

# elm creek Watershed Management Commission

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April 4, 2018

Representatives  
Elm Creek Watershed Management Commission  
Hennepin County, MN

*The meeting packets for these meetings may be found on the Commission's website:*  
<http://www.elmcreekwatershed.org/minutes--meeting-packets.html>

Dear Representatives:

A **regular meeting** of the Elm Creek Watershed Management Commission will be held on **Wednesday, April 11, 2018, at 11:30 a.m.** in the Mayor's Conference Room at Maple Grove City Hall, 12800 Arbor Lakes Parkway, Maple Grove, MN.

The **Technical Advisory Committee (TAC)** will meet at 10:00 a.m., prior to the regular meeting. TAC meeting materials can also be found on the Commission's website.

Please email Tiffany at [tiffany@jass.biz](mailto:tiffany@jass.biz) to confirm whether you or your Alternate will be attending the TAC and the regular meetings.

Thank you.

Regards,



Judie A. Anderson  
Administrator  
JAA:tim  
Encls: Meeting Packet

cc: Alternates	HCEE	BWSR	MPCA
Joel Jamnik	Diane Spector	Met Council	DNR
TRPD	Clerks	Official Newspaper	

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# elm creek

## Watershed Management Commission

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Item 01

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### Meeting of Technical Advisory Committee AGENDA April 11, 2018

- I. Approve Agenda.\*
- II. Approve Minutes of February 14, 2017 TAC meeting.\*
- III. Cost Share Policy.\*
  - A. Recommendation to Commission.
- IV. Revised CIP.\*
  - A. Additional CIP Application – Rush Creek SWA BMP Implementation.\*
  - B. Call for Public Meeting – Minor Plan Amendment.
  - C. Feasibility Reports.
    1. Rush Creek Main Stem Stream Restoration, M. Grove, \$75,000 (line 16).\*
    2. Elm Creek Stream Restoration Reach D, Plymouth, \$212,500 (line 18).\*
    3. Mill Pond Gardens, Champlin, \$100,000, (line 30).\*
    4. Elm Creek Stream Restoration Phase III, Champlin, \$100,000 (line 40).\*
    5. Downs Road Trail Rain Garden, Champlin, \$12,500 (line 41).\*
  - D. Recommendation to Commission: Approve projects for ad valorem funding and call for public hearing.
  - E. Identify projects for BWSR Pilot Funding Project.
- V. Draft manure management model ordinance/policy.\*
- VI. Submersed Aquatic Vegetation Management Policy.\*
- VII. Other Business.
- VIII. Next TAC meeting \_\_\_\_\_.

# elm creek Watershed Management Commission

Item 011

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## Technical Advisory Committee and Regular Meeting Minutes February 14, 2018

I. A meeting of the **Technical Advisory Committee (TAC)** for the Elm Creek Watershed Management Commission was convened at 9:31 a.m., Wednesday, February 14, 2018 in the Mayor's Conference Room, Maple Grove City Hall, 12800 Arbor Lakes Parkway, Maple Grove, MN.

In attendance were: Todd Tuominen, Champlin; Kevin Mattson, Corcoran; Rick Lestina and Mark Lahtinen, Maple Grove; Kaci Fisher, Hakanson-Anderson, Medina; Ben Scharenbroich, Plymouth; Andrew Simmons, Rogers; James Kujawa, Jason Swenson, and Kirsten Barta, Hennepin County Dept. of Environment and Energy (HCEE); Brian Vlach, Three Rivers Park District (TRPD); Jeff Weiss, Barr Engineering; and Judie Anderson, JASS.

Not represented: Dayton.

Also present: Sharon Meister, Corcoran; Doug Baines, Dayton; Catherine Cesnik, Plymouth; and Jeff Strom, Wenck Associates.

II. Motion by Scharenbroich, second by Kujawa to **approve the agenda**. *Motion carried unanimously.*

Motion by Scharenbroich, second by Lestina to **approve the minutes** of the December 13, 2017 TAC meeting. *Motion carried unanimously.*

*[Mattson arrived 9:43 a.m.]*

### III. Rush Creek Subwatershed Assessment.

Strom presented an update on the assessment project. Included in the meeting packet were the following:

A. A map\* of the assessment study area showing **resident attendance** at the Open House held on December 7, 2017 at Corcoran City Hall. Concerns expressed at the meeting related to streambank erosion, buffers, culverts, heavy tree downfalls/debris in the creek, drainage, and flooding, the latter two being of most concern. Private ditches had more issues, mostly related to upstream problems such as sediment from fields, drain tiling, and hydrology alteration. Will need to determine if cities/the County have policies regarding any of these issues.

B. A map\* of refined BMPs in the **South Tributary Management Unit**. Map shows location of refined BMPs identified using the agricultural conservation planning framework (ACPF).

C. Spreadsheet\* showing **structural BMP cost-benefit analysis** for South Tributary Management Unit. BMPS illustrated include grassed waterways, saturated buffers, wetland restorations, and alternate tile intakes (ATIs). Query: runoff risk sediment delivery risk – is this a high-medium-low runoff risk area?

*[Barta arrived 10:56 a.m.]*

*Non-structural* BMPs include such things as feedlot/pasture/manure management, fertilizer application, education and outreach, urban BMPs, and cropping practices such as no-till, conservation tillage, and cover crops.

A draft final report will be ready for review in April.

### IV. Commission Cost Share Policy.

At their December 13, 2017 meeting, the Commissioners discussed the “cap” on the maximum annual levy for

Capital Improvement Projects (CIPs). It was noted that, according to the Commission's current Cost Share Policy which was adopted in 2012, the cap is \$250,000/project, \$500,000/year. The current CIP,\* which was amended in 2017, shows estimated costs for projects anticipated to be levied in 2018/payable 2019 are \$1,395,250. While some 2018 projects may be reassigned to future years, others will most probably be added and the costs of some existing projects may increase. Commissioners and TAC members were encouraged to discuss this possible action with their city personnel/councilors.

Plymouth indicated they were okay with a raise in the annual cap to \$750,000. Maple Grove said they would like to maintain the cap at \$500,000. Rogers indicated they would probably not be in favor of an increase. Medina misunderstood the intent and will go back to their Council for direction. Motion by Scharenbroich, second by Simmons to table action on this topic to the next TAC meeting so that all member cities can be polled. *Motion carried unanimously.*

**V. Capital Improvement Program.**

**A.** The members reviewed the CIP spreadsheet (*Table 4.5\_2017 with 2018 submittals\_Rev2*).\*

1. Stone's Throw Wetland (line 31) has been moved from 2018 to 2019.
2. Hickory Drive Stormwater Improvement, Medina, (line 37) has been added in 2019.
3. Southeast Corcoran Wetland Restoration, Corcoran, (line 38) has been added in 2019.
4. Downtown Regional Stormwater Improvement, Corcoran, (line 39) has been added in 2019.

Motion by Kujawa, second by Scharenbroich to recommend to the Commission approval of the revisions listed above. *Motion carried unanimously.*

[Tuominen arrived 11:10 a.m.]

Tuominen requested that four additional projects be added to the CIP:

5. Elm Creek Stream Restoration Phase III, Champlin, (new line 40) to be added in 2018.
6. Downs Road Trail Raingarden, Champlin, (new line 41) to be added in 2018/2019.
7. Elm Creek Stream Restoration Phase IV, Champlin, (new line 42) to be added in 2019
8. Lowell Pond Raingarden, Champlin, (new line 43) to be added in 2019.

Motion by Kujawa, second by Scharenbroich to recommend to the Commission approval to add the four Champlin projects to the CIP. *Motion carried unanimously.*

**B.** Projects were reviewed for timeliness and some construction dates adjusted. Generic projects were extended out to the 2020-2024 timeframe. As a result \$500,000 in projects will be considered for levy funding in 2018/payable 2019. Motion by Kujawa, second by Lestina to recommend to the Commission the following five projects for levy funding pending receipt and approval of feasibility studies and adoption of a Minor Plan Amendment updating the CIP:

1. Rush Creek Main Stem Stream Restoration (line 16), Maple Grove, \$75,000
2. Elm Creek Stream Restoration Reach D (line 18), Plymouth, \$212,500
3. Mill Pond Gardens (line 30), Champlin, \$100,000
4. Elm Creek Stream Restoration Phase III (line 40), Champlin, \$100,000
5. Downs Road Trail Rain Garden (line 41), Champlin, \$12,500

*Motion carried unanimously.*

**VI. Draft Manure Management Model Ordinance/Policy.**

Barta reported that she will have a draft of the ordinance/policy available to send to the member cities for review and comment prior to the April 11 TAC meeting.

**VII. Aquatic Vegetation Management.**

In the years prior to 2010 the Shingle Creek Watershed Management Commission received final approval for 13 lake TMDLs and Implementation Plans. One of the goals the Commission set for itself was to undertake reviews of these implementation plans to evaluate progress toward achieving the state TMDL goals every five years following adoption of



the respective Implementation Plans. Along with follow-up lake monitoring one component of the five-year reviews was meetings with the affected cities and local lake property owners to hear their comments regarding the work done by the Commission and others in and around the lakes.

One discussion that usually came up was, while improvements were made to the lake, oftentimes the results included increased vegetation, whether it be native “good” plants or invasive “bad” plants. Residents were concerned that they were losing the clear open space they were expecting to accommodate access to the lake as well as recreational enjoyment. They also expected the Commission to “fix it.”

The Shingle Creek Commission is now considering a **vegetation management policy\*** that would protect water quality and ecologic integrity. Members of the Commissions’ Technical Advisory Committee advised the Commission that perhaps such a policy should be more metro-wide in scope since all of its member cities also are members of neighboring watersheds and it would be beneficial that the policy of each WMO be similar, if not the same. The Commissioners requested that Staff contact other WMOs with which they work to present the draft policy as a very preliminary draft for consideration. The draft policy is included in the meeting packet for the members’ review and comment.

**VIII.** The meeting of the Technical Advisory Committee was adjourned at 11:30 a.m. The TAC will reconvene on Wednesday, April 11, 2018.

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**I.** A **regular meeting** of the Elm Creek Watershed Management Commission was called to order at 11:42 a.m., Wednesday, February 14, 2018, in the Mayor’s Conference Room, Maple Grove City Hall, 12800 Arbor Lakes Parkway, Maple Grove, MN, by Chairman Doug Baines.

Present were: Bill Walraven, Champlin; Sharon Meister, Corcoran; Doug Baines, Dayton; Victoria Reid, Medina; Fred Moore, Plymouth; Kevin Jullie, Rogers; James Kujawa and Jason Swenson, Hennepin County Dept. of Environment and Energy (HCEE); Brian Vlach, Three Rivers Park District (TRPD); Jeff Weiss, Barr Engineering; and Judie Anderson, JASS.

Not represented: Maple Grove.

Also present: Todd Tuominen, Champlin; Kevin Mattson, Corcoran; Mark Lahtinen, Maple Grove; Catherine Cesnik and Ben Scharenbroich, Plymouth; and Andrew Simmons, Rogers.

**A.** Motion by Walraven, second by Moore to approve the **revised agenda.\*** *Motion carried unanimously.*

**B.** Motion by Walraven, second by Jullie to approve the **minutes\*** of the January 10, 2018, regular meeting. *Motion carried unanimously.*

**C.** Motion by Moore, second by Walraven to approve the February **Treasurer’s Report and Claims\*** totaling \$52,620.20. *Motion carried unanimously.*

**II. Open Forum.**

**III. Action Items.**

**A. Project Review 2018-001 Rush Creek Commons, Maple Grove.\*** This project is located on a 9.13-acre site at the southwest intersection of CSAH 10 and 101. It is part of the Markets at Rush Creek PUD and is proposed for 82 townhomes, creating 4.68 acres of new impervious area. Staff review was for consistency with the Commission’s approvals for the Markets at Rush Creek PUD stormwater management plan (project 2009-004) and for compliance with the Commission’s Third Generation Stormwater Management Plan Appendix O, Rules and Standards. Staff recommends approval of site plans dated January 25, 2018, contingent upon meeting the Commission’s operation and maintenance requirements on the stormwater facilities. Motion by Moore, second by Walraven to approve this project subject to Staff’s recommendation. *Motion carried unanimously.*

**B.** Motion by Moore, second by Jullie to approve the **2018 Cooperative Agreement with Hennepin county Environmental Services** in an amount not to exceed \$120,000 – \$110,000 for Technical Services and \$10,000 for Volunteer Monitoring Services. *Motion carried unanimously.*

## **Elm Creek Watershed Management Commission**

### **Cost Share Policy**

To facilitate implementation of improvement projects within the watershed, the Elm Creek Watershed Management Commission's Joint Powers Agreement (JPA) and Section V of its Second Generation Watershed Management Plan provide for a Capital Improvement Program (CIP). The JPA also describes how the costs of capital projects shall be allocated.

The Management Plan proposes to share the cost of high-priority watershed capital improvements and demonstration projects through the CIP. High-priority watershed capital improvements are those activities that go above and beyond general city management activities and are intended to provide a significant improvement to the water resources in the watershed. To be considered for inclusion in the CIP, projects must be identified in a Commission-adopted management plan, approved TMDL, or member local stormwater plan or CIP.

In order to identify projects for inclusion on its Capital Improvement Program, the Elm Creek Watershed Management Commission will accept city proposals for cost-share projects until March 15 of every year. Following that date, the Commission's Technical Advisory Committee will review and score the submittals and make a recommendation regarding additions and revisions to the Commission's existing CIP at their regular May meeting.

The Commission has developed a set of criteria by which proposed projects will be scored, with those projects scoring a certain minimum number of points on the submittal form screening questions advancing to a prioritization stage. (Refer to the Commission's Capital Improvement Program Standards and Guidelines.)

Prior to consideration for funding, a feasibility study or engineering report must be written for the proposed project. The city acting as the lead agency for a proposed project will be responsible for the development of and the costs associated with the feasibility study/engineering report.

The Commission has elected to fund capital projects through an ad valorem tax levy. Under the authority provided by MN Stat 103B.251, Subd. 5, the Commission has the authority to certify for payment by the county all or part of the cost of an approved capital improvement. The Commission will pay up to 25 percent of the cost of qualifying projects. This amount will be shared by all taxpayers in the watershed, with the balance of the project cost being shared by the local government(s) participating in or benefiting from the improvement.

- a. The Commission's maximum annual share of an approved project is up to \$250,000.
  - 1) The Commission's share will be funded through the ad valorem tax levy – spread across all taxpayers within the watershed.
  - 2) The Commission will use a maximum annual levy of \$500,000 as a working guideline.
- b. The cities' share will be a minimum of 75% of the cost of the project. The basis of this apportionment will likely be unique to each project. The 75% share will be apportioned to the cities in the following manner or in some other manner acceptable to them. For example,
  - 1) The area directly benefiting from the project will be apportioned 25% of the cost of the project. This will be apportioned to cities based on the proportion of lake or stream frontage.
  - 2) 50% of the cost of the project will be apportioned based on contributing/benefiting area.
- c. The cities will each decide the funding mechanism that is best suited to them for payment of their share, for example through special assessments, storm drainage utility, general tax levy, or watershed management taxing district.
- d. Funding from grant sources may also be used to help pay the costs of the capital projects.

Table 4.5. Elm Creek Third Generation Plan Capital Improvement Program - following April 12 2017 meeting

Item OIV

Description	Location	Priority	Est Proj Cost	Partners	Funding Source(s)	Estimated Commission Cost						
						2015	2016	2017	2018	2019	2020-2024	
Special Studies												
TMDL implementation special study	Watershed	H	225,000	Cities, HCEED	Operating budget	0	25,000	25,000	25,000	25,000		125,000
Stream segment prioritization	Watershed	H	20,000	Cities, HCEED, TRPD	Operating budget	10,000	0	0	0	10,000	0	
High Priority Stream Restoration Projects				Cities, TRPD	Cities, TRPD, county levy, grants							
Elm Cr Reach E	Plymouth	H	1,086,000	Commission, Plymouth	County Levy - levied in 2015	250,000						
CIP-2016-RO-01 Fox Cr, Creekview	Rogers	H	321,250	Commission, Rogers	County Levy - levied in 2016	0	80,312					
Mississippi Point Park Riverbank Repair	Champlin	M	300,000		County Levy - levied in 2016	0	75,000					
Elm Creek Dam	Champlin	H	7,001,220		County Levy - levied in 2016	0	187,500					
Tree Thinning and Bank Stabilization Project	Watershed	H	50,000			0		50,000	50,000	50,000	250,000	350,000
Fox Cr, Hyacinth	Rogers	M	360,000		County Levy - levied in 2017	0	0	112,500				
Fox Cr, South Pointe, Rogers	Rogers	M	90,000			0	0	22,500	0	22,500		0
Other High Priority Stream Project	Watershed	H	500,000			0	0	0	125,000	125,000	250,000	375,000
CIP-2016-MG-02 Rush Creek Main	Maple Grove		1,650,000		County Levy - levied in 2016		75,000	75,000	75,000	25,000		
CIP-2016-MG-03 Rush Creek South	Maple Grove		675,000						168,750			168,750
CIP-2017-PL-01 EC Stream Restoration Reach D	Plymouth		850,000	City, County, Comm	City, County, Comm				212,500			
High Priority Wetland Improvements				Cities	Cities, Commission							
DNR #27-0437	Maple Grove	L	75,000			0	0	0	0	0		18,750
Stone's Throw Wetland	Corcoran	M	450,000			0	0	112,500	112,500	112,500		0
Other High Priority Wetland Projects	Watershed	L	100,000			0	0	0	0	0		25,000
CIP-2016-MG-01 Ranchview Wetland Restoration	Maple Grove		2,000,000					250,000	250,000	250,000		
Lake TMDL Implementation Projects				Cities, lake assns.	Cities, Comm, grants, owners							
Mill Pond Fishery and Habitat Restoration	Champlin	H	5,000,000		County Levy - levied in 2017	0	0	250,000				
Other Priority Lake Internal Load Projects	Watershed	M	100,000			0	0	0	0	0		25,000
	Maple Grove	H	300,000	City, TPRD, Comm, lake assn	County Levy - levied in 2016		75,000					
Stonebridge	Maple Grove	M	200,000	retrofit of addl stormsewer treatment systems will not occur during street recon project		0		50,000	0	0		0
Rain Garden at Independence Avenue	Champlin	L	300,000		County Levy - levied in 2017	0		75,000				
CIP-2016-CH-01 Mill Pond Rain Gardens	Champlin	M	400,000			0	0		100,000	0		0
Other Priority Urban BMP Projects	Watershed	L	200,000			0	0	0	0	0		50,000
Other												
Livestock Excl, Buffer & Stabilized Access	Watershed	M	50,000	ties, owners, U Extension, NRC	Cities, owners, Comm, NRCS	0	0	0	50,000	0		50,000
Agricultural BMPs Cost Share	Watershed	H	50,000	ties, owners, U Extension, NRC	Cities, owners, Comm, NRCS	0		50,000	50,000	50,000	100,000	150,000
CIP-2016-RO-04 CIP-2017-RO-1 Ag BMPs Cowley-Sylvan Connections BMPs	Rogers		300,000	City, Comm	City, Comm, BWSR				75,000			75,000
CIP-2016-RO-03 Downtown Pond Exp & Reuse	Rogers		406,000						101,500			101,500
Hickory Drive Stormwater Improvement	Medina		225,000	City. Comm, Grants						56,250		
SE Corcoran Wetland Restoration	Corcoran		400,000	City. Comm, 319 Grant						100,000		
Downtown Regional Stormwater Pond	Corcoran		50,000	City. Comm						10,000		
Elm Creek Stream Restoration Phase III	Champlin		400,000						100,000			
Downs Road Trail Raingarden	Champlin		300,000						12,500	62,500		
Elm Creek Stream Restoration Phase IV	Champlin		600,000							150,000		
Lowell Pond Raingarden	Champlin		400,000							100,000		
Hydrologic & Hydraulic Modeling	Watershed	L	25,000	HCEE/DNR FEMA Grant, remove from CIP	Commission	0	0	0	25,000	0		0
Fourth Generation Plan	Watershed	L	70,000		Commission	0	0	0	0	0		\$70,000
TOTAL STUDIES			245,000		COMM SHARE TOTAL STUDIES	10,000	25,000	25,000	25,000	35,000		
TOTAL CIPS			24,134,470		COMM SHARE TOTAL CIPS	\$ 250,000	\$ 492,812	\$ 935,000	\$ 500,000	\$ 988,750		\$ 1,459,000
			25,084,470					437,500				
Projects levied in prior years	Projects added/revised in 2017		Projects levied in 2017, payable 2018			Projects added/revised in 2018						

**Elm Creek Watershed Management Commission**  
**Capital Improvement Project Submittal**

*(This submittal will be rated on its completeness and adherence to the goals of the Commission.  
A second page may be used to provide complete responses.)*

City	Elm Creek WMC	
Contact Name		
Telephone		
Email		
Address		
Project Name	Rush Creek Headwaters SWA BMP Implementation	
	1. Is project in Member's CIP? ( <input checked="" type="checkbox"/> ) yes ( <input type="checkbox"/> ) no (Corcoran in 2024)	Proposed CIP Year = 2020
	2. Has a feasibility study or an engineering report (circle one) been done for this project? ( ) yes ( <input checked="" type="checkbox"/> ) no	
	Total Estimated Project Cost	Amount
	Estimated Commission Share (up to 25%, not to exceed \$250,000)	\$200,000
	Other Funding Sources (name them): Grants, locals, cost share	\$50,000
		\$150,000
		\$
	3. What is the scope of the project? <i>Install several of the highest-priority BMPs identified in the Rush Creek Headwaters SWA. Projects could include wetland restorations, saturated buffers, water and sediment control basins, alternative tile intakes, and grassed waterways</i>	
	4. What is the purpose of the project? What water resource(s) will be impacted by the project? <i>The purpose is to reduce pollutant loading, increasing infiltration, and serve as demonstration projects. The primary affected resource would be North Fork Rush Creek, but Henry and Jubert Lakes, other smaller tributaries, and wetlands could benefit as well.</i>	
	5. What is the anticipated improvement that would result from the project? (Include size of area treated and projected nutrient reduction.) <i>The benefits would vary with the BMP, locations, and drainage area. Some example projects in the SWA range from \$15,000-20,000 for a grassed waterway removing 5-20 lbs TP per year; \$30,000-40,000 for saturated buffers, ranging from 5-10 lbs TP; wetland restorations from \$30,000 – 200,000 yr, with TP removals ranging from 10 to 100+ lbs/yr.</i>	
	6. How does the project contribute to achieving the goals and programs of the Commission? <i>The project would undertake BMPs to achieve load reductions required by the Elm Creek Watershed TMDL and WRAPS. The BMPs would also demonstrate to other property owners how the BMPs could be implemented and what the impacts might be to their property,</i>	
0/10	7. Does the project result from a regulatory mandate? ( <input checked="" type="checkbox"/> ) yes ( ) no How? <i>TMDL required reductions.</i>	
0/10/20	8. Does the project address one or more TMDL requirements? ( <input checked="" type="checkbox"/> ) yes ( ) no Which? <i>Henry Lake nutrient TMDL, North Fork Rush E. coli and nutrient TMDL</i>	
0/10/20	9. Does the project have an educational component? ( <input checked="" type="checkbox"/> ) yes ( ) no Describe. <i>As demonstration projects, implementation of the BMPs would be publicized and available for tours.</i>	
0/10	10. Do all the LGUs responsible for sharing in the cost of the project agree to go forward with this project? ( <input checked="" type="checkbox"/> ) yes ( <input type="checkbox"/> ) no Identify the LGUs. <i>Corcoran has generic projects in its draft LWMP for 2023-2024.</i>	
10/20	11. Is the project in all the LGUs' CIPs? ( <input checked="" type="checkbox"/> ) yes ( <input type="checkbox"/> ) no See #10 above	
1-34	(For TAC use) 12. Does project improve water quality? (0-10) 13. Prevent or correct erosion? (0-10) 14. Prevent flooding? (0-5)	15. Promote groundwater recharge? (0-3) 16. Protect and enhance fish and wildlife habitat? (0-3) 17. Improve or create water recreation facilities? (0-3)
TOTAL (poss 114)		Adopted April 11, 2012



**CIP-2016-MG-02**

## EXHIBIT A

**Elm Creek Watershed Management Commission  
Capital Improvement Project Submittal**

*(This submittal will be rated on its completeness and adherence to the goals of the Commission.  
A second page may be used to provide complete responses.)*

City	Maple Grove	
Contact Name	Rick Lestina	
Telephone	763-494-6354	
Email	rlestina@ci.maple-grove.mn.us	
Address	12800 Arbor Lakes Parkway, Maple Grove, MN 55398	
Project Name	Rush Creek, Main - Stream Restoration	
	1. Is project in Member's CIP? ( X ) yes ( ) no	Proposed CIP Year = 2016
		Amount
	Total Estimated Project Cost	\$1,650,000
	Estimated Commission Share (not to exceed \$250,000)	\$250,000
	Other Funding Sources (name them)	\$
	City of Maple Grove	\$1,400,000
		\$
	2. What is the scope of the project? The City of Maple Grove is proposing a project to stabilize and restore approximately 11,000 feet of Rush Creek east of I-94 and west of Fernbrook.	
	3. What is the purpose of the project? What water resource(s) will be impacted by the project? Decrease the potential for further bank instability that likely would occur subsequent to the development of the watershed and restore the channel with native vegetation for additional stability and habitat purposes.	
	4. What is the anticipated improvement that would result from the project? Subsequent to development, it is likely that stormwater discharge from the adjacent and upstream watershed will increase. This project will significantly reduce the potential for bank erosion and sediment transport downstream. The restoration of native vegetation will provide a habitat for wildlife and a natural area for aesthetic value and study.	
	5. How does the project contribute to achieving the goals and programs of the Commission? This project improves the water quality within Rush Creek and reduces the amount of sediment and nutrients reaching Elm Creek. This project will increase the oxygenation of water discharged to Elm Creek.	
0/10	6. Does the project result from a regulatory mandate? ( ) yes ( X ) no How? There is no mandate for the City to undertake this project. However, this project will assist with for meeting the water quality goals for Elm Creek.	
0/10/20	7. Does the project address one or more TMDL requirements? ( X ) yes ( ) no Which? Although no formal implementation plan has been approved, projects that address stream bank stability will be critical in meeting the water quality goals for Elm Creek.	
0/10/20	8. Does the project have an educational component? ( X ) yes ( ) no Describe. The project will involve the establishment of a native grass channel and retention of the some quality forest buffer. The area will serve as a City demonstration in regards to the value of a buffer for water quality and wildlife purposes.	
0/10	9. Do all the LGUs responsible for sharing in the cost of the project agree to go forward with this project? ( X ) yes ( ) no Identify the LGUs. Maple Grove	
10/20	10. Is the project in all the LGUs' CIPs? ( X ) yes ( ) no	
1-34	(For TAC use)	
	11. Does project improve water quality? (0-10)	14. Promote groundwater recharge? (0-3)
	12. Prevent or correct erosion? (0-10)	15. Protect and enhance fish and wildlife habitat? (0-3)
	13. Prevent flooding? (0-5)	16. Improve or create water recreation facilities? (0-3)
TOTAL (poss 114)		

## Rush Creek Restoration

This project involves the stabilization of the erosional sites in a 2900 linear foot portion of Rush Creek within the proposed The Enclave on Rush Creek project. The initial erosion was likely due to increase flows from the developing watershed. Erosion has caused encroachment into the adjacent woods and trees and other debris to fall into the creek. The debris in the creek has resulted in diversion of flows to the toe of slopes causing accelerated erosion in most outside bend locations. The erosion has created vertical slopes that range in height from 4 to 10 plus feet.



Slope loss can be as high as 10 feet in some areas along Rush Creek.

Based on the preliminary estimates there are 1,584 linear feet of creek channel that require improvements and stabilization. Control of the erosion at these sites will help minimize loss and encroachment into the woods and future adjacent lots and the planned regional trail. The approach for the channel improvements include:

- Removal of fallen trees and debris from channel to eliminate diversion of flows to toe of slope.
- Removal of select trees along the banks of the creek that appear to be a hazard and close to falling into the channel and causing additional accelerated erosion.
- Installation of Stream Barbs along many of the outside bends with erosion. Stream Barbs protect the bank by shifting the stream flows away from the stream bank experiencing erosion. The stream barbs are a stream restoration design that will allow sediment to naturally deposit upstream of the barbs, push the flows back to the center of the channel and create a hydraulic jump in the stream that will help dissipate energy and create some pool habitat for fish.



- Native seeding and shrub planting along the erosion sites will also be done to provide deep root structures and protect the slopes from erosion.
- Vertical slopes will be re-graded to less severe slopes (2:1) to allow for stabilization.

The above discussed approach was used successfully in the Rush Creek Improvement project completed in 2006 under the City Project Number 06-16 within the Dunlavin Woods development.



Stream Barbs and Shrubs from 2006 project still functioning to protect slopes along Rush Creek (photo December 2015).

Table 2 Proposed Improvement Cost Summary

<b>The Enclave on Rush Creek Improvements</b>	<b>Fernbrook WM</b>	<b>Territorial WM</b>
Sanitary Sewer	\$330,600	\$330,600
Water Main	\$262,300	\$262,300
Services	\$218,000	\$218,000
Storm Sewer	\$402,800	\$402,800
Streets	\$963,400	\$963,400
Erosion Control	\$46,300	\$46,300
<b>Total Improvements Segal</b>	<b>\$2,223,400</b>	<b>\$2,223,400</b>
<b>City of Maple Grove</b>	<b>Fernbrook WM</b>	<b>Territorial WM</b>
Lift Station and Forcemain	\$464,500	\$464,500
Trunk Watermain	\$873,600	\$662,400
Trunk Watermain Upsize through Development	\$0	\$82,500
Territorial Road Repair - Trunk Water Cost	\$0	\$530,800
Territorial Road Repair City Portion (50% of West Rd Project)	\$0	\$116,000
<b>Rush Creek Restoration</b>	<b>\$442,300</b>	<b>\$442,300</b>
<b>Total Improvements City of Maple Grove</b>	<b>\$1,780,400</b>	<b>\$2,298,500</b>
<b>Territorial Road Assessment Properties</b>	<b>Fernbrook WM</b>	<b>Territorial WM</b>
Territorial Road (50% of West Rd Project)	\$0	\$116,000
<b>Total Improvements Assessed Properties</b>	<b>\$0</b>	<b>\$116,000</b>
<b>Total Project</b>	<b>\$4,003,800</b>	<b>\$4,637,900</b>

The proposed area charges are assigned to the net assessable acres. Table 3 presents a summary of the area charges.



## EXHIBIT A

**Elm Creek Watershed Management Commission  
Capital Improvement Project Submittal**

*(This submittal will be rated on its completeness and adherence to the goals of the Commission.  
A second page may be used to provide complete responses.)*

City	Plymouth	
Contact Name	Ben Scharenbroich	
Telephone	763-509-5527	
Email	<a href="mailto:bscharenbroich@plymouthmn.gov">bscharenbroich@plymouthmn.gov</a>	
Address	3400 Plymouth Blvd, Plymouth MN 55447	
Project Name	Elm Creek Stream Restoration – Reach D	
	1. Is project in Member's CIP? ( <input checked="" type="checkbox"/> ) yes ( ) no <b>*Will be added to Plymouth's next CIP Cycle (Early 2017)</b>	Proposed CIP Year = 2018
	2. Has a feasibility study or an engineering report (circle one) been done for this project? ( <input checked="" type="checkbox"/> ) yes ( ) no	
		Amount
	Total Estimated Project Cost	<b>\$850,000</b>
	Estimated Commission Share (up to 25%, not to exceed \$250,000)	<b>\$212,500</b>
	Other Funding Sources (name them) City CIP Funds, Hennepin County Grant	\$
		\$
	3. What is the scope of the project?  This project would restore approximately 3,850 linear feet of Elm Creek on the former Elm Creek Golf Course Property. Reach D would restore the remaining section of Elm Creek between Peony Lane and Highway 55 and would be blend into the Elm Creek Reach E Restoration Project (2015-2016) which received funding from Hennepin County and the Elm Creek Watershed Management Commission.  This project would have similar components to the Reach E project and will most likely incorporate root wads, rock veins and native vegetative buffers. Reach D was identified in the Elm Creek Channel Study (2007) as a creek section in need of restoration by increasing the channel area through the golf course property. The restored creek will have a slightly wider meander pattern resulting in a stream corridor width 60-70 feet.	
	4. What is the purpose of the project? What water resource(s) will be impacted by the project?  The purpose of this project is to restore this degraded section of Elm Creek by widening the channel, installing root wads, rock veins and native vegetative buffers to help improve water quality in Elm Creek and downstream in Rice Lake.	
	5. What is the anticipated improvement that would result from the project? (Include size of area treated and projected nutrient reduction.)  Modeled pollutant removal information would be provided to the Elm Creek Watershed Management Commission as part of the design process for this project. Reach E, which is directly downstream of this project, was recently restored and was projected to remove 94 lbs/year TP and 471,200 lbs/year TSS. The City of Plymouth is monitoring upstream and downstream of Reach E and results will be available in early summer 2017.	
	6. How does the project contribute to achieving the goals and programs of the Commission?  Elm Creek is part of the Rice Lake watershed and the goal of the project is to reduce phosphorus and total suspended soils levels in Elm Creek as part of the reductions needed to satisfy TMDL requirements. A secondary goal of the project is to incorporate stream restoration and water quality components that will improve dissolved oxygen and the index of biotic integrity in the creek.	
0/10	7. Does the project result from a regulatory mandate? ( <input checked="" type="checkbox"/> ) yes ( ) no How?  TMDL for Elm Creek and Rice Lake	

0/10/20	8. Does the project address one or more TMDL requirements? ( <input checked="" type="checkbox"/> ) yes ( ) no Which?  <b>Rice Lake – Nutrient/Eutrophication</b> <b>Elm Creek – Dissolved Oxygen</b>	
0/10/20	9. Does the project have an educational component? ( <input checked="" type="checkbox"/> ) yes ( ) no Describe.  <b>The City would provide education on the project to show how it is improving water quality. Additionally, the City could install educational signs on the Wayzata High School property explaining the project, if allowed by the school district.</b>	
0/10	10. Do all the LGUs responsible for sharing in the cost of the project agree to go forward with this project? ( <input checked="" type="checkbox"/> ) yes ( ) no Identify the LGUs. <b>City of Plymouth</b>	
10/20	11. Is the project in all the LGUs' CIPs? ( <input checked="" type="checkbox"/> ) yes ( ) no <b>Will be added to the City of Plymouth's CIP in 2017.</b>	
1-34	<i>(For TAC use)</i> 12. Does project improve water quality? (0-10) 13. Prevent or correct erosion? (0-10) 14. Prevent flooding? (0-5)	15. Promote groundwater recharge? (0-3) 16. Protect and enhance fish and wildlife habitat? (0-3) 17. Improve or create water recreation facilities? (0-3)
TOTAL (poss 114)		Adopted April 11, 2012

Z:\ELM CREEK\MANAGEMENT PLAN\EXHIBIT A\_APRIL 2012F.DOC

Judie Anderson

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**From:** Lucius N. Jonett [ljonett@wenck.com]  
**Sent:** Tuesday, April 03, 2018 3:40 PM  
**To:** Ben Scharenbroich  
**Subject:** RE: Elm Creek Stream Restoration Design Progress Report 03-27-2018

Ben,

Ed did some hand calculations to estimate reductions as:

TSS: 82 Tons/Year

TP: 32 lbs/Year

**Lucius Jonett, PLA (MN, ND, IA)**

*Landscape Architect, Water Resources / Associate*



[ljonett@wenck.com](mailto:ljonett@wenck.com) | D 763.479.4254 | C 715.207.9850  
1800 Pioneer Creek Center | Maple Plain, MN 55359

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**From:** Lucius N. Jonett  
**Sent:** Tuesday, April 3, 2018 3:36 PM  
**To:** Ben Scharenbroich <bscharenbroich@plymouthmn.gov>  
**Subject:** RE: Elm Creek Stream Restoration Design Progress Report 03-27-2018

Email 1 of 3

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**From:** Ben Scharenbroich <[bscharenbroich@plymouthmn.gov](mailto:bscharenbroich@plymouthmn.gov)>  
**Sent:** Tuesday, April 3, 2018 1:35 PM  
**To:** Lucius N. Jonett <[ljonett@wenck.com](mailto:ljonett@wenck.com)>  
**Subject:** RE: Elm Creek Stream Restoration Design Progress Report 03-27-2018

Excellent! Thanks for working on getting this completed so quickly

**Ben Scharenbroich** | Senior Engineering Technician  
City of Plymouth  
Phone: 763.509.5527

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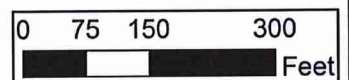
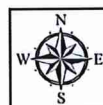
**From:** Lucius N. Jonett [<mailto:ljonett@wenck.com>]  
**Sent:** Tuesday, April 03, 2018 1:31 PM  
**To:** Ben Scharenbroich <[bscharenbroich@plymouthmn.gov](mailto:bscharenbroich@plymouthmn.gov)>  
**Subject:** RE: Elm Creek Stream Restoration Design Progress Report 03-27-2018

Ben,





Elm Creek Stream Restoration  
Reach D  
3850 linear feet





# Technical Memo



**To:** Ben Scharenbroich, City of Plymouth, MN

**From:** Lucius Jonett, Wenck Associates, Inc.  
Ed Matthiesen, Wenck Associates, Inc.

**Date:** April 2, 2018

**Subject:** Elm Creek Stream Restoration (City Project No. 18011) – Basis of Design

## INTRODUCTION

Approximately 0.8 miles of Elm Creek between Highway 55 and Wayzata High School will be restored and stabilized. The work will address phosphorus and suspended solids load reductions through bank and channel stabilization measures. In addition, water quality improvements to address a likely biotic TMDL through improved dissolved oxygen and an improved index of biotic integrity score with in-channel and bank features will be incorporated.

The in-channel restoration methods will be targeted for the geomorphological channel forming flow of the 2-year, 24-hour storm event. The 100-year event will be used to design floodplain stabilization and improvements. However, since the hydrology of the watershed has changed and continues to become more efficient in removing water, the 10-year, 50-year, and 100-year events will also be used to ensure the habitat and channel stabilization methods are durable. The treatments will be strategically placed throughout the reach and will include such practices as the following:

- Grade Control Structures – install cross vanes with boulders and locally available rock to stabilize the channel grade and provide in-stream habitat and re-aeration
- Vegetated Buffer Improvement – implement selective tree thinning in areas to increase grass and forb cover on the streambanks to improve stability
- Toe Protection – stabilize the outer banks of the naturally meandering stream with vegetative riprap, rootwads and log toes for resistive flow protection to redirect stream flow away from the toe.
- Native floodplain vegetation in disturbed areas within the 100-year floodplain to improve soil holding capability with deep rooted vegetation.

The methods described above will reduce downstream effects of sediment resulting from stream bank erosion and will improve the stream corridor for fish and wildlife habitat.

## Desk Top Design

The design process begins with desktop work to calculate flow rates, velocities, shear stress, peak and sustained water surface elevations, and an on-site assessment to identify priority areas and to determine likely causes which contribute to the degradation.

**Ben Scharenbroich**  
 Senior Engineering Technician  
 City of Plymouth  
 April 3, 2018



## **Air Photo Record**

Wenck completed an analysis of historic, georeferenced, aerial photos in Arc GIS from sources including the Minnesota Historical Aerial Photographs Online (MHAPO) service, MnGEO aerial image server from the Minnesota Geospatial Information Office, and the Farm Service Agency (FSA). Photos were available from 1937 to 2016 and were reviewed for an understanding of channel movement, watershed build out and changes in in-coming flow patterns. A map book of aeriels, Appendix A, was assembled with 1 representative aerial per decade, unless there was a distinct change in creek centerline, land development, etc. We can visually determine from the aerial analysis that there has been some natural meander migration, but at a slow rate with enough room in the meander belt to not pose a problem for current homes and infrastructure.

## **Topographic Record**

We attempted to determine if the channel has incised from the earliest recorded channel elevations. Ideally, we would create a channel centerline longitudinal profile from our topographic survey of the project completed in February 2018 and compare that to historic topographic data. The historic data however is too coarse to provide a baseline to answer if the channel is incising. Minnesota LiDAR elevation data is a decade old and only measures surface elevation, not bathymetry of waterbodies and streams. We were able to reference the September 2007 Elm Creek Channel Study by Bonestroo, for some representative cross-section data. The surveyed bed elevation is 94.2'. But without X, Y coordinates there is no certainty to where this cross section is located to compare with our surveyed data. Therefore, the historic record is of limited value in noting channel bed downcutting.

## **FEMA 100-year Elevation**

Wenck was able to get the digitalized version of the 100-year floodplain elevation from the Elm Creek FIRM #27053C0167F data available from the MN DNR. Flood elevations are referenced to the National Geodetic Vertical Datum of 1929 (NGVD 29). Since the data is digital, it was exported to AutoCAD and will be added to the design plans and referenced on the channel cross sections. Since this is a non-detailed study area, the 100-year flood elevation is for reference only. The floodplain data is unmodernized (the reach in question is an unnumbered A zone) and will likely be updated in the next round of floodplain edits.

## **Base Flow Determination**

Wenck used the FEMA Flood Insurance Study summary of discharges to determine estimated 1 and 2-year event flows through Elm Creek. Using log probability paper to extrapolate the peak discharge for the 10%, 2% and 1% annual chance events to the 1 and 2-year event. Wenck estimates the 1 and 2 year the flow rates to be 110 and 140 cfs. This is slightly lower than the Bonestroo report notes at 147cfs for the 1yr and 200cfs for the 2yr. For the purposes of this work we will use 150cfs and 200cfs for the 1 and 2-year events.

**Ben Scharenbroich**  
 Senior Engineering Technician  
 City of Plymouth  
 April 3, 2018



## Channel Hydraulics

Using the baseflow and discharge estimates from the Bonestroo and FEMA reports, we have completed open channel flow and shear stress calculations for different storm frequencies are summarized in the following table for the entire reach.

	Discharge, Q (cfs)	Velocity, V (fps)	Depth of Flow (ft)	Shear Stress (lb/ft <sup>2</sup> )
1-yr	150	4.8	2.4	0.4
2-yr	200	5.3	2.9	0.5
100-yr	245	5.6	3.2	0.6

## Conclusion

Based on the desktop analysis, Wenck has determined that there isn't enough evidence to show that the channel has meandered or downcut enough to warrant raising the channel bed in all or a portion of this reach. This will eliminate the need to complete HEC-RAS modeling and show no-rise in the floodplain elevation as long as the effective cross section of the channel remains the same through our stabilization design.

Based on the desktop analysis, Wenck has also determined that the bank stabilization practices consisting of Class II or II riprap, and root wad and log materials will be stable and resist the estimated channel flow velocities. This is confirmed by experience and observation of the same materials being used and in place for over 3 years on the downstream stabilization project.



CIP -2016-CH-01

## EXHIBIT A

**Elm Creek Watershed Management Commission**  
**Capital Improvement Project Submittal**

*(This submittal will be rated on its completeness and adherence to the goals of the Commission.  
 A second page may be used to provide complete responses.)*

City	CHAMPLIN	
Contact Name	TODD TUOMINEN	
Telephone	763-923-7120	
Email	ttuominen@ci.champlin.mn.us	
Address	11955 Champlin Drive Champlin MN 55316	
Project Name	Mill Pond Rain Gardens	
	1. Is project in Member's CIP? ( <input checked="" type="checkbox"/> ) yes CIP-28	Proposed CIP Year = 2017- <b>2018</b>
	2. Has a feasibility study or an engineering report (circle one) been done for this project? ( <input type="checkbox"/> ) yes ( <input checked="" type="checkbox"/> ) no	
		Amount
	Total Estimated Project Cost	\$400,000
	Estimated Commission Share (up to 25%, not to exceed \$250,000)	\$100,000
	Other Funding Sources (name them)	\$
		\$
	3. What is the scope of the project? <b>Construct Rain Gardens and other BMP's for the area tributary to the Mill Pond.</b>	
	4. What is the purpose of the project? What water resource(s) will be impacted by the project? <b>Improve Water quality in the Mill Pond and Elm Creek.</b>	
	5. What is the anticipated improvement that would result from the project? (Include size of area treated and projected nutrient reduction.) <b>Construction of Rain Garden and other BMP's will provide treatment of storm water for approximately 23 acres that will reduce TP and TSS.</b>	
	6. How does the project contribute to achieving the goals and programs of the Commission? <b>Help meet Commission goals of reducing the reducing TP and TSS BY 75% in the Mill Pond and Elm Creek.</b>	
0/10	7. Does the project result from a regulatory mandate? ( <input type="checkbox"/> ) yes ( <input checked="" type="checkbox"/> ) no How?	
0/10/20	8. Does the project address one or more TMDL requirements? ( <input checked="" type="checkbox"/> ) yes ( <input type="checkbox"/> ) no Which?	
0/10/20	9. Does the project have an educational component? ( <input checked="" type="checkbox"/> ) yes ( <input type="checkbox"/> ) no Describe. <b>Project will have public meetings and provide educational materials on Water Quality, Rain Garden Benefits and Rain Garden Maintenance.</b>	
0/10	10. Do all the LGUs responsible for sharing in the cost of the project agree to go forward with this project? ( <input checked="" type="checkbox"/> ) yes ( <input type="checkbox"/> ) no Identify the LGUs. Champlin and Elm Creek WMC	
10/20	11. Is the project in all the LGUs' CIPs? ( <input checked="" type="checkbox"/> ) yes ( <input type="checkbox"/> ) no	
1-34	(For TAC use) 12. Does project improve water quality? (0-10) 13. Prevent or correct erosion? (0-10) 14. Prevent flooding? (0-5)	15. Promote groundwater recharge? (0-3) 16. Protect and enhance fish and wildlife habitat? (0-3) 17. Improve or create water recreation facilities? (0-3)
TOTAL (poss 114)		Adopted April 11, 2012



**Mill Pond Area Rain Gardens & Storm Sewer Improvements**  
**2018 CIP EC WMC**

**Project Overview**

The existing areas near the Mill Pond were constructed prior to ponding and water quality requirements for storm water runoff. The streets and yards in this area are tributary to Mill Pond and Elm Creek. It is proposed that the catch basins on Ghostly Lane and Elm Creek Circle will be constructed with a sump and baffle to prevent sediments from reaching the Mill Pond. In the long-term, the City will reconstruct storm sewer on Ghostly Lane and Elm Creek Circle to drain to the raingarden/pond. The anticipated benefits include a reduction in rate of flows to the Elm Creek and a reduction in the total phosphorous (TP) and total suspended solids (TSS) tributary to the Mill Pond. The project is scheduled for construction in 2019 and requires permitting for the filling of flood plain and wetland mitigation.

**Construction**

The proposed work includes the repair of storm sewer outlet structures and the construction of a Rain Garden/Pond at the Elm Creek. The Rain Garden/Pond will provide treatment of storm water for the drainage area. It is anticipated that the raingardens will incorporate native plants that are pollinator friendly. Also, the catch basins the Creek will be constructed with a sump and baffle to prevent sediments from reaching the Elm Creek. The future CIP street improvement projects will connect to the new rain garden/pond.

**Funding Review**

The proposed budget for the Rain Garden/Pond improvement is estimated at \$400,000. The City will be required to the balance of the project in the amount of \$300,000. The ECWMC will be responsible for \$100,000 cost share.

# Mill Pond Raingardens

April 3, 2018



1 inch = 94 feet



<b>Storm Labels</b>	Sump Manhole	Private FES
<b>Storm Points</b>	Sump FES	<b>Storm Mains</b>
CB Lead; Catch Basin	Other	Storm Mains
Storm Manhole	Private CB Lead; Catch Basin	Private Storm Mains
FES	Private Storm Manhole	Abandoned Storm Mains
Sump Catch Basin		

Map Powered by DataLink  
from WSB & Associates



## EXHIBIT A

**Elm Creek Watershed Management Commission  
Capital Improvement Project Submittal**

*(This submittal will be rated on its completeness and adherence to the goals of the Commission.  
A second page may be used to provide complete responses.)*

City	CHAMPLIN											
Contact Name	TODD TUOMINEN											
Telephone	763-923-7120											
Email	ttuominen@ci.champlin.mn.us											
Address	11955 Champlin Drive, Champlin MN 55316											
Project Name	<b>ELM CREEK STREAM RESTORATION PHASE III, IMPROVEMENT PROJECT</b>											
	1. Is project in Member's CIP? ( X ) yes ( ) no	Proposed CIP Year = 2018										
	2. Has a feasibility study or an <b>engineering report</b> (circle one) been done for this project? ( X ) yes ( ) no											
	<table border="1"> <thead> <tr> <th></th> <th>Amount</th> </tr> </thead> <tbody> <tr> <td>Total Estimated Project Cost</td> <td>\$400,000</td> </tr> <tr> <td>Estimated Commission Share (up to 25%, not to exceed \$250,000)</td> <td>\$100,000</td> </tr> <tr> <td>Other Funding Sources (name them)</td> <td>\$300,000</td> </tr> <tr> <td></td> <td>\$400,000</td> </tr> </tbody> </table>			Amount	Total Estimated Project Cost	\$400,000	Estimated Commission Share (up to 25%, not to exceed \$250,000)	\$100,000	Other Funding Sources (name them)	\$300,000		\$400,000
	Amount											
Total Estimated Project Cost	\$400,000											
Estimated Commission Share (up to 25%, not to exceed \$250,000)	\$100,000											
Other Funding Sources (name them)	\$300,000											
	\$400,000											
	3. What is the scope of the project? <b>The Elm Creek Stream Restoration Phase III is located directly upstream of the Mill Pond. This phase includes 2,287 linear feet of stream bank restoration of Elm Creek which is located up-gradient of the Mill Pond Design plans have been completed in cooperation with the MNDNR, Elm Creek Management Commission</b>											
	4. What is the purpose of the project? What water resource(s) will be impacted by the project? <b>The proposed Elm Creek Stream improvement will restore stream bank and aquatic habitat installation of habitat structures and restoration of stream bank habitat, removal of excess nutrient laden sediments.</b>											
	5. What is the anticipated improvement that would result from the project? (Include size of area treated and projected nutrient reduction.) <b>Elm Creek is impaired water with low dissolved oxygen, restoring the stream banks and providing habitat structure will reduce downstream sedimentation and provide native habitat improvements including root wads, boulder vanes, toewood, boulder clusters and rock riffles with varied substrate to enhance aquatic species habitat including sensitive species such as Blandings Turtle.</b>											
	6. How does the project contribute to achieving the goals and programs of the Commission? <b>Elm Creek is impaired water with low dissolved oxygen, high TSS and high Total P. The Improvements to the Mill Pond and Elm Creek is part of Champlin's WLA from the Elm Creek TMDL.</b>											
0/10	7. Does the project result from a regulatory mandate? ( X ) yes ( ) no How?											
0/10/20	8. Does the project address one or more TMDL requirements? ( X ) yes ( ) no Which? <b>TSS, TOTAL P, Increases DO.</b>											
0/10/20	9. Does the project have an educational component? ( X ) yes ( ) no Describe. <b>The project will be included in Elm Creek Mill Pond Educational program, which will be coordinated with the Champlin Environmental Resources Commission and area schools.</b>											
0/10	10. Do all the LGUs responsible for sharing in the cost of the project agree to go forward with this project? ( X ) yes ( ) no Identify the LGUs. <b>City of Champlin</b>											
10/20	11. Is the project in all the LGUs' CIPs? ( X ) yes ( ) no											
1-34	(For TAC use) 12. Does project improve water quality? (0-10) 13. Prevent or correct erosion? (0-10)	15. Promote groundwater recharge? (0-3) 16. Protect and enhance fish and wildlife habitat? (0-3)										

## Elm Creek Stream Restoration Phase III, City of Champlin EC WMC 2018 CIP

### **Summary**

Elm Creek Stream Restoration project is a high priority project multiple phase project in cooperation with the City of Champlin, Elm Creek Watershed Management Commission and Hennepin County to restore water resources that within the City of Champlin and the Elm Creek Watershed. The City of Champlin Management Plan developed in 2008 has identified goals for accelerating programs and projects for improved habitat, water quality and flood control through a variety of conservation measures in areas surrounding Champlin Minnesota. Prioritization and implementation of appropriate protection, enhancement and restoration measures on area lands, streams, ditches, rivers, lakes and wetlands within the City of Champlin and Elm Creek Watershed have been accelerated through use of conservation decision making tools which aid in determining high priority projects that are beneficial to the City of Champlin, Elm Creek Watershed and the Upper Mississippi River Watershed. The Elm Creek Habitat Restoration Project is divided into six phases. Phase 1 included replacement of the existing Mill Pond dam in May of 2016. Phase 2 is the Mill Pond aquatic habitat restoration through installation of habitat structures and restoration of deep water habitat refuge lake depths by removal of excess nutrient laden sediments in the three bays of the Mill Pond which is a full funded project proposed for construction in November 2017-February 2018. Phase 3 is a continuation of an existing 3,000 linear feet Elm Creek Watershed District stream restoration project. This phase includes 2,287 linear feet of stream bank restoration of Elm Creek which is located up gradient of and flows through the Mill ponds ultimately into the Mississippi River. Design plans have been completed in cooperation with the MNDNR, Elm Creek Management Commission and Hennepin County.

### **Problem statement**

Elm Creek is impaired water with low dissolved oxygen, restoring the stream banks and providing habitat structure will reduce downstream sedimentation and provide native habitat improvements including root wads, boulder vanes, toe wood, boulder clusters and rock riffles with varied substrate to enhance aquatic species habitat including sensitive species such as Blanding's Turtle.

### **Project objectives**

The riparian areas of the creek will be restored with native planting buffer using both plugs and Native seeding that will filter sediments and nutrients from direct runoff. Our current water plan Specifically identifies goals for accelerating projects for improved habitat, water quality and flood control. The project allows the City of Champlin to meet these goals and open opportunities for the public that includes recreation, fishing and educational experiences.



**Elm Creek Stream****Methods**

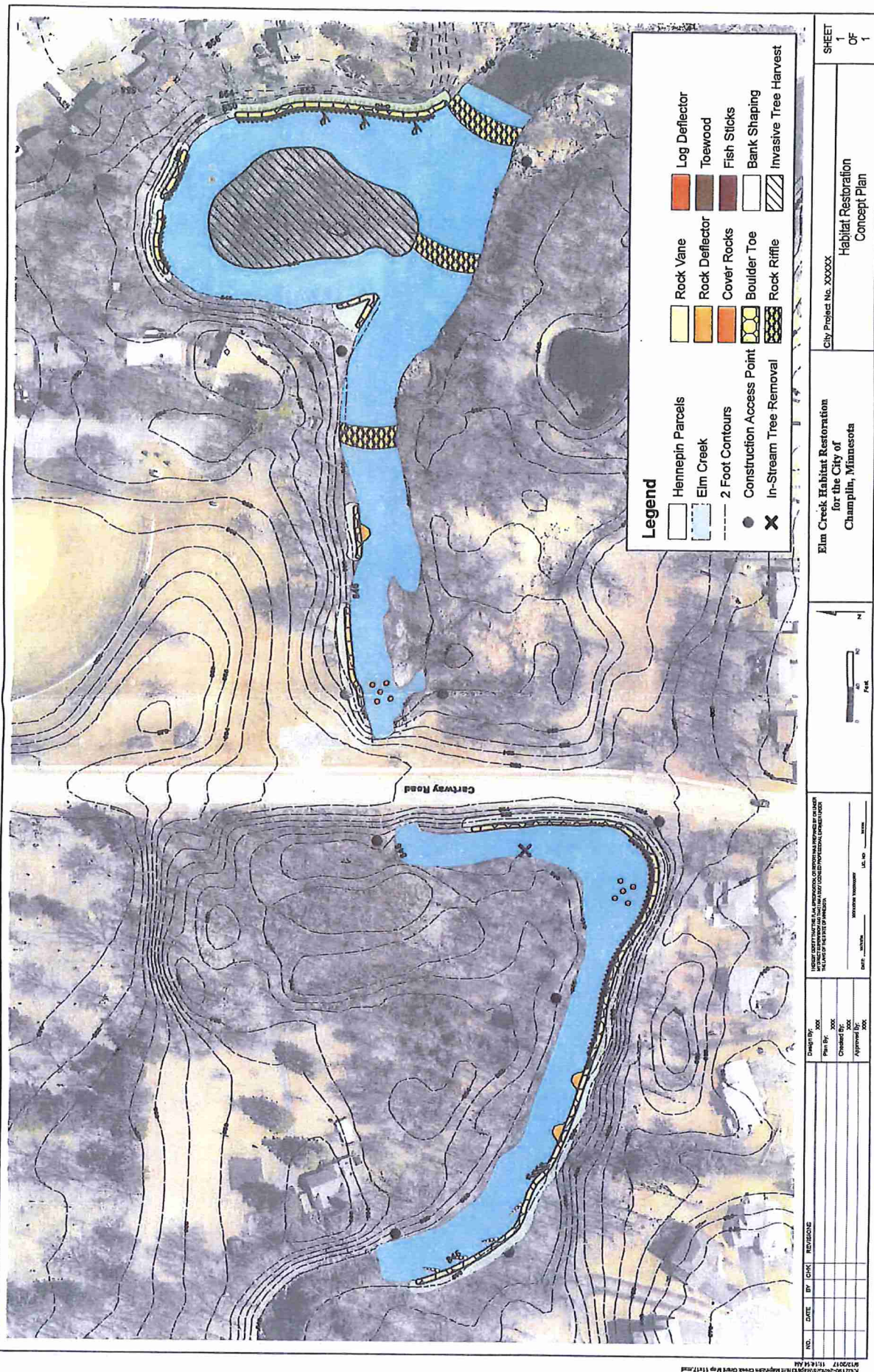
In preparing the Habitat Restoration Plan, the City of Champlin utilized all available data which includes hydrologic assessments and completed field surveys of Elm Creek Phase 3 project based on standards in the Minnesota Department of Natural Resources (MNDNR) Fisheries Stream Survey Manual, Rosgen Channel Characterization Information relative to topography was obtained from MNDNR LiDAR data generating one foot elevation contours from Digital Elevation Models (DEM), topographic contour data was ground-truthed by documenting existing stream conditions. This funding request includes permit requirements, construction supervision, costs for materials, construction and installation services. Our experience in completing previous phases of habitat restoration projects we have effectively reduced costs on the project, achieved overall project goals and allows effectively efficient project completion schedule.

**Experience / Abilities**

The City of Champlin is successful in completing projects that improve the watershed related to urban and rural impacts. Our participation from volunteer efforts is measured by the total number of participants reached through outreach efforts. The City of Champlin has been successful in receiving grant funds for various programs. Some of these grant funds related to previous phases of the project include clean water grants, flood hazard mitigation grants, LCCMR Grants and State of MN Bonding Dollars.

**Funding Review**

The proposed budget for the improvement is estimated at \$400,000. It is anticipated that the EC WMC will fund 25% cost share (\$100,000). The City has been awarded a \$200,000 grant from the DRN CPL Grant Program.





## EXHIBIT A

**Elm Creek Watershed Management Commission  
Capital Improvement Project Submittal**

*(This submittal will be rated on its completeness and adherence to the goals of the Commission.  
A second page may be used to provide complete responses.)*

City	CHAMPLIN	
Contact Name	TODD TUOMINEN	
Telephone	763-923-7120	
Email	ttuominen@ci.champlin.mn.us	
Address	11955 Champlin Drive, Champlin MN 55316	
Project Name	DOWNS ROAD TRAIL RAINGARDEN IMPROVEMENT PROJECT	
	1. Is project in Member's CIP? ( X ) yes ( ) no	Proposed CIP Year = 2018
	2. Has a feasibility study or an <b>engineering report</b> (circle one) been done for this project? ( X ) yes ( ) no	
		Amount
	Total Estimated Project Cost	\$300,000
	Estimated Commission Share (up to 25%, not to exceed \$250,000)	\$100,000
	Other Funding Sources (name them)	\$200,000
		\$300,000
	3. What is the scope of the project? <b>Construct Rain Garden and other BMP's for areas tributary to Mill Pond /Elm Creek (directly upstream-adjacent to the Mill Pond)</b>	
	4. What is the purpose of the project? What water resource(s) will be impacted by the project? <b>The proposed raingarden will improve water quality in the Mill Pond and Elm Creek.</b>	
	5. What is the anticipated improvement that would result from the project? (Include size of area treated and projected nutrient reduction.) <b>Elm Creek is impaired water with low dissolved oxygen, excess TSS AND Total P. Project will reduce sedimentation and total P going into Mill Pond. Project will help improve conditions for aquatic species habitat including sensitive species such as Blandings Turtle.</b>	
	6. How does the project contribute to achieving the goals and programs of the Commission? <b>Elm Creek is Impaired water with low dissolved oxygen, high TSS and high Total P. The Improvements to the Mill Pond and Elm Creek is part of Champlin's WLA from the Elm Creek TMDL.</b>	
0/10	7. Does the project result from a regulatory mandate? ( X ) yes ( ) no How?	
0/10/20	8. Does the project address one or more TMDL requirements? ( X ) yes ( ) no Which? <b>TSS, TOTAL P, Increases DO.</b>	
0/10/20	9. Does the project have an educational component? ( X ) yes ( ) no Describe. <b>The project will be included in Elm Creek Mill Pond Educational program, which will be coordinated with the Champlin Environmental Resources Commission and area schools.</b>	
0/10	10. Do all the LGUs responsible for sharing in the cost of the project agree to go forward with this project? ( X ) yes ( ) no Identify the LGUs. <b>City of Champlin</b>	
10/20	11. Is the project in all the LGUs' CIPs? ( X ) yes ( ) no	
1-34	(For TAC use)	
	12. Does project improve water quality? (0-10)	15. Promote groundwater recharge? (0-3)
	13. Prevent or correct erosion? (0-10)	16. Protect and enhance fish and wildlife habitat? (0-3)
	14. Prevent flooding? (0-5)	17. Improve or create water recreation facilities? (0-3)
TOTAL (poss 114)		Adopted April 11, 2012

## **Downs Road Area Rain Garden and Storm Sewer Improvements**

### **Project Overview**

The areas north of the Mill Pond were constructed prior to ponding and water quality requirements for storm water runoff. City staff has identified drainage and erosion issues on Down Road Avenue adjacent to the Elm Creek. The drainage area includes Down Road and the existing Parking lot of the Champlin Methodist Church. The anticipated benefits include a reduction in rate of flows to the Elm Creek and a reduction in the total phosphorous (TP) and total suspended solids (TSS) tributary to the Mill Pond. Also, the Phase I pond will serve as the compensatory storage for floodplain fill for fill areas required for the project. The Trail/Access Road project is scheduled for construction in 2018 and requires permitting for the filling of flood plain and wetland mitigation.

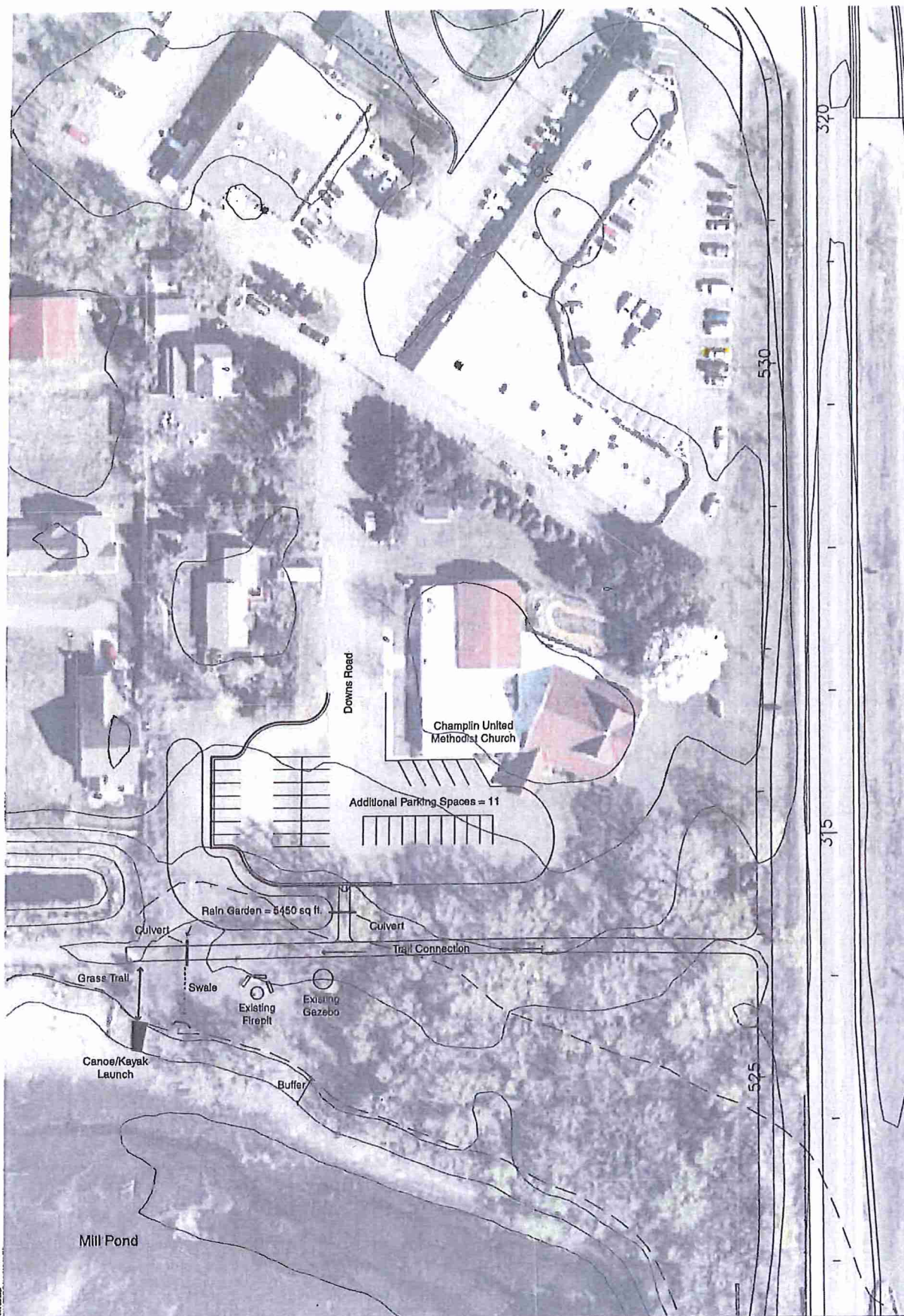
### **Construction**

The proposed work includes the replacement of storm outlet and the construction of a Rain Garden/Pond on the Church property. The City is negotiating project easements. The Rain Garden/Pond will provide treatment of storm water for the existing parking lot and Down Road. The storm sewer is expected to be modified and treated in raingarden and routed through an adjacent development pond. Downs road will be reconstructed in the future improvement projects and the storm sewer will be connected to the new rain garden/pond.

### **Funding Review**

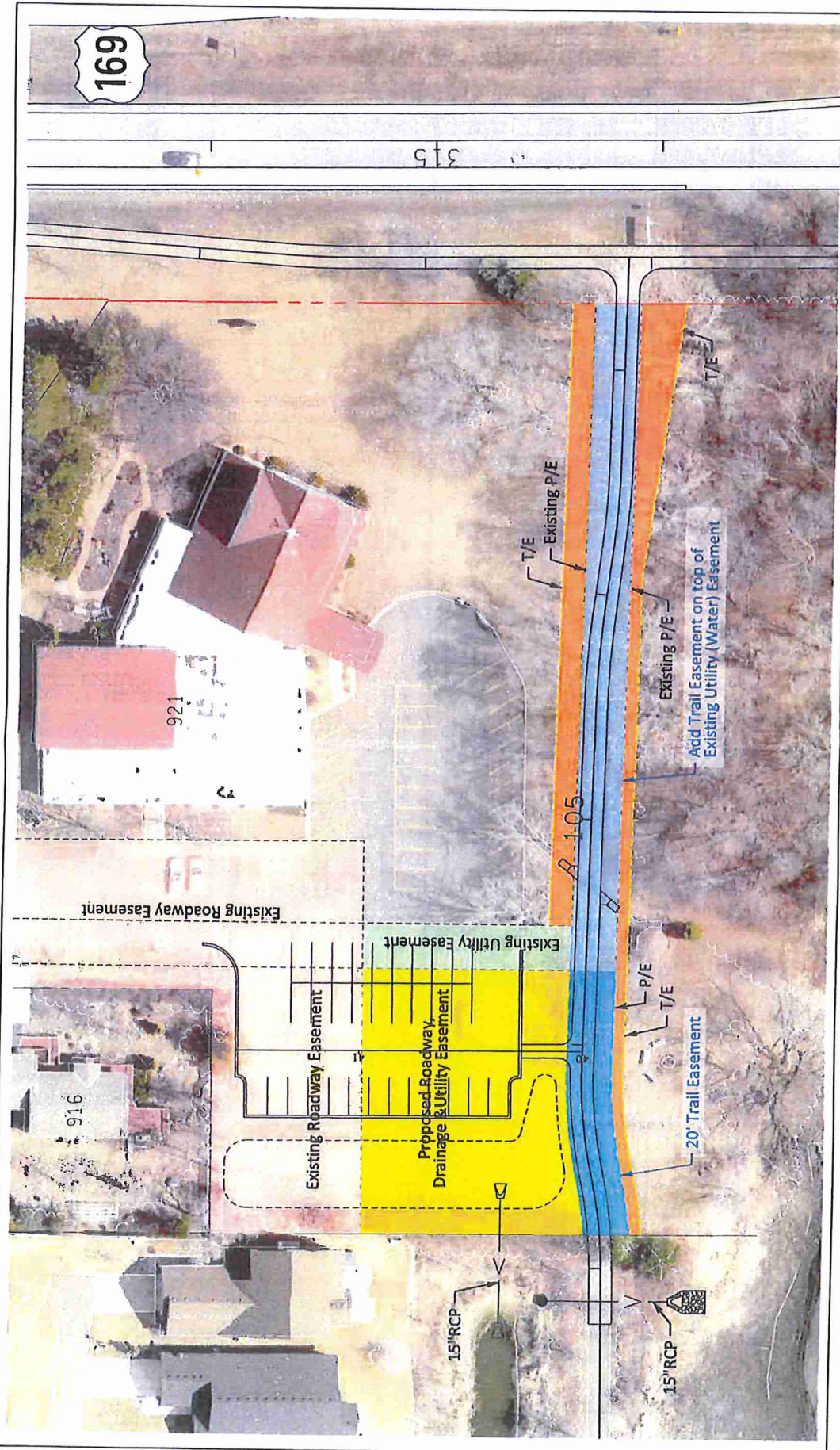
The proposed budget for the Rain Garden/Pond improvement is estimated at \$300,000. The City will fund \$225,000 for the project. And it is proposed that the Elm Creek WMC fund \$75,000. The EC WMC CIP has identified 12,500 (2018 CIP) and \$62,500 (2019 CIP).







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A:\0287-000\CD\Exhibits\0287-000 Parking Lot Easement.dgn



**Elm Creek Watershed Management Commission  
Recommended Livestock Management Policy**

1. The primary goal of this policy is to reduce phosphorus runoff from livestock-associated facilities.
2. This policy applies to new facilities or the expansion of existing facilities based on the City's Conditional Use Permit (CUP) provisions for livestock.
3. Feedlots and manure storage areas are prohibited within the shoreland of any lake , perennial stream , intermittent stream , or protected wetland without a CUP.
  - a. In the case of feedlots and manure storage areas for which a CUP is required, the CUP shall only be issued if a Nutrient and Management Plan (NMP) specific to that operation, and which has been prepared and implemented within the timeframe specified by the City, is in place.
  - b. The NMP must meet the standards of the University of Minnesota Extension Service or the United States Department of Agriculture Natural Resources and Conservation Services (NRCS).
4. **Definitions.**
  - a. **Animal Density.** Allowable animal density shall be based on the net area of the parcel that can be grazed in its entirety. This area excludes wetlands, woodland, farmsteads, feedlots, parking lots, and other areas where grazing cannot or should not occur.
  - b. **Animal Feedlot.** A lot or building or combination of lots and buildings intended for the confined feeding, breeding, raising or holding of animals and specifically designed as a confinement area in which manure may accumulate, or where the concentration of animals is such that a vegetative cover cannot be maintained within the enclosure. Open lots used for the feeding and rearing of poultry (poultry ranges) shall be considered to be animal feedlots. Manure storage areas off the site of the feedlot are considered as feedlots.
  - c. **Animal Unit.** The definition of "animal unit" shall be determined by the City. The City may also refer to Minnesota Rules part 7020.0300.
  - d. **Conditional use.** Land use or development as defined by ordinance that would not be appropriate generally but may be allowed with appropriate restrictions as provided by official controls upon a finding that certain conditions as detailed in the zoning ordinance exist, the use or development conforms to the comprehensive land use plan of the community, and the use is compatible with the existing neighborhood.
  - e. **Manure storage facility.** Any site or area specifically designed and/or constructed for the purpose of storage or holding of animal waste and manure. This includes any storage facility previously designed and installed meeting the NRCS Technical Guidelines current at the time of installation, any commercial-prefabricated storage facility, concrete slabs, earthen dugouts, dikes or any other area intended for the storage of animal manure, no matter how small that accumulation may be or how long the manure may be stored.

**f. Pasture** - Areas where grass or other growing plants are used for grazing and where the concentration of animals is such that a vegetative cover is maintained during the growing season except in the immediate vicinity of temporary supplemental feeding or watering devices. Those areas of supplemental feeding or watering devices within a pasture do not constitute a feedlot.

**g. Shoreland.** Land located within 1,000 feet from the ordinary high water level of a lake, pond, or flowage; 300 feet from a river or stream; or the landward extent of a floodplain designated by ordinance on a river or stream, whichever is greater.

**5. Exhibits.**

The following documents are attached and may be reviewed for content.

- a. Exhibit A.** 80.10 Manure Management Policy, City of Medina
- b. Exhibit B.** Manure Management-Related Ordinances, City of Medina.
- c. Exhibit C.** Ordinance 2016-02 Amending City Code Section 152.071(G) as it pertains to livestock and domestic farm animals, City of Greenfield.

**CITY OF GREENFIELD  
ORDINANCE NO. 2016-02**

**AN ORDINANCE AMENDING CITY CODE SECTION 152.071 AS IT RELATES TO  
PERFORMANCE STANDARDS FOR RESIDENTIAL DISTRICTS**

**The City Council of the City of Greenfield, Minnesota does ordain:**

That Section 152.071(G) Livestock and domestic farm animals, be amended as follows:

**(G) Livestock and domestic farm animals.**

- (1) Applicability. Provisions of the ordinance codified herein that apply to the owner of animals apply equally to any person having the custody or possession of that animal.
- (2) Definitions. For the purpose of this section, the following definitions shall apply unless the context clearly indicates or requires a different meaning.
  - (a) ANIMAL UNIT. A unit of measure comparing the size of domestic farm animals as follows:

Animal	Animal Unit
One cow, llama, horse, ostrich or similar animal	1.0
One hog, sheep, goat, alpaca or similar animal	.5
One domestic fowl or similar animal	.05

- (b) DOMESTIC FARM ANIMAL/LIVESTOCK. Cattle, hogs, horses, bees, sheep, goats, chickens and other animals and fowl commonly kept for food production.
    - (c) AT-LARGE. Off the premises of the owner or person responsible for the livestock.
- (3) General provisions. The following shall apply to § 152.056 Agricultural Preserve and § 152.055 Rural Residential Zoning Districts:

- (a) Where the principal use is a single-family dwelling, livestock at a maximum density of 1 animal units per the first 1-1/2 acres of land and 1 additional animal unit per each additional acre of land thereafter. Property owners shall be responsible for management and proper disposal of animal waste. This shall include:
1. All regulations imposed by the Minnesota Pollution Control Agency (MPCA) relating to the keeping of livestock or domestic farm animals shall be adhered to, and such regulations shall be considered the minimum safeguard necessary to prevent pollution of natural sensitive areas or the creation of a health hazard;
  2. Land application of manure will need to be compliant with the Minn. Rules 7020.2225;
  - ~~3. Keeping from wells and septic systems. Keeping animal waste storage or composting of areas a minimum of 75 feet away from wells and primary and secondary septic systems; and~~
  3. Structures or buildings used to house animals shall meet all applicable setback requirements for accessory structures as stated in City Code Chapter 152.
  4. Concrete manure containment areas or composting areas must be constructed, the design of which shall be consistent the recommendations of the University of Minnesota Extension Service, and setbacks in compliance with those stated for accessory structures in City Code Chapter 152.

(a) The site shall install runoff retention and vegetative infiltration systems, consistent with the recommendations of the University of Minnesota Extension Service, down slope from the manure containment area.

(b) Diligent effort shall be made to prevent the cribbing of trees in or near pastures, and efforts to maintain grass in the pastures by limiting use thereof as appropriate and by providing supplemental feed to prevent over grazing by instituting a pasture management program in accordance with the recommendation of the University of Minnesota Extension Service.



5. Violations.

- a. Complaint process. Any resident who believes there is property located within the corporate limits of the city which had excessive odors or other nuisances related to manure in violation of this section, shall make a ~~written complaint signed, dated and filed~~ complaint with the City Administrator-Clerk or Minnesota Pollution Control Agency.
- ~~b. Notice of violations. The Mayor or his or her authorized designee shall make an inspection within 3 days of a complaint location to determine if a violation of this section has occurred. Written notification in the form of a destruction order shall be forwarded to the property owner. The written notice shall be sent by certified mail, return receipt requested. Within 10 days after the mailing of the notice, the property owner shall remove the manure. The city may cause the manure to be removed following the 10 day period.~~
- ~~c. Appeals. The property owner may appeal by filing written notice of objection with the City Administrator-Clerk within the 5 days of the notice. It is the property owner's responsibility to demonstrate that the matter in question is not in violation of this section and should not be subject to destruction under this section.~~
- ~~d. Liability. Property owners shall be liable for all costs of removal of noxious manure. The city shall bill the property owner for employees hourly rate, equipment and supplies that may be used. The City Council shall assess the property owner any amount unpaid 90 days after the date of the invoice.~~

Passed by the City Council this 3<sup>rd</sup> day of May, 2016.

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Mayor Brad Johnson

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Attest: Bonnie Ritter, City Administrator-Clerk

Published in the official newspaper on 19<sup>th</sup> day of May, 2016.  
Effective the 20<sup>th</sup> day of May, 2016.

## 80.10 – Manure Management Policy

### Purpose:

To prevent large manure stockpiles from becoming a public nuisance and to proactively protect the natural environment and neighboring properties pursuant to City Code Section 825.15: *“No... air pollution, liquid, solid wastes...or other such adverse influences shall be permitted in any district that will in any way have an objectionable effect upon any property.”*

### Policy:

- 1) The City shall require manure best management practices (BMPs) on the approval of conditional use permits (CUP) or other land use applications which indicates the stabling or housing of animals. The required BMPs shall be based on resources available from the University of Minnesota Extension Service and Minnesota Pollution Control Agency.
- 2) The City shall inspect the manure management practices of the following properties a minimum of one time per year:
  - a) A property for which a CUP has been approved subject to clause (1) of this policy;
  - b) A property on which a commercial horse facility is operated;
  - c) A property which, because of past concerns or violations, the City determines should require annual inspections.
- 3) Owners of property which are inspected annually shall maintain records of manure disposal and provide such documentation upon request.
- 4) The City may require the implementation of manure BMPs on a property which is not subject to a CUP under clause (1) of this policy.
- 5) The City shall take necessary enforcement actions as provided by ordinance or procedure should a property be determined to be in violation of the manure BMPs required as part of an approved CUP, or are otherwise determined to constitute a public nuisance. These actions may include, but are not limited to, the following: corrective orders, misdemeanor citation, or revocation of conditional use permit approval. If violations are not corrected within a timely matter, and the City determines that the violation threatens the public health or safety, the City Council take necessary actions to abate the nuisance and certify the costs to the subject property pursuant to City Code section 330.25.



### **Manure Management-Related Ordinances – City of Medina**

- 1) Animal Density standards (2 grazable acres for first animal unit and 1 grazable acre per animal unit thereafter). The density standards allow additional animals with a CUP if best management practices are followed.
- 2) Commercial horse facilities are held to the following standard by CUP: the subject site shall construct a concrete manure containment or composting area, the design of which shall be consistent with the recommendations of the University of Minnesota Extension Service. Owners of a feed lot shall provide a schedule for removal of manure or compost from affected sites, subject to the approval by the City.

# Technical Memo



Item OVI-1

Responsive partner.  
Exceptional outcomes.

**To:** Shingle Creek WMO Commissioners

**From:** Ed Matthiesen, P.E.  
Diane Spector

**Date:** April 6, 2018

**Subject:** Submersed Aquatic Vegetation (SAV) Management Policy

## Recommended Commission Action

Adopt the proposed SAV Management Policy.

The Commission and the Technical Advisory Committee (TAC) have several times discussed a proposed Submersed Aquatic Vegetation (SAV) Management Policy (attached). The purpose of the policy is to set forth the conditions under which the Commission would lead and fund the treatment of aquatic invasive species.

In discussions with some other WMOs and cities that have undertaken internal load projects, we find that post-construction treatment of invasive species is common, with management extending to a point where the AIS coverage is under control. This may take two to three years on many lakes, and five years or more on lakes that are highly infested. In the latter case, the first few years are often more extensive treatment, followed by a few years of tapering down to spot treatment. For example, Riley-Purgatory-Bluff Creek has some lakes with initial treatment costing \$20-25,000, followed by a few years of \$8-10,000 of less extensive treatment.

For the most part WMOs and cities have limited participation in managing native species for access and recreation, which is primarily left to lake associations or individual property owners. The DNR has informed us that there are currently nine Lake Improvement Districts in the Metro area, five of which were formed for aquatic vegetation management/AIS management.

Point #6 of the draft SAV policy includes the statement “ The Commission will not participate financially in the cost of SAV management performed for recreation and access purposes.” In researching SAV management by other WMOs, we learned that the Bassett Creek management plan includes the following policy:

#79: The BCWMC will support and collaborate with other entities (e.g., agencies, lake association, cities, counties) to manage and prevent the spread of aquatic invasive species; BCWMC services may include point-intercept surveys of aquatic vegetation, feasibility studies, technical analysis, education, exploring funding options, and applying for grants. The BCWMC will not manage increased growths of native aquatic vegetation resulting from improved water quality.

We think the underlined statement would be a useful addition to point #6 to very clearly state that the Commission will not manage native vegetation (even if the property owners think it is a nuisance) and will not manage SAV strictly for recreation or access. Lakeshore property owners wanting to clear their shoreline for swimming or boat access can continue to exercise their SAV management rights directly with the DNR. That statement has been added to #6 on the attached SAV Policy.

### **Project and Ongoing Costs**

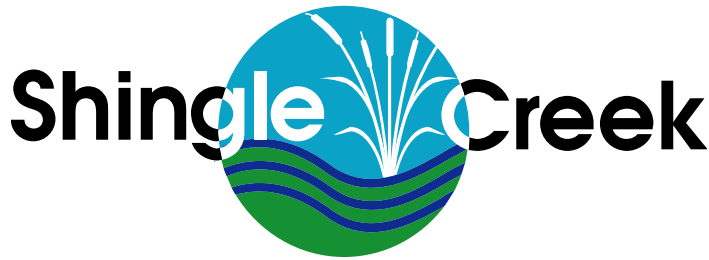
The cost of SAV management was included in the Bass and Pomerleau Lakes Project cost and funding, but was not included in the Twin Lake Carp Management Project cost and funding. The estimated cost of SAV management on Upper Twin is \$30,000-40,000. There will likely be some savings in the fish barrier part of the project budget that can be reallocated to SAV management.

The closed projects account can also be tapped for some project costs. It will have an estimated \$50,000 of available balance at the conclusion of the 2017 financial audit. Any use of that fund will be soon replenished: within the next few years two capital projects will be closed out with significant contributions to the closed projects account. An estimated \$25,000 will be available from the Biochar project (one fewer pond than expected constructed) and \$50,000 from the Bass and Pomerleau Alum Treatment project (levied for a larger project, also received an unanticipated Clean Water Fund grant.)

As part of future budget discussions, the Commission may wish to allocate an annual amount for ongoing spot treatments, but that may not be necessary for at least a few years, since the initial costs will be borne by project funds.

### **Recommendation**

The TAC considered the SAV Management Policy with the addition of the Bassett Creek language at its March 29, 2018 meeting. The TAC and staff recommend that the Commission adopt the attached policy.



## Watershed Management Commission

3235 Fernbrook Lane N • Plymouth, MN 55447  
Phone (763) 553-1144 • Fax (763) 553-9326

[www.shinglecreek.org](http://www.shinglecreek.org)

### Submersed Aquatic Vegetation (SAV) Management Policy

April 12, 2018

The Shingle Creek Watershed Management Commission works in partnership with its member cities, Hennepin County, MnDOT, property owners, and other parties to protect and improve lakes, wetlands, and streams in the watershed. The Commission's goal is to meet State of Minnesota water quality standards and to promote a healthy and diverse community of native aquatic organisms and vegetation. To achieve that goal the Commission may periodically partner with one or more member cities to undertake lake internal load management projects, such as alum treatments or rough fish management. As lake water clarity improves, both native and non-native submersed aquatic vegetation (SAV) may become more abundant. This policy sets forth the standards and actions the Commission will take to assist in managing SAV.

1. Prior to undertaking any internal load improvement projects, the Commission will obtain spring and late summer SAV surveys, and compile all known information about SAV and SAV management for the previous five years.
2. Commission staff will review SAV data with the DNR to determine likely SAV response to internal load reductions and SAV management options.
3. On lakes with an existing infestation of non-native invasive curly-leaf pond weed and/or Eurasian water milfoil, the Commission will undertake chemical or mechanical treatment for up to three years as necessary to address the non-native AIS infestation. The Commission will incur all costs of this treatment, including vegetation surveys, treatment delineations, and permits and variances.
4. On lakes with non-nuisance infestation of non-native invasive curly-leaf pond weed and/or Eurasian water milfoil, the Commission may provide spot treatment to prevent spread of the invasive species for up to three years or as necessary to control the infestation. The Commission will incur all costs of this treatment, including vegetation surveys, treatment delineations, and permits.
5. The Commission will continue to undertake routine SAV surveys on its regular, published schedule and may provide spot treatment of AIS as necessary.
6. The Commission will not participate financially in the cost of SAV management performed for recreation and access purposes. The Commission will not manage increased growths of native aquatic vegetation resulting from improved water quality. Lakeshore property owners may at any time undertake shoreline SAV management in accordance with DNR regulations at their own expense.
7. At the request of a majority of lakeshore owners, and at their expense, the Commission may act as fiscal and contracting agent to provide SAV management for recreation and access purposes. If the lakeshore owners or lake association wish to form a Lake Improvement District, the Commission may provide technical assistance and liaison with Hennepin County and the DNR.