure 1 Lower St. Croix One Watershed One Plan Planning Boundaries

Manage the quantity and quality of wetlands, in conformance with the Minnesota Wetland Conservation Act (WCA) and Water Quality Standards Rules (Minnesota Rules 8420 and 7050).

Groundwater
Collaborate to protect the quantity and quality of groundwater resources.
Habitat and Recreation
Maintain or improve habitats by implementing protection or restoration measures that consider ecological functions as well as recreation, human health, safety, and welfare.

Education
Increase the knowledge and understanding of watershed residents, government officials and staff, consultants and developers to encourage actions which improve water quality, water quantity, wetlands and natural resource protection.

Administration
MSCWMO is an efficient, well organized, and proactive organization that collaboratively prioritizes and manages water resources with member communities and other government jurisdictions.

Requested MSCWMO Action
Provide any additional goals to the 1W1P Planning Team.

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MEMORANDUM

TO: Middle St. Croix WMO Board of Managers
FROM: Mike Isensee, Administrator
DATE: July 12, 2017

RE: 6 C) 2019-2021 CLEAN WATER FUND GRANT APPLICATION

Lake St. Croix Direct South Discharge
Staff recommends an application for funding prioritized and targeted implementation of stormwater practices identified in the Lake St. Croix Direct Discharge Subwatershed Analysis. This $120,000 grant application is identified in the MSCWMO 2015-2025 Watershed Management Plan. If successful, the MSCWMO will work with communities and landowners south of Bayport on the design, engineering and installation projects identified in the 2017 subwatershed analysis. The grant proposes to install of up to seven urban stormwater retrofit projects to reduce phosphorous directly discharging to Lake St. Croix by at least 12 pounds. The grant application will require a minimum match of $30,000.

Lily Final 45 Implementation Grant
Staff recommends an application for funding to implement the findings of the draft Lily Lake Delisting Report. The $1,500,000 grant application is identified in the 2015-2025 MSCWMO Watershed Management Plan. If successful the MSCWMO will work with the City of Stillwater to complete design in 2019 and install BMPs in 2020. The grant proposed to install two large BMPs addressing 50% of the annual stormwater pollution flowing into Lily Lake in 2020, in addition, alum treatments will be completed in 2020 and 2021. All studies conducted from 2007-2018 indicate this work will complete the work necessary in the watershed and result in the delisting of Lily Lake in 2024. The grant application will require a minimum match of $375,000.

Grant applications are due August 31st.

MSCWMO 2019-2021 Clean Water Fund Grant Application

Motion by Board Member 1, seconded by Board Member 2, to approve the Lake St. Croix Direct South and the Lily Final 45 Implementation Grant applications.

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MEMORANDUM

TO: Middle St. Croix WMO Board of Managers
FROM: Mike Isensee, Administrator
DATE: August 9, 2018

RE: **7a) Lily Final 45 Final Report Memo**

The final report summarizes the findings of the following documents:

1999-2017 Lily Lake Water Monitoring Results
2007 Lily Lake Management Plan
2017 MPCA Impaired Waters Delisting Guidance Document
2015-2016 MSCWMO Outfall Monitoring Final Report
2017 Lily Lake Internal Load Analysis
2017-2018 Engineering Feasibility Report
2018 Lily Lake Subwatershed Analysis Update
2018 Herbicide and Algaecide Treatment White Paper

The final report include 60% design for the final stormwater management practices to complete the remaining 31% (45 lbs.) and in-lake treatment required to remove Lily Lake from the state of Minnesota 303(d) impaired waters list.

Staff is requesting approval to reimburse soil boring expenses from the MSCWMO Cost Share Budget of $5,960.00, which will completed the required match for the $58,000 grant awarded in May, 2017 and to be closed in October, 2018.

Example Board Motion
Approve payment of $5,960.00 for the Lily Lake Final 45 soil borings from the MSCWMO 2018 Cost Share Budget.

Invoice

Emmons & Olivier Resources, Inc.
7030 6th Street N
Oakdale, MN 55128-6146
Phone 651.770.8448
Fax 651.770.2552
www.eorinc.com

Invoice Total $9,457.00

Middle St. Croix WMO
C/O WCD
455 Hayward Avenue North
Oakdale, MN 55128

April 12, 2018
Invoice No: 00405-0009 - 8

Job 00405-0009 Lily Lake Phase 2

Summary of Work Performed:
*Soil boring expense - AET.
*Hydrologic/Hydraulic modeling of project locations.

Professional Services from March 1, 2018 to March 31, 2018

Professional Personnel

	Hours	Rate	Amount	
Professional 3	.75	143.00	107.25	
Professional 2	28.25	118.00	3,333.50	
Technician 3	.25	99.00	24.75	
Support Staff	.50	63.00	31.50	
Totals	29.75		3,497.00	
Total Labor				**3,497.00**

Reimbursable Expenses

Drilling & Soils Analysis - Reimbursable			5,960.00	
Total Reimbursables			**5,960.00**	**5,960.00**
		Total this Invoice		**$9,457.00**

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MEMORANDUM

TO: Middle St. Croix WMO Board of Managers
FROM: Mike Isensee, Administrator
DATE: August 9, 2018

RE: **7b) 2018 Cash Flow**

Clean Water Fund grants provide 50% of funding at the time of award, then after 50% is expended and reported distributes 40%, and finally at the completion of the grant, final reporting and audit, distributes the final 10%. In 2018 the MSCWMO will be completing three grants:

Lily Phase III $109,000
Lake St. Croix Direct Phase I $151,000
Lily Final 45 Feasibility $58,000

All three of these grants will go from 40% expenditure to 100% expenditure in the 3rd and 4th quarter of 2018. Additionally, the MSCWMO is conducting work on three additional grants. Based on the June account balance of $298,000 and remaining community contributions for 2018, the accounts could be depleted to less than $10,000 prior to reimbursement from BWSR.

Staff recommends diverting the MSCWMO CDs ($32,094.13) which are up for renewal, into the checking account until January 2019. By 2019, the MSCWMO will have received reimbursement from BWSR totaling approximately $150,000.

Example Board Motion
Motion Board Member 1, second Board Member two to deposit the MSCWMO CDs totaling $32,094.13 into the MSCWMO checking account to cover grant expenditures through the 4th quarter of 2018.

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MEMORANDUM

TO: Middle St. Croix WMO Board of Managers
FROM: Mike Isensee, Administrator
DATE: August 9, 2018

RE: 7d) North Hill Community Garden Grant Reimbursement Request

The North Hill Community Garden was approved for cost share funding not to exceed $250.00 for a 910 square foot native garden installation on their property at 1004 Martha Street N. in Stillwater. Technical staff have reviewed the project and recommend approval.

Example Motion:
Motion by Board Member 1, seconded by Board Member 2 to approve reimbursement of $250 to Leah Smith for the North Hill Community Garden Native Garden.

North Hill Community Garden Project Plan and Cost Estimate Worksheet

Job Description

Landscape west hill of NHCG with pollinator-friendly native plants to provide habitat, reduce erosion, and control invasive species growing on hill

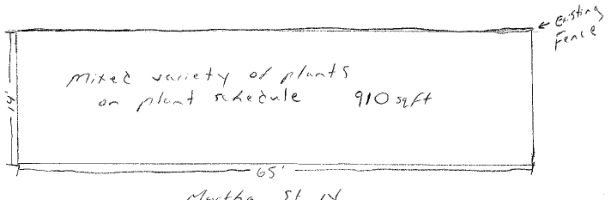
Cost Estimate

1 plant plug per square foot	= 910 plant plugs from Landscape Alternatives and/or Prairie Restorations = $5.75-$7.00/6-pack of plant plugs = 910/6 = 151.67 6-packs = 152 6-packs x 5.75 (or 7.00) = $874 (or $1,064)
Mulch for mulch berm	Free from City of Stillwater
Labor	Free volunteer hours

Project Cost: $874 - $1,064
MSCWMO Cost Share: $250

Plant Schedule

Qty	Botanical Name	Common Name	Size	Spacing
114	*Schizachyrium scoparium*	Little Bluestem Grass	Plug	1/square foot
114	*Monadra fistulosa*	Monarda	Plug	1/square foot
114	*Monarda punctate*	Dotted Mint	Plug	1/square foot
114	*Heliopsis helianthoides*	Oxeye Daisy	Plug	1/square foot
114	*Solidago rigida*	Stiff Goldenrod	Plug	1/square foot
114	*Agastache foeniculum*	Anise Hyssop	Plug	1/square foot
114	*Asclepias*	Milkweed	Plug	1/square foot
114	*Ratibida pinnata*	Gray-headed Coneflower	Plug	1/square foot



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MEMORANDUM

TO: Middle St. Croix WMO Board of Managers
FROM: Mike Isensee, Administrator
DATE: August 9, 2018

RE: **8b) Lakeland Native Slope Stabilization**

Sally Arneson has completed the year-long Master Water Steward training and has successfully planned and installed her Capstone Project.

The project worked in partnership with the City of Lakeland to stabilize an eroding slope located on the west side of Quixote Avenue, upgradient of the iron enhanced sand filter.

The capstone project installed native plants where needed to more effectively stabilize the 1,500 square foot slope. Staff have inspected the project and reviewed receipts. The project was installed per technical guidance from staff. and all costs submitted are reimbursable by the grant approved by the board at the June 14, 2018 regular meeting.

Total project costs were $922.00, for the purchase of 700 native plant plugs. All labor was provided by volunteers.

Staff recommend reimbursement of a $466.00 based on receipts received.

Example Motion
Motion Board Manager 1, second Board Manager 2 to approve reimbursement of expenses of $466.00 for the Lakeland Native Slope Stabilization Project.

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MEMORANDUM

TO: Middle St. Croix WMO Board of Managers
FROM: Mike Isensee, Administrator
DATE: August 9, 2018

RE: 8c) Peoples Church Native Prairie Restoration

The Peoples Church of Bayport are requesting cost share for the restoration of 2 acres of native prairie located at on the South side of 5th Avenue, across from the Bayport Fire Station. The total cost for the installation materials (the majority of the project is being installed and maintained with volunteer labor) is $5,642.00. The Washington Conservation District is providing cost share of $3,900.00. Peoples Church is requesting cost share of the remaining balance of material costs of $1,724.00.

Itemized list of costs for Peoples Park Native Plantings Project

Costs incurred to date

Land preparation	$2000
Tilling	$450
Spay	$149
Permits	$25
Total	$2624
In kind hours to date	73

Anticipated future costs

Tilling	$450
Spray	$50
Seed	$2000
seeds are also currently being collected and saved from	
Mowing First year	$500
Total	$3000
Total Project Estimated	$5624
Total Cash from WCD	$3900
Estimate Need	$1724
Requested Cost Share	$1724

Peoples Church Native Prairie Restoration Grant Application, Bayport

Motion by Board Member 1, seconded by Board Member 2, to approve 31% cost share not to exceed $1,724.00 for the 2 acre prairie restoration located South of 5th Avenue N and East of Barkers Alps Park in Bayport, MN.

For Foundation use only:
Grant Number: _____
Date Report Received: _____
Reviewed: _____

STILLWATER AREA COMMUNITY FOUNDATION

BAYPORT
BAYTOWN TOWNSHIP
GRANT
LAKE ELMO
MARINE ON ST. CROIX
MAY TOWNSHIP
OAK PARK HEIGHTS
STILLWATER
STILLWATER TOWNSHIP
WEST LAKELAND TOWNSHIP

Stillwater Area Community Foundation
Final Report Form

Cover Sheet

The experience and knowledge you gained from completing your project can be helpful for others embarking on similar endeavors. Therefore, we ask you to provide a brief assessment of your project's strengths and challenges through this final report. This report will also help the foundation in its future grant-making.

Please complete this report and return it to the Stillwater Area Community Foundation. Further requests for funding will not be considered until this final report is completed.

You may direct any other questions and/or send your completed report to:

Stillwater Area Community Foundation
c/o St. Croix Valley Foundation
516 Second Street, Suite 214
Hudson, WI 54016

Phone: 715-386-9490
Fax: 715-386-1250
Email: grants@scvfoundation.org

Organization Information:

Name of School or Organization: Middle St. Croix Watershed Management Organization

Contact Person: Mike Isensee

Project Title: Stillwater Adopt A Raingarden Program

Address: 455 Hayward Avenue, Oakdale MN 55128

Telephone (651) 330-8220 x22 Email misensee@mnwcd.org

Date Grant Awarded: February 2018 **Grant Amount: $4,200.00**

Final Report and Evaluation

Please complete the following questions.

- **Briefly describe your project giving an overall summary of what you proposed to complete by the end of the project.**
  The MSCWMO, East Metro Water Resource Education Program, Lily Lake Association, and Sustainable Stillwater created an Adopt-A-Raingarden Program that makes it possible for community volunteers to help care for 108 raingadens in the Ciyt of Stillwater.

  During the grant timeframe the colloarative of local units of government and local non-profits created program logos, raingaden clean up event invitations, flyers, and door hanger, a website, signs, volunteer liability waiver forms, printed safety vests and compostable bags. Collectively they hosted a raingarden maintenance

  training, and two volunteer community raingarden clean up events that engauged 59 citizens in maintining raingardens, a critical piece of infrastructure for water quality.

  To date, the program has facilited the clean up of nearly 80 raingardens through two community events and has help volunteers adopt and continue to maintain 40 raingardens.

Figure 1 Website Created as part of the grant: http://www.mnwcd.org/adoptaraingarden/

- **Did you make any modifications to your original proposed project? If yes, please explain the change and your reasons.**
  The orignal plan was to host the community raingarden clean up on the weekend of earthday, but snow was still on the ground, so it was postponed by two weeks and held in early May. We all believe this greatly impacted participation.

Figure 2 Facebook Post of the Adopt A Raingarden Volunteers at the Lily Lake Raingarden Spring Cleaning.

- **How many individuals participated in your project? In what ways do you think this project had an impact on participants?**
  April 27, 2018 Raingaden maintentannce training: 9 volunteer participants, 1 MSCWMO staff, 1 Washington Conservation Distirct Staff, 1 Green Corps Member.

  May 5, 2018 Raingarden clean up event: 38 volunteer participants, 1 MSCWMO staff, 1 Washington Conservation Distirct Staff, 1 Green Corps Member, 1 East Metro Water Resources Education Staff.

  June 7, 2018 Raingarden weeding event: 12 volunteer participants, 1 Washington Conservation District staff, 1 East Metro Water Resource Eduction Staff.

  During the recruitment, active maintenance, and follow up thank yous to all of the volunteers we discussed how these raingardens are improving water quality in Stillwater and on Lake St. Croix. The events, while hard work, were also fun and enauging.

Figure 3 Spring Raingarden Cleaning!!

- **Did this project help your organization grow its program? If yes, how?**
  This was the launch of the Adopt A Raingarden program and it established all of the key tools we need to continue this program and these events into the future. The funding was critical to the launch of this long-term effort that had been envisioned for years.

- **Please give a specific example or story of how your program benefited participants**.
  During the process of reaching out to landowners with raingardens on thie property, we discovered five instances that due to age or health the landowner was physically unable to maintain the perennial plantings along the boulevard. Because of the Adopt A Raingarden Program we connected with high engery individuals and service groups, trained them how to maintain raingardens, and now they are helping those property owners who can no longer maintain the gardens themselves.

- **What did you learn through this project? If you were to do it over again, what would you do differently?**
  Stillwater has tremendous community social capacity. This project has enabled all involved parties to expand our network of connections and collectively help meet a community need. Besides some minor logistical changes during the clean up event, we did not identify any componenets of the project we would do diffierently.

Figure 4 Adopt A Raingarden Signs.

Figure 5 New inlets to replace difficult to maintain rock inlets installed by the City.

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: Mike Isensee, Administrator
DATE: August 9, 2018

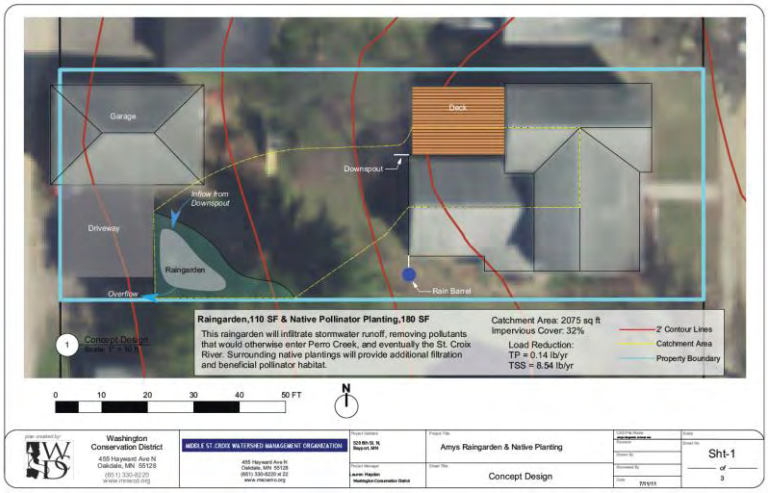
RE: 8e) Amy's Raingarden Grant Application

April Amy is requesting a $500 water quality improvement grant to install a raingarden at her residence located at 528 6th Street North in Bayport. The residential raingarden is within the Perro Creek watershed and will reduce annual phosphorus discharge by 0.14 pounds per year.

Total project costs are estimated at $2,700.

Staff recommend approval of a $500.00 water quality improvement grant.

Example Motion
Motion Board Manager 1, second Board Manager 2 to approve the Amy's Raingarden Water Quality Grant not to exceed $500.00.



Job Description	Cost Summary		
Raingarden 110 SF & native Pollinator planting, 180 SF. Project will infiltrate stormwater runoff, removing pollutants that would otherwise enter Perro Creek. Surrounding native plantings will provide additional filtration and beneficial pollinator habitat	Project Cost =	$ 2,721.55	Phosphorus Reduction (lbs/yr)
	Cost Share =	$ 500.00	TP= 0.14

Job Estimate

Erosion Control Materials	Qty	Unit	Unit Cost	Amount
Edging (Bullet Paver Edger- Interloc 3.375"x11.75")	40	each	$ 1.17	$ 46.64
			Erosion Control Subtotal	$ 46.64
Compost, Mulch, and Rock				
Double-Shredded Hardwood Mulch (3" depth)	3.0	cy	$ 32.51	$ 97.52
Compost	1.0	cy	$ 42.74	$ 42.74
			Compost, Mulch, and Rock Subtotal	$ 140.25
Drainage Accessories				
Catch Basin (NDS) - 12"x12"	1	each	$ 50.42	$ 50.42
Grate - Atrium Grate, 4"	1	each	$ 4.83	$ 4.83
Elbow - 45 Degree 4" - HDPE	1	each	$ 5.49	$ 5.49
Draintile - 4" HDPE Perforated, w/sock - 100 lf	1	each	$ 63.02	$ 63.02
			Drainage Subtotal	$ 123.76
Plants, Shrubs, and Trees				
Native plug	130	each	$ 1.00	$ 130.00
Shrub #1	2	each	$ 20.00	$ 40.00
			Plants Subtotal	$ 170.00
Excavation and Grading				
Turf Kill and seed bed prep	1	job	$ 750.00	$ 750.00
			Excavation and Grading Subtotal	$ 750.00
Misc				
Soil Delivery	1	job	$ 100.00	$ 100.00
Rock Delivery	1	job	$ 100.00	$ 100.00
Mulch Delivery (14cy/load)	1	job	$ 100.00	$ 100.00
Plant Delivery	1	job	$ 100.00	$ 100.00
			Misc Subtotal	$ 400.00

ADDITIONAL NOTES	PROJECT SUBTOTALS	
	Materials	$ 310.65
	Plants	$ 170.00
	Excavation/Grading	$ 750.00
	Misc	$ 400.00
	Materials Estimate	$ 480.65
	Labor Estimate	$ 2,111.30
	Contingency 5%	$ 129.60
	Project Estimate	**$ 2,721.55**

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August 2, 2018

James Stanton
690 Quinnell Ave. N
Lakeland, MN 55043-0643

RE: Johnson Residence 16674 7th Street South

Dear Mr. Stanton:

The Middle St. Croix Watershed Management Organization (MSCWMO) received the required submittal items on July 5, 2018 and revised submittals on July 27, 2028 for the proposed Johnson Residence New Construction, located at 16674 7th Street South, within MSCWMO boundaries and in the City of Lakeland. The proposed project qualifies for full review under the MSCWMO 2015 Watershed Management Plan (WMP).

The project, as submitted, contains sufficient information to determine conformance with the Policies and Performance Standards contained within Section 7.0 of the MSCWMO Watershed Management Plan

The MSCWMO recommends approval of the project with the following eight conditions:

1. Raise the lowest floor elevation of structure two feet above the 100-year flood elevation.
2. Identify the location, size and vegetative characterizes of the buffer upslope of Lake St. Croix.
3. Add estimated types and quantities of temporary erosion control, permanent erosion control and sediment control practices.
4. Add required contact information for person responsible for construction site erosion and sediment control.
5. Identify soiling tilling and soil bed preparation prior to installation of final vegetation
6. Identity timing of installation of final stabilization.
7. Add infiltration basin construction standards.
8. Add requires infiltration basin detail and amendments information.

His recommended approval is based on the technical review of the MSCWMO performance standards and does not constitute approval by the City of Lakeland. The enclosed checklist contains detailed information on project review qualifications and the policies and performance standards of the WMP. MSCWMO review process information can be downloaded from www.mscwmo.org. Please contact me at 651-330-8220 x22 or misensee@mnwcd.org if you have any questions.

Sincerely,

Mikael Isensee
MSCWMO Administrator
misensee@mnwcd.org

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

MSCWMO Project Review ID: 18-015

Project Name: Johnson Residence

Applicant: Jeffrey and Susan Johnson

Purpose: New residential house with attached garage

Location: 16674 7th Street South, Lakeland

Review date: 8/2/2018

Recommendation: Approve with 1 condition

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.

MIDDLE ST. CROIX WATERSHED MANAGEMENT ORGANIZATION
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ALL SUBMITTALS MUST CONTAIN THE FOLLOWING ITEMS:

☒ 1. Review Fee: Single lot residential $350 fee.

☒ 2. Grading plan showing grading limits, existing and proposed contours related to NAVD 1988 datum (preferred) or NGVD 1929.

☒ 3. Location of existing and proposed permanent structures.

☐ 4. Ordinary High Water (OHW) elevations and location of all existing water bodies.

☒ 5. Location of all bluff lines.

☒ 6. Lowest floor elevations of structures built adjacent to stormwater management features and other water bodies must be a minimum of two feet above the 100-year flood elevation.

☒ 7. Delineation of existing wetland, shoreland, ordinary high water levels, drain tiling, and floodplain areas.

NA 8. Details of proposed buffer upslope of water resources including size and vegetation characteristics (when applicable).

☐ 9. Erosion/sediment control plan demonstrating locations, specifications, and details of the following items:

A. Erosion Prevention
   i. Stabilize all exposed soil areas (including stockpiles) with temporary erosion control (seed and mulch or blanket) within 7 days after construction activities in the area have temporarily or permanently ceased.
   ii. Identify location, type and quantity of temporary erosion prevention practices.
   iii. Identify permanent vegetation.

B. Sediment Control
   i. Sediment control practices will be placed down-gradient before up-gradient land disturbing activities begin.
   ii. Identify the location, type and quantity of sediment control practices.
   iii. Vehicle tracking practices must be in place to minimize track out of sediment from the construction site. Streets must be cleaned if tracking practices are not adequate to prevent sediment from being tracked onto the street.

C. Inspections and Maintenance
   i. Applicant must inspect all erosion prevention and sediment control practices once every 7 days or after a ½" rain event to ensure integrity and effectiveness. All nonfunctional practices must be repaired, replaced or enhanced the next business day after discovery.
   ii. Plans shall include contact information including email and a phone number of the person responsible for inspection and compliance with erosion and sediment control.

D. Pollution Prevention
   i. Solid waste must be stored, collected and disposed of in accordance with state law.
   ii. Provide effective containment for all liquid and solid wastes generated by washout operations (concrete, stucco, paint, form release oils, curing compounds).
   iii. Hazardous materials that have potential to leach pollutants must be under cover to minimize contact with stormwater.

E. Final Stabilization
   i. For residential construction only, individual lots are considered final stabilized if the structures are finished and temporary erosion protection and downgradient sediment control has been completed.
   ii. Grading and landscape plans shall include soil tillage and soil bed preparation methods that are employed prior to landscape installation to a minimum depth of 8" and incorporate amendments to meet Minnesota State Stormwater Manual predevelopment soil type bulk densities.
      1. Observe minimum setbacks for areas within the dripline of existing trees, over utilities within 30 in of the surface, where compaction is required by design and inaccessible slopes.

10. Details of proposed structural stormwater practices (Meets Minnesota Stormwater Manual guidelines)

A. Stormwater flows are diverted away from bluffs whenever feasible.
B. Volume control facilities must drain down within 48 hours, as required by the MPCA NPDES Construction Stormwater Permit.
   i. The period of inundation shall be calculated using the maximum water depth below the surface discharge elevation and the soil infiltration rate.
C. The maximum water depth for volume control facilities is 1.5 feet.
D. Planting plan identified vegetation suitable for the hydrology of the basin.
E. Separation from seasonally saturated soils or bedrock is 3 feet or more for bioretention and infiltration practices.

F. Volume control facilities meet the following setback requirements:

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

G. Volume control is provided for the first 1.1"inch of runoff for all impervious:

Volume Retention Required (cu. ft.)	Volume Retention Provided (cu. ft.)
16,643 sf * 1.1"= 1,525.6 1,525.6 total required	BMP #1 Volume = 1,643 Total = 1,643

H. Construction Standards

i. To prevent soil compaction, the proposed volume control facility must be staked off and marked during construction to prevent heavy equipment and traffic from traveling over it.

ii. Facilities may not be excavated within 2.0 feet of final grade until the contributing drainage area has been constructed and fully stabilized.

iii. Facilities are in-place during construction activities, all sediment and runoff must be diverted away the facility, using practices such as pipe capping or diversions.

iv. Facilities installation must occur in dry soil conditions. Excavation, soil placement and rapid stabilization of perimeter slopes must be accomplished prior to the next precipitation event.

v. 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.

vi. Prior to the release of any remaining fee or security, the owner must provide documentation that constructed volume control facilities perform as designed.

I. Details

i. Include a standard cross section of the infiltration device similar to those identified in the Minnesota Stormwater Manual

ii. The cross section must detail the infiltration media used in the device. Typically, devices use Mix B as described in the Minnesota Stormwater Manual: A well-blended, homogenous mixture of 70 to 85 percent washed construction sand; and 15 to 30 percent MnDOT Grade 2 compost .

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July 19, 2018

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

RE: Orchards at Cahanes

Dear Ms. Healey,

The Middle St. Croix Watershed Management Organization (MSCWMO) received submittals on June 24, 2018 for the proposed Orchards at Cahanes Farm, 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 provides sufficient information to determine compliance with applicable Performance Standards contained within Section 7.0 of the 2015 MSCWMO WMP.

The MSCWMO recommends approval with 16 conditions:

1. Consider adding construction phasing and required site plan areas for temporary erosion and sediment control. The site contains a lot of topography and wetlands that will require planning and attention to detail to prevent violations to the NPDES permit and the wetland conservation act.
2. Dewatering of highly turbid ponds will be a necessity to avoid wetland impacts during construction. Provide a detailed description of the recommended dewatering techniques.
3. The plans contain a detail for V notch ditches. These ditches are prone to erosion. Please indicate where these ditches are proposed and demonstrate proposed permanent stabilization is sufficient to withstand design flows.
4. Add the following pollution prevention management guidance measures: vehicle and equipment washing, no engine degreasing allowed on site, containments of concrete and other washout waste, portable toilets are positioned so that they are secure.
5. Identify erosion control timeframes of 14 days (or 7 days for Appendix A waters within one mile of the project area), wetted perimeters of ditches stabilized within 200 feet of surface water within 24 hours, pipe outlets have energy dissipation within 24 hours of connecting.
6. Provide written documentation from the Township Engineer that low floor elevations variances are acceptable.
7. Remove topsoil from infiltration and bioretention basins. Consider tilling 3” of MnDOT type 2 leaf litter compost 6” deep in the native soils.
8. Remove the surface geotextile from under the filtration basin rock.
9. Remove the geotextile and pea rock around the under drain of the filtration basin. Replace with a circular knit sock. Raise the underdrain 0.5’ off the bottom of the native soils.
10. Identify temporary sediment basins at locations where 10 acres or more are draining to a common location.
11. Add pretreatment to the stormwater pipe discharging to infiltration basin 1.
12. At what intensity does the 1.1” storm event bypass the infiltration facility in each of proposed structure scenarios?

13. Provide an erosion mat specification for the detail "Erosion Mat Weir Overflow Spillway Section For Infiltration Basins.
14. Remove gate valves and flush valves and add temporary plugs to keep infiltration facilities off line during construction.

15. Add the following infiltration basin construction guidance:
    a. Excavation within 2.0 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 perform as designed.
16. Correct the following outstanding stormwater calculation issues:
    a. a/b/c/ Post nothing routed to 24p, 4p doesn't have the eof listed.
    b. Wp6 detail doesn't match HydroCad- area 100 yr not in pdf 930 vs 929.5 eof
    c. Wp8 detail doesn't match HydroCad- area 100 yr not in pdf,
    d. Wp7 detail doesn't match HydroCad- 907.75 vs 908 eof
    e. Wp4 12" orifice invert does not match between details, one of the details doesn't match model, also doesn't have the eof listed.
    f. Wp1 detail doesn't match HydroCad: 21" plan orifice doesn't match 12" orifice in model. eof 878.5 vs 879
    g. Wp5 detail doesn't match HydroCad- doesn't have the eof listed.
    h. Wp3 detail doesn't match HydroCad- 886.75 vs 887

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

MIDDLE ST. CROIX WATERSHED MANAGEMENT ORGANIZATION
455 HAYWARD AVE. N.
OAKDALE, MINNESTOA 55128
Phone 651.330.8220 x22 fax 651.330.7747 www.mscwmo.org

PROJECT REVIEW

MSCWMO Project Review ID: 17-12

Project Name: Orchards at Cahanes Farm

Purpose: Residential Development

Location: Baytown Township

Review date: 6/22/2018

Recommendation: Approve with 16 conditions:

1. Consider adding construction phasing and required site plan areas for temporary erosion and sediment control. The site contains a lot of topography and wetlands that will require planning and attention to detail to prevent violations to the NPDES permit and the wetland conservation act.
2. Dewatering of highly turbid ponds will be a necessity to avoid wetland impacts during construction. Provide a detailed description of the recommended dewatering techniques.
3. The plans contain a detail for V notch ditches. These ditches are prone to erosion. Please indicate where these ditches are proposed and demonstrate proposed permanent stabilization is sufficient to withstand design flows.
4. Add the following pollution prevention management guidance measures: vehicle and equipment washing, no engine degreasing allowed on site, containments of concrete and other washout waste, portable toilets are positioned so that they are secure.
5. Identify erosion control timeframes of 14 days (or 7 days for Appendix A waters within one mile of the project area), wetted perimeters of ditches stabilized within 200 feet of surface water within 24 hours, pipe outlets have energy dissipation within 24 hours of connecting.
6. Provide written documentation from the Township Engineer that low floor elevations variances are acceptable.
7. Remove topsoil from infiltration and bioretention basins. Consider tilling 3” of MnDOT type 2 leaf liter compost 6” deep in the native soils.
8. Remove the surface geotextile from under the filtration basin rock.
9. Remove the geotextile and pea rock around the under drain of the filtration basin. Replace with a circular knit sock. Raise the underdrain 0.5’ off the bottom of the native soils.
10. Identify temporary sediment basins at locations where 10 acres or more are draining to a common location.
11. Add pretreatment to the stormwater pipe discharging to infiltration basin 1.
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a. a/b/c/ Post nothing routed to 24p, 4p doesn't have the eof listed.
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16. Add the following infiltration basin construction guidance:
    a. Excavation within 2.0 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 perform as designed.

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.

☐ 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.

☐ 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 14 days (or 7 days Appendix A).

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.

☒ 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.

☒ 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. Variance requested.

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**
967,600 sf *1.1" = 88,697 cu. ft.	BMP #1	29,152 cu. ft.
	BMP #2	27,384 cu. ft.
	BMP #3	7,262 cu. ft.
Total Required 88,697 cu. ft.	BMP #4	23,711 cu. ft.
	BMP #5	filter
	BMP #6	12,055 cu. ft.
	BMP #7	filter
	BMP #8	0 cu. ft.
	BMP #9	6,941 cu. ft.
	BMP #10	26,608 cu. ft.
	Total Proposed	**133,113 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 60% 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.

a. Topsoil is prohibited in infiltration and bioretention systems.

☒ 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. Inf. 1 pipe discharge requires pretreatment

☐ Water quality volume will be discharged through infiltration or filtration media in 48 hours or less. Inf 8, inf 10

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. Inf 8, inf 10

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

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

☒ 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.

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

a. Excavation within 2.0 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 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.

~~Hydrocad time span could be longer (5-20 hrs), did we set time span in the plan update????~~

a/b/c/ Post nothing routed to 24p, 4p doesn't have the eof listed.
Wp9 ~~detail doesn't match hydrocad: 6" orifice is vertical on plan, 48" orifice is 60" on plan, doesn't have the eof listed.~~

Wp6 detail doesn't match hydrocad: ~~6" orifice on plan is missing in model,~~ ~~48" orifice is 60" on plan~~ g area 100 yr not in pdf 930 vs 929.5 eof
Wp8 detail doesn't match hydrocad: ~~6" orifice on plan is missing in model, 48" orifice is 60" on plan~~ g area 100 yr not in pdf,
Wp7 detail doesn't match hydrocad: ~~24x24 on plan doesn't match 24x30 in model, 6" orifice doesn't match 12" dia orifice in 2 details and neither are in model.~~ 907.75 vs 908 eof
Wp4 ~~detail doesn't match hydrocad: 24x24 on plan doesn't match 24x30 in model, 8" orifice doesn't match 12" orifice in 2 details and neither are in model.~~ 12" orifice invert does not match between details, one of the details doesn't match model. ~~Is one of the wp4 plan details for INF4? Details on sheet C8.10 & C8.11 don't match inverts. Model 12' culvert is 100', plan shows 14'. Detail structure diameters don't match each other.~~ doesn't have the eof listed.
Wp1 detail doesn't match hydrocad: 21" plan orifice doesn't match 12" orifice in model; 1~~2" culvert, 48" or 60" horizontal orifice on plan missing in model. Details contradict size of structure 48" or 60", doesn't have the eof listed~~ eof 878.5 vs 879
Wp5 detail doesn't match hydrocad: ~~30" pipe lengths don't match plan to model,~~ ~~Details contradict size of structure 48" or 60" & with model~~, doesn't have the eof listed.
Wp3 detail doesn't match hydrocad: ~~12" orifice doesn't match 6" orifice in model, details contradict size of structure 48" or 60" with model listing 48",~~ ~~12" pipe length doesn't match,~~ ~~doesn't have the eof listed.~~ 886.75 vs 887

MIDDLE ST. CROIX WATERSHED MANAGEMENT ORGANIZATION
455 HAYWARD AVE. N
OAKDALE, MINNESTOA 55128
Phone 651.275.1136 x22 fax 651.275.1254 www.mscwmo.org

August 6, 2018

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

RE: Palmer Station, Oak Park Heights

Dear Mr. Johnson,

The Middle St. Croix Watershed Management Organization (MSCWMO) received submittals on April 6th, 2018 and revised submittals on July 2, 2018 for the proposed Palmer Station subdivision, located within MSCWMO boundaries and in the City of Oak Park Heights. The proposed project qualifies for full review under the MSCWMO 2015 MSCWMO Watershed Management Plan (WMP).

The MSCWMO Board reviewed the revised plans dated July 2, 2018 and recommends approval with the following 5 conditions:

1) Submit dedication or easement of the property which are adjacent to the facility and which lie below the 100 year flood level.
2) Submit a maintenance agreement in a format approved by the City.
3) Identify inlet protection for stormwater inlets.
4) MIDS Calculator- North bioretention basin w/ underdrain: Change BMP Parameter setting "Is a soil amendment used to attenuate phosphorus" to No.
5) North Filtration Basin- reduce the length of the southern two runs of underdrain by 30.0' to reduce the potential of stormwater short circuiting the filtration media.

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

Sincerely,

Mike Isensee
MSCWMO Administrator

Enclosure

MIDDLE ST. CROIX WATERSHED MANAGEMENT ORGANIZATION
455 HAYWARD AVE. N.
OAKDALE, MINNESTOA 55128
Phone 651.330.8220 x22 fax 651.330.7747 www.mscwmo.org

PROJECT REVIEW

MSCWMO Project Review ID: 18-005

Project Name: Palmer Station

Applicant: Mark Guenther, Creative Homes Construction Investment LLC, 707 Commerce Drive, Suite 410, Minneapolis, MN 55401

Purpose: 13 Lot Residential Subdivision

Location: Oak Park Heights

Review date: ~~3/26/2018~~ 8/2/2018

Recommendation: ~~Revise and resubmit~~. Revisions required:

3/26 Remaining Conditions:

1) Submit dedication or easement of the property which are adjacent to the facility and which lie below the 100 year flood level

2) Submit a maintenance agreement in a format approved by the City.

3~~) Identify training requirements for the person responsible for erosion and sediment control inspections.~~

4) Identify inlet protection for stormwater inlets

5) ~~Add redundant sediment controls required around wetland #1.~~

6) ~~Expand non impacted buffer areas for wetland #1 to compensate for the required buffer averaging.~~

7) ~~Label proposed buffer areas~~

8~~) Modify the following building lot elevations: Building lot # 8 must increase elevation by .1 ft. Building lot #13 needs LFO to be 955.9.~~

9) Revised MIDS calculator utilizing the correct practices and ponding depth restrictions for the biofiltration basin to demonstrate compliance with MIDS FTO #2.

~~10) Identify as built survey and method to demonstrate infiltration or filtration basin is functioning.~~

11~~) Include the following construction standards for the biofiltration basin:~~

- ~~a. 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.~~
- ~~b. 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.~~
- ~~c. Prior to the release of any remaining fee or security, the permit holder must provide documentation that constructed volume control facilities perform as designed.~~

~~12) Identify the location of the 8.0" maintenance access to the South Filtration Basin on the grading plans.~~

8/3 Additional Conditions:

1. MIDS Calculator- North bioretention basin w/ underdrain: Change BMP Parameter setting "Is a soil amendment used to attenuate phosphorus" to No.

2. North Filtration Basin- reduce the length of the southern two runs of underdrain by 30.0' to reduce the potential of stormwater short circuiting the filtration media.

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.

☒ 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.

☐ 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. Proposed inlets draining to the fore-bay require protection.~~

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. ~~Redundant sediment controls required around wetland #1.~~

☒ 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). ~~Label buffer areas.~~

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). N/A*

LAKE, STREAM AND WETLAND BUFFERS

☒ A buffer zone of unmowed natural vegetation is maintained or created upslope of all water bodies (wetlands, streams, lakes). ~~Expand non impacted buffer areas for wetland #1 to compensate for the required buffer averaging.~~

NA 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.

☐ 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. ~~Building lot # 8 must increase elevation by .1 ft.~~ ~~Building lot #13 needs LFO to be 955.9~~

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 documented due to the site being located within the City of Oak Park Heights Well Head Protection Zone.**

Volume Retention Required (cu. ft.)	Volume Retention Provided (cu. ft.)

103,600 * 0.55"= 4,748 and 75% TP Reduction per MIDS Calculator **Total Required 4,748 cu. ft.** **and 75% TP Reduction per MIDS.**	**BMP** **Volume** BMP #1 6,417 cu. ft. BMP #2 8,107 cu. ft. **Total Proposed 14,524 cu.ft.**

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 60% of the annual total phosphorous. ~~When used correctly, the MIDS calculator indicates 60% TP load reduction is not achieved.~~

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.

☒ The following condition exists that prohibits infiltration of stormwater on the site
Areas of Hydrologic Soil Group D (clay) soils

☒ 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 or the MIDS calculator.

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.

NA 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. ~~Ponding depth of the biofiltration basins exceed 1.5' maximum ponding depth standards.~~ Maximum ponding depth of filter is 4' – condition met

N/A 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.

☒ Identify as built survey and method to demonstrate infiltration or filtration basin is functioning.

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

d. Excavation within 2.0 feet of final grade for infiltration/filtration systems is prohibited until contributing drainage areas are constructed and fully stabilized.

e. Rigorous sediment and erosion controls planned to divert runoff away from the system.

f. 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.

g. 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.

h. Prior to the release of any remaining fee or security, the permit holder must provide documentation that constructed volume control facilities 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. ~~Clarify the location of the maintenance access to the South Filtration Basin on the grading plans.~~

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.

Notes/Conditions:

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

Administrator's Report- June & July 2018

Administration

- Lakeland Shores Local Surface Water Management Plan
- Stillwater Foundation Grant Final Report
- Work Plan Agreements for St. Croix River Association Grant Agreement
- Community Dues Letters
- FY19 Clean Water Fund Grant Applications
- BMP Annual Inspections Summaries and Letters
- 2019 Draft Budget

Project Reviews

- 2909 Itasca Ave, St. Mary's Point
- Orchards at Cahanes, Baytown Township
- Palmer Station, Oak Park Heights
- Johnson Residence, Lakeland

Conservation Project Technical Assistance and Cost Share

- Girl Scouts Perro Creek Planting June 30
- Minnesota Conservation Corps Crew Coordination June 25
- Bayport Inspiration Development Erosion and Sediment Control Inspections July 17, July 26,

Lily Lake Phase III Grant

Description: $109,000 for stormwater quality improvements for areas discharging to Lily Lake (2014-2018). This grant is fully allocated to the Greeley Gully Stabilization Project.
Activities This Month: Storm repairs, vegetation management, and plant installation.

~~**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:** Grant Completed.~~

Lake St. Croix Direct Discharge Phase I

Description: $142,000 grant for stormwater quality improvements in Oak Park Heights, Stillwater and Bayport (2014-2018).
Activities This Month: Continue vegetation management maintenance and coordinated repairs to the basin from storm events.

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: Identified two projects areas. Created concepts. Met with City of Stillwater Staff. Met with Stillwater County Club Staff.

Lily Lake Final – 45

Description: $58,000 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: Coordinating final billings. Writing final report.

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: Met with the City, created cost estimates, met on site with Patrick.

Beske Gully Stabilization Project

Description: $20,000 Washington Conservation District 319 grant to design and install stormwater quality practices to reduce erosion and nutrients discharging to Lake St. Croix from an actively eroding gully. $30,000 St. Croix River Association Grant to reduce erosion and nutrients discharging to Lake St. Croix.
Activities This Month: Completed draft plans, conducted soil borings, transmitted draft plans to the City of Lakeland and DNR, met on site to evaluate storm damage.

Lake St. Croix Direct Phase III

Description: $34,000 grant for stormwater quality improvements in Oak Park Heights, Stillwater and Bayport (2018-2021)
Activities This Month: Completed grant agreements.

Meetings

- One Watershed One Plan Policy Committee Meeting June 25 4-6
- One Watershed One Plan Steering Committee Meeting July 12
- Lily Lake Herbicide and Algaecide Treatment Meeting July 16
- Watershed Based Funding Meeting, May 10
- Minnesota Stormwater Research Council, June 27 and July 13
- County Watershed Joint Meeting, May 21
- SSTS Risk Assessment Meeting Washington County, August 7

Upcoming Events

- One Watershed One Plan Policy Committee Meeting and Boat Tour, August 27
- Washington County Water Consortium, September 5