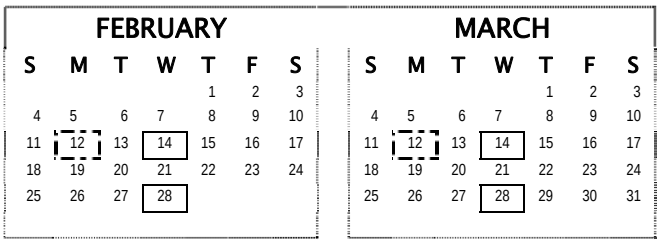
RCWD
RICE CREEK WATERSHED DISTRICT



RCWD Board of Managers Workshop

Monday, February 12, 2018, 1:00 p.m.

Rice Creek Watershed District Conference Room
4325 Pheasant Ridge Drive NE, Suite 611, Blaine, Minnesota

Agenda

NOTE: The District is testing an effort to make the Board of Managers meeting more widely accessible to the public. If you are interested in listening to this meeting by phone, please contact Theresa Stasica at tstasica@ricecreek.org or 763-398-3070 by 4:30 p.m., February 9, 2018.

Items for Discussion (times are estimates only)

1:00 Discuss Annual Review of Treatment of Metro Shooting and Trost Settlements in District Financial Reports.

1:20 Presentation on Browns Preserve Wetland Credit Status.

2:00 Update and Discussion on Boundary Investigation per 1/24/2018 Board Meeting.

2:20 Discussion on Draft Legislative Communication.

2:50 Discussion on BWSR Watershed Based Funding for Metro Area.

3:20 Update on Local Water Planning Reviews.

3:40 Initial Discussion on Urban Stormwater Remediation (USWR) Cost-Share Applications.

4:10 Update on Hansen Park Project.

1:00 Discuss Annual Review of Treatment of Metro Shooting and Trost Settlements in District Financial Reports.

smith partners PLLP

400 Second Avenue South
Suite 1200
Minneapolis, MN 55401
(612) 344-1400 tel

www.smithpartners.com

MEMORANDUM

TO: Rice Creek Watershed District Board of Managers

FROM: Louis Smith

RE: 2017 Financial Report
Metro Shooting/Trost Settlements

DATE: February 7, 2018

In 2005, the District entered into settlements with Blaine landowners Metro Shooting Center Corp. and John Trost with respect to those parties' claims concerning the District's management of Anoka County Ditch 53-62. Under these settlements, in addition to paying each landowner a present sum, the District committed to supply wetland replacement credits necessary for each landowner to assemble a specified contiguous upland footprint for development.

In late 2015, you were advised by the District auditor and attorney as to the circumstances under which this contingent liability should be identified in the District's annual financial reports. We supplied a memorandum dated December 2, 2015, which is attached to this memorandum. In the interest of public accountability, you waived the attorney-client privilege for the memo.

In the memo, we summarized our guidance as follows:

> If it is reasonably possible that the District's obligation will result in a liability in the future, then the liability should be disclosed in its financial reports. If the amount of the liability cannot be reasonably estimated, the disclosure should state that an estimate of the liability cannot be made. In making these determinations, the District may be guided by the advice of its engineer, counsel and auditor. When assumed in 2005, the Metro Shooting and Trost liabilities were subject to a number of uncertainties, and that remains the case. It appears that the collective judgment to date has been that the various uncertainties render the triggering of this potential contingent future liability remote, and therefore not a matter that is required to be disclosed in the annual financial report.

At your December 7, 2015 workshop, you concurred by majority vote in the finding that this contingent liability is remote and therefore not to be disclosed in the annual financial report. At your February 8, 2016 workshop, again by a majority vote, you affirmed this finding for the purpose of the 2015 financial report. At the March 9, 2016 workshop, you passed a motion unanimously "to annually review the liability of the Metro Shooting/Trost contingent liability in February of every year and take a formal vote at the Board meeting as to the remoteness of the liability."

For the 2016 financial report, the Board of Managers adopted the following motion on February 22, 2017:

> ***That the Board of Managers finds the triggering of the potential contingent future liability to be remote, but nevertheless concludes that it should be referenced in the 2016 financial report as follows, or as modified in the auditor's judgment:***
>
> > ***In settlement agreements approved in 2005, the District committed that when development occurs on two tracts then owned by the Metro Shooting Center and Trost, the application of the District's wetland rules will not have the result of affording the owner for the Metro Shooting parcel fewer than 100 contiguous upland acres for development, and the owner of the Trost parcel no fewer than 45 such acres. If additional wetland replacement is required to allow for consideration of the stated acreage, the District will bear the cost of that replacement. The District is unable either to determine as this time the likelihood of this potential future contingent liability, or to estimate the District expense if and when the liability should arise.***

For the purpose of the 2017 financial report, the District Administrator, pursuant to paragraph (5), American Bar Association Statement of Policy Regarding Lawyers' Responses to Auditors' Requests for Information (1999), has asked us to include in our audit opinion letter an opinion as to the remoteness of this potential contingent future liability. For that purpose, we made inquiry of the District's permit coordinator (Nick Tomczik) and engineer (Chris Otterness) as to any change in circumstances that may cause the liability now to be less remote so as to alter the District's treatment of it in the financial report. Specifically, we asked as to their knowledge regarding:

1. Any facts (including permitting inquiries to the District or City of Blaine) or statements evidencing a specific intent to initiate development of either tract in the foreseeable future.

2. Any change in District Rule F/Minnesota Wetland Conservation Act or U.S. Army Corps of Engineers Section 404 requirements as concerns wetland impact sequencing, calculation of replacement requirements, or replacement credit location.

3. Any new information regarding the hydrology or soils on either tract as would be relevant to the geophysical suitability of a development footprint.

4. Any new regulatory wetland boundary data for either tract, or new field information suggesting a change in the regulatory wetland boundary.

5. Any new Federal Emergency Management Agency/regulatory floodplain affecting either tract.

We do not anticipate any change or new information in response to this inquiry. Accordingly, our opinion in our audit opinion letter for the 2017 financial report remains the same as for the 2016

report, namely that when assumed in 2005, the Metro Shooting and Trost liabilities were subject to a number of uncertainties, and that remains the case. It appears that the collective judgment to date has been that the various uncertainties render the triggering of this potential contingent future liability remote. In a memorandum dated December 2, 2015, we reviewed available information from the District engineer, and stated that there were a number sources of uncertainty at the time of settlement, and that they remained sources of uncertainty as of December 2015. Our inquiry to the District Engineer and staff have confirmed that there has been no change in the facts or circumstances relevant to this issue; we have not otherwise received and are not aware of any additional information that would alter this assessment, or otherwise suggest any change in circumstances that would make the realization of the potential liability more likely.

We would be pleased to answer any questions you may have regarding this matter.

c: Phil Belfiori, RCWD Administrator

1:20 Presentation on Browns Preserve Wetland Credit Status.

PRELIMINARY

Feet 0 212.5 425

UPL BUFFER

Releve Point 13

43 # 42 # 41 # 7 # 11 # 35 # 12 # 1 # 13 # 14 # 36 # 16 # 37 # 17 # 8

Releve Point 19 Releve Point 18 Releve Point 14 Releve Point 11

32 # 30 # 21 # 33 # 20 # 40 # 28 # 34 # 10 # 15 # 26 # 39 # 22 # 9 # 23 # 27 # 19 # 29 # 25 # 38 # 31 # 18 # 4 # 24 # 6 # 2 # 5

Releve Point 17 Releve Point 10 Releve Point 15 Releve Point 12 Releve Point 16 Releve Point 9 Releve Point 8 Releve Point 7 Releve Point 6 Releve Point 5 Releve Point 4 Releve Point 3 Releve Point 2 Releve Point 1

2017 Total Credit: 14.2163 acres
RCWD: 8.9071 acres
D. Hair: 5.3092 acres

Browns Preserve Wetland Restoration

Scale:	Drawn by:	Checked by:	Project No.:	Date:	Sheet:
AS SHOWN	EDB		5555-226	2-22-16	1 of 1

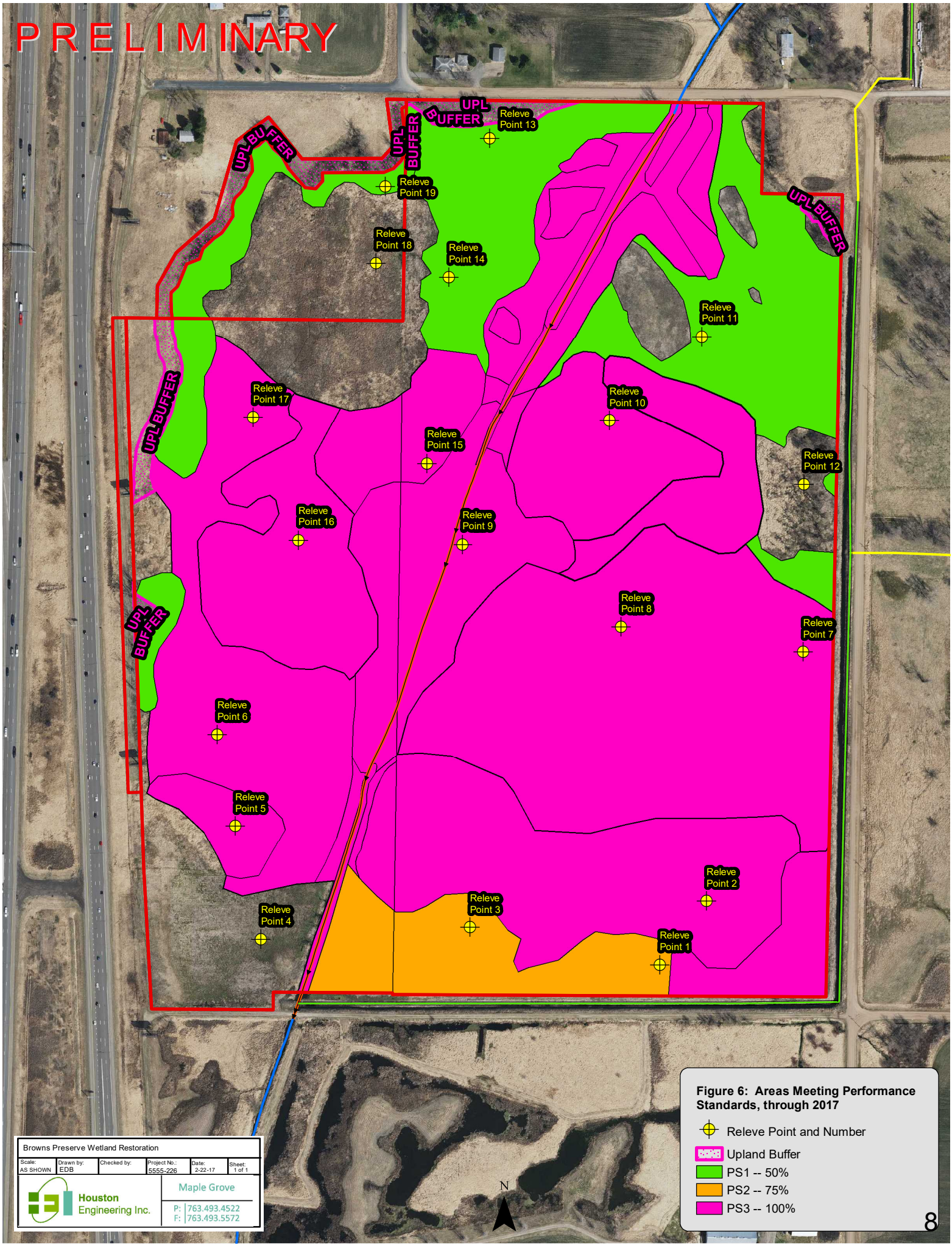
Houston Engineering Inc.
Maple Grove
P: 763.493.4522
F: 763.493.5572

Figure 4: Areas Meeting Performance Standards 2017, Plant Community Polygons

- Conservation Easement
- Releve Point and Number

2017 Deposit

- PS1 - 50% credit
- PS2 - 75% credit
- PS3 - 100% credit
- Upland Buffer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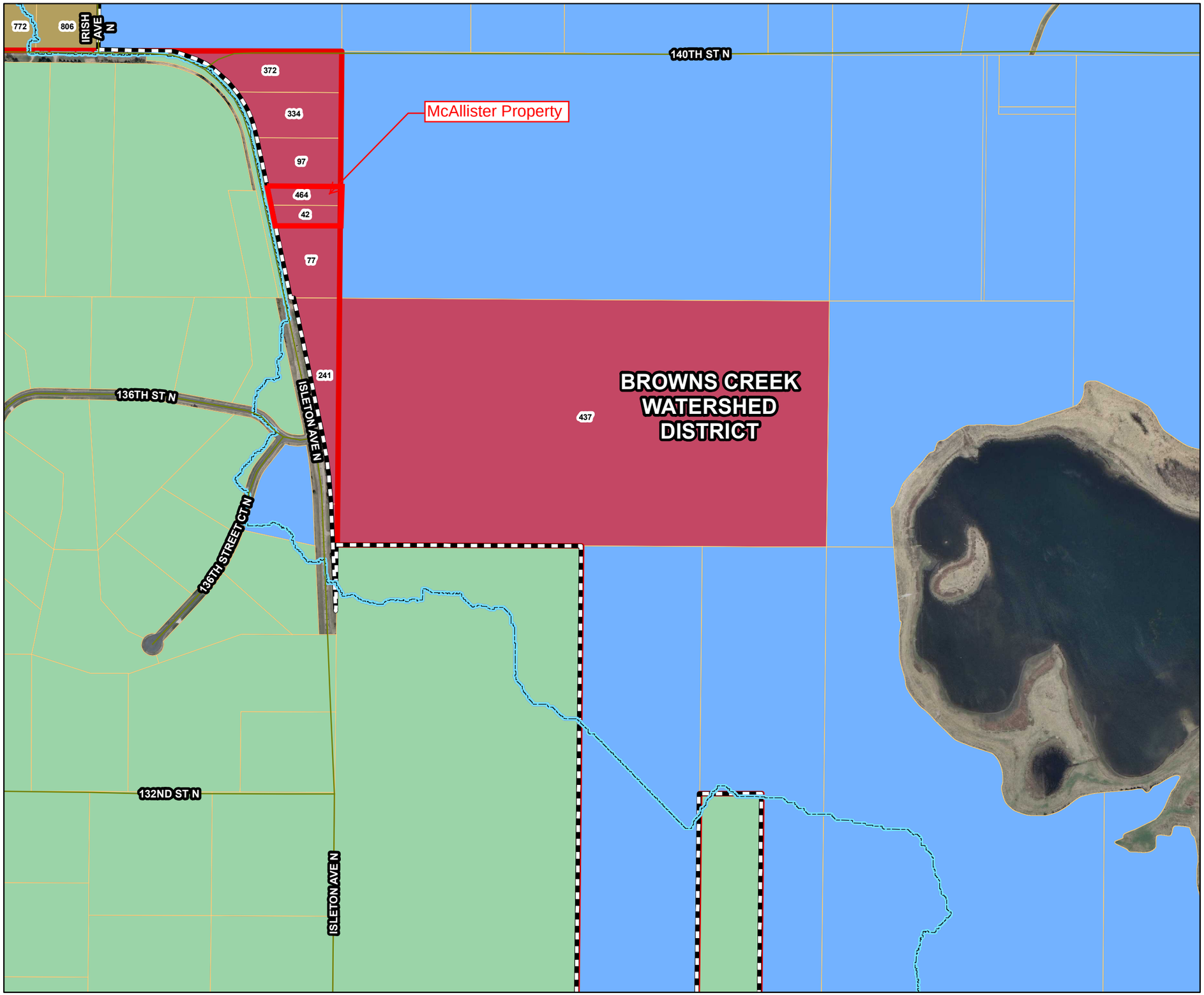
Releve Point 6
Releve Point 5
Releve Point 2
Releve Point 3
Releve Point 4
Releve Point 1
N
Figure 6: Areas Meeting Performance Standards, through 2017
Releve Point and Number
Upland Buffer
PS1 -- 50%
PS2 -- 75%
PS3 -- 100%
Browns Preserve Wetland Restoration
Scale: AS SHOWN
Drawn by: EDB
Checked by:
Project No.: 5555-226
Date: 2-22-17
Sheet: 1 of 1
Houston Engineering Inc.
Maple Grove
P: 763.493.4522
F: 763.493.5572

2:00 Update and Discussion on Boundary Investigation per 1/24/2018 Board Meeting.

Rice Creek Watershed District Legal Boundary Review Washington County



- Proposed RCWD Hydrologic Boundary
- Current Hydrologic Boundary
- RCWD Proposed Legal Boundary
- Current Rice Creek Legal Boundary
- Washington County Parcels
- County Boundary

New Watershed District

- BCWD
- CLFLWD
- CMSCWD
- RCWD
- VBWD

Parcel Boundary Determination

- Less Than 50% in the RCWD Hydrologic Boundary
- More Than 50% in the RCWD Hydrologic Boundary

N
W E
S

0 250 500 1,000 Feet

Sources: TLG, RCWD, MN DOT

Legal Boundary Review Page 11 of 26

Scale:	Drawn by:	Checked by:	Project No.:	Date:	Sheet:
AS SHOWN	BRG		5555-250		

Houston Engineering Inc.
Maple Grove
P: 763.493.4522
F: 763.493.5572

2:20 Discussion on Draft Legislative Communication.

MEMORANDUM
Rice Creek Watershed District

Date: **February 7, 2018**
To: **RCWD Board of Managers**
From: **Phil Belfiori, Administrator**
Beth Carreño, Communications and Outreach Coordinator
Subject: **RCWD Legislative Initiative 2018**

The RCWD Board of Managers traditionally participates in the annual MAWD legislative activities. The MAWD Legislative Reception is scheduled for Wednesday, March 7th from 5:00pm – 7:30pm at the Embassy Suites in St. Paul, MN. The Legislative Breakfast is scheduled for Thursday, March 8th from 7:00am – 9:00am at the same location.

Attached with this memo is a copy of the electronic invitation that will go to legislators. Hard copy letters will be sent as a follow-up with any new or updated information the Board would like shared with legislators.

Both suggested options below request legislators located with the RCWD to support the two, high priority policy legislative initiatives identified by the MAWD Board of Directors.

The current draft of the legislative email does not include language in support of any the MAWD Board of Directors legislative priorities. Below are two options that the Board is asked to consider and provide direction to staff on whether one or both options should be included in RCWD legislative communications.

At the time RCWD staff completed this memo, MAWD representatives had indicated that the current status /timing of the two proposed MAWD priority bills continues to evolve and change. Staff will provide a status update and additional details at the February 12 workshop meeting.

Option One – RCWD requests legislative support of the MAWD (high) priority legislative initiative related to the creation of a Stormwater Reuse Task Force (*once or if a bill has been authored).* Specific language for the RCWD legislative communication would state:

> The District asks for your support of HFXXXX and SFXXX: Title of Bill to Create a Stormwater Reuse Task Force.
>
> Representative XXXXX authored HF XXXX with Representatives XXXXX. Senator XXXX authored SF XXXX with Senator XXXX. This bill proposes the creation of a Stormwater Reuse Taskforce with membership from watershed districts, cities, counties, state agencies, and other stormwater reuse implementers.
>
> This taskforce would develop recommendations that further clarify and/or replace information in the (draft) "Interagency Workgroup on Water Reuse in Minnesota – 2017 Report of the Interagency Workgroup on Water Reuse" (Water Reuse Report) that relate to Stormwater Reuse Best Management Practices (BMPs). A summary of the bill and an information sheet with justification for your support is available on the District's webpage.

Note to Board: This language would only be sent to legislators located within the RCWD boundary if and/or when MAWD notifies RCWD staff of its intention to prepare this legislation and the HF/SF numbers have been posted.

Option Two- RCWD requests legislative support of the MAWD (high) priority legislative initiative related to amending the Open Meeting Law to allow electronic meeting participation. Based on the previous discussion of the MAWD resolutions provided by the Middle Fork Crow River WD, this proposed bill would not require a watershed to implement electronic communication. The bill seeks to provide watershed districts with the option. Specific language for the RCWD legislative communication would include:

> Specifically, the District asks for your support of the Minnesota Association of Watershed Districts (MAWD) high priority policy issue to amend the Open Meeting Law to allow electronic meeting participation by watershed district managers. The RCWD understands that MAWD is currently in the process of preparing legislation related to this issue. The RCWD will provide you with the HF/SF numbers when they become available.

Requested Board Discussion

Staff requests discussion and feedback regarding the two options described above. Based on Board feedback, staff anticipates distributing the revised legislative email and communication including the proposed language of the option(s) discussed by the Board. The revisions would be distributed at the 2/14 Board meeting.

Attached:
Copy of proposed legislative communication (MailChimp)

From: Beth Carreno at Rice Creek Watershed District [mailto:bcarreno=ricecreek.org@mail252.suw18.rsgsv.net] **On Behalf Of** Beth Carreno at Rice Creek Watershed District
Subject: [Test] 2018 Legislative Update from the Rice Creek Watershed District

"For 2/12 Board Workshop Packet and 2/14 Board Meeting Packet" — Beth Carreno
To send feedback about this test campaign, reply with a message above this bar.

Rice Creek Watershed District: 2018 Legislative Update View this email in your browser

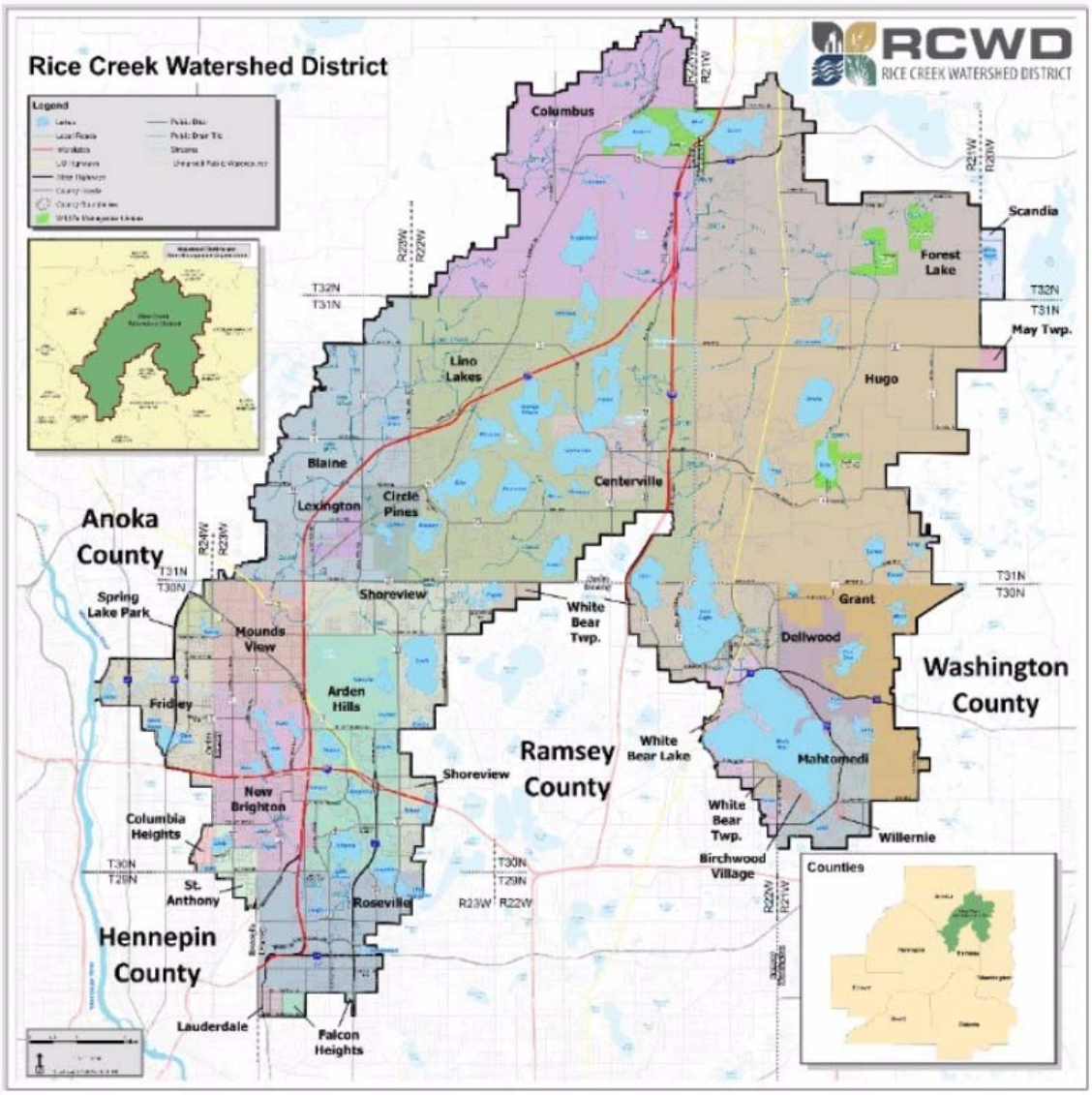
The Rice Creek Watershed District's Board of Managers cordially invites you to attend the Minnesota Association of Watershed Districts' **annual legislative reception** on **Wednesday, March 7th, 2017**. The legislative reception will be from 5:00pm - 7:30pm at the Embassy Suites located at 175 - 10th Street East in St. Paul. Those unable to attend the reception are invited to breakfast the morning of Thursday, March 8th from 7am to 9am at the same location.

Your attendance at one of these legislative events will provide the opportunity for you to hear more about the priorities and specific initiatives of the Rice Creek Watershed District (RCWD) and its partners in your legislative district.

You may RSVP by replying to this email. Beth Carreno (bcarreno@ricecreek.org) will add you to the list of attendees at the reception

and/or the breakfast. District Administrator Phil Belfiori is also available to respond to any questions at 763-398-3071 or pbelfiori@ricecreek.org.

Sincerely,
Rice Creek Watershed District Board of Managers
Anoka County Representatives: Patricia Preiner and Steve Wagamon
Ramsey County Representatives: Barbara Haake and Michael Bradley
Washington County Representative: John Waller



The Rice Creek Watershed District (RCWD) covers approximately 186 square miles of urban and rural lands in Anoka, Hennepin, Ramsey, and Washington Counties with the purpose of conserving and restoring water resources for the beneficial use of current and future generations. There are 28 cities all or partially within the borders of RCWD. It was established by the Minnesota Board of Water and Soil Resources on January 18, 1972.

You are a part of this list because of your request or interest in issues at the Rice Creek Watershed District.

Our mailing address is:

Rice Creek Watershed District
4325 Pheasant Ridge Drive Suite 611
Blaine, MN 55449

Add us to your address book

Want to change how you receive these emails?
You can update your preferences or unsubscribe from this list

2:50 Discussion on BWSR Watershed Based Funding for Metro Area.

MEMORANDUM
Rice Creek Watershed District

Date:	**February 7, 2018**
To:	**RCWD Board of Managers**
From:	**Phil Belfiori, Administrator**
	Beth Carreño, Communications and Outreach Coordinator
Subject:	**Discussion on process related to BWSR Watershed-Based Funding Pilot Program**

Background:

The Board of Water and Soil Resources (BWSR) adopted the FY18 Watershed-Based Funding Pilot program with the intent of moving towards more systematic Clean Water Funding (CWF) for local water management authorities on a watershed basis. The pilot project is for a two-year period beginning with FY2018. It is anticipated that $5.59M will be available to the entire metro area in the FY 18/19 biennium of the pilot.

While this is a watershed-based funding approach, the pilot program allocates funding based on county boundaries. Each county in the metro-area will receive a base amount of $250,000 plus additional funds based on land area of each county. (County allocations are at the end of this memo.)

BWSR is not dictating the process for disbursement or prioritizing within counties or watersheds. However, they are stipulating that each county utilize a Collaborative PTM Implementation Planning process. Each group of county stakeholders is currently working to establish their process. **Rice Creek Watershed District (RCWD) will need to participate in this process with the three different counties.** Eligible recipients may choose to participate in this collaborative process or collectively (as a county group) opt out and pursue the Metro Watershed Based Competitive Grant Process with any other counties opting out of this grant program. All eligible local entities are still eligible for the traditional BWSR CWF statewide competitive grant cycle (it is anticipated that applications will be due in summer 2018).

Eligible recipients are local government units (LGUs) that include counties, soil and water conservation districts, watershed management organizations, watershed districts and other local governments including cities with a WMO approved local water plan. Consistent with other CWF activities, grants may be used to implement eligible projects that "protect, enhance, and restore water quality in lakes, rivers, and streams; protect groundwater from degradation; and protect drinking water sources." *Eligible projects and programs must be contained in a state-approved and locally adopted comprehensive watershed management plan.*

Each eligible entity must select their voting representative and an alternate to represent their organization at the convening meetings (RCWD Board of Managers will be asked to appoint their representative and the alternate for these meetings at the February 14th Board Meeting. Convening meetings of eligible recipients and stakeholders are currently in the process of being scheduled in Anoka, Ramsey, and Washington Counties. The purpose of these meetings is to

develop a process and plan to prioritize projects in each county and distribute funds. Based on early discussions, staff anticipates each of the three county convening meetings will likely pursue one of two collaborative grant allocation approaches/frameworks:

- Funds distributed directly to WMO/WD's by formula (i.e. land area most likely). WMO/WD collaborates with its eligible local partners to decide which project(s) will be funded;

- Funds distributed directly to a county with a "watershed-based committee" type approach (i.e. one representative from each eligible entity/or watershed entity represented on a committee). This committee would decide which priority project(s) will be funded in that county for the given year.

It is also possible that with both scenarios, some portion of funding will be allocated for "base" funding to a county-wide or SWCD program that benefits the watersheds/county overall (i.e. countywide education program or groundwater program).

Proposed Timeline (subject to change):

February 12, 2018 – RCWD Board of Managers workshop to discuss and develop Board consensus/concurrence.

February 14, 2018 – RCWD Board of Managers meeting to review directed changes to working paper / information sheet (and any other documents / communications) and to appoint a representative and alternate.

February 28, 2018 – RCWD staff will provide an update on this BWSR pilot program with its partners at the City – County Partner meeting.

February 2018 (TBD)– Anticipated date for the Anoka County stakeholders to hold their convening meeting on the WBFPP.

March 7, 2018 – Washington County Water Consortium will host their convening meeting on the WBFPP.

March 2018 (TBD) – Anticipated date for the Ramsey County stakeholders to hold their convening meeting on the WBFPP.

June 30, 2018 – The deadline for county partner groups to develop and submit their joint work plans to BWSR (or indicate that they are choosing the competitive process)

Staff recommendation

Staff recommends that funds awarded in the RCWD be combined and redistributed through the District to provide larger, impactful amounts to implement high-priority, collaborative projects with eligible city / county partners.

Staff is providing three justifications for this recommendation:

1. Implementation of larger scale, high-priority collaborative projects with eligible cities and counties is already a top priority for the RCWD. The existing RCWD 10-year Watershed Plan identifies the city /county based Urban Stormwater Remediation (USWR) cost share program in its capital improvement program. The USWR cost-share program has also been used to disperse grant funds to city projects within a specific county. The USWR program has proven to be a well-accepted and tested process for the RCWD to partner with its cities and counties on eligible projects.

2. If the anticipated funds were split among all eligible LGUs in RCWD (approximately 35) it would amount to an estimated $1,000 – $40,000 for each organization. This is generally not a feasible grant award for the majority of LGUs given the reporting and administrative requirements and related staff time and cost. Further, many cities may not have eligible projects in the local water plans. BWSR requires that any eligible project be contained in the District's Watershed Plan. Given that the RCWD has prioritized partnerships with local cities, the District would rather partner with its cities/counties on eligible priority projects.

3. Not all counties have an established, existing "watershed-based committee" in place. There does not appear to be a significant benefit to adding another "layer" of local water resource decision-making solely for this process. (The existing Washington County Consortium has been in place for decades and is a well-established and successful exception to this.)

Staff also recommends that the Board of Managers provide comments to BWSR after the completion of this initial pilot project (Spring /Summer 2018) with suggestions and requests for the next biennium (more discussion at a future board meeting).

Requested Board Actions

The Board of Managers are asked to consider the following actions:

- Provide discussion on preferred approach or approaches to this pilot program and the attached draft working paper which includes the Board's guiding principles during this process.

- At the February 14, 2018 meeting, the Board will be asked to consider a motion to appoint a representative and alternate for this process. Staff recommends that Phil Belfiori, RCWD Administrator, be appointed as the RCWD representative and Beth Carreño, RCWD Communication and Outreach Coordinator, be appointed as the RCWD alternate.

Watershed-Based Funding Pilot Program Allocations

County		Allocation
Anoka		$826,000
Ramsey		$442,000
Washington		$787,000

Carver, Dakota, Hennepin, and Scott Counties share in the balance of the allocations according to the same formula for a total metro area allocation of $5,590,000 (FY 18/19 biennium).

Attached:

- DRAFT RCWD Working Paper for Watershed-Based Funding Pilot Project
- Letter to Washington County city partners
- BWSR 6-page information document
- BWSR powerpoint on the Watershed-Based Funding Pilot Program
- BWSR Metro FAQ Sheet

Rice Creek Watershed District Working Paper:
Watershed-Based Funding Pilot Program
DRAFT for Discussion Purposes Only

Purpose: This document outlines the Rice Creek Watershed District (RCWD) position for collaborating with our partners to fairly and responsibly allocate funding from the Watershed-Based Funding Pilot Program from the Board of Water and Soil Resources (BWSR) Clean Water Funding.

Background

- BWSR has stated their vision of moving towards more systematic Clean Water Funding for local water management authorities on a watershed basis.
- Eligible recipients include counties, soil and water conservation districts, watershed management organizations, watershed districts and other local governments including cities with a WMO approved local water plan. The eligible projects and programs must be contained in a state-approved and locally adopted comprehensive watershed management plan.
- Grants may be used to implement eligible projects that "protect, enhance, and restore water quality in lakes, rivers, and streams; protect groundwater from degradation; and protect drinking water sources."
- $5.59M is currently available to the metro area in the FY 18/19 biennium of the pilot.
- BWSR is not dictating the process for disbursement or prioritizing within counties or watersheds
- Convening meetings to determine each county's process are being planned in Anoka, Ramsey, and Washington County.

Challenges and Considerations

- Funding is allocated at the county level
- Each of the three county groups have not chosen a method for disbursing funds but are in process
    - RCWD must participate in three different county processes for this pilot; staff anticipates each of the three county convening meetings to pursue one of two grant allocation approaches/frameworks:
        - Distribute directly to WMO/WD's by formula (i.e. land area). WMO/WD collaborates with its eligible local partners to decide which project will be funded;
        - Distribute directly to a county-selected watershed-based committee (i.e. one representative from each eligible entity/or watershed entity). This committee decides on which project(s) will be funded.
        - It is also possible that with both scenarios some portion of funding will be allocated to "base" funding to the county or SWCD (i.e. countywide education program or groundwater program).
- BWSR has instructed eligible entities to create Collaborative PTM Implementation Plans and submit budget requests / workplans by June 30, 2018
- This is a two-year pilot (through end of FY 19)
    - RCWD staff anticipates it will provide comments to BWSR (under the direction of the Board of Managers) after the completion of this initial pilot project with recommendations for the next biennium

Guiding Principles of RCWD During this Process

- RCWD will continue to prioritize city and county collaboration with the distribution of these funds
    - Funds awarded in the RCWD will be combined and redistributed through the District to provide larger, impactful amounts to implement high-priority, collaborative projects with eligible city / county partners.
    - The RCWD will utilize existing priority projects and programs identified in the watershed plan and, where possible, utilize the existing cost share program
- RCWD will work to receive and distribute these funds using existing and accepted partnership-based programs or committees. It does not intend to create an additional layer of local water resource decision-making solely for this process.

- **DRAFT (for discussion purposes only) Letter to Washington County city partners**

Date

Recipient **[if more than one page, fill out header!]**
Address1
Address 2
Address 3

Re: Clean Water Funds, Watershed-Based Funding Pilot Program

Dear _____:

Through a 2008 voter-approved constitutional amendment, the Minnesota Clean Water Fund (CWF) was established with the purpose of protecting, enhancing, and restoring water quality and protecting groundwater and drinking water sources from degradation. For the past several years, the Minnesota Board of Water and Soil Resources (BWSR) has administered various competitive grant programs to disburse CWFs.

At its meeting on December 20, 2017, BWSR approved a new policy related to the distribution of CWFs. BWSR's vision for this new policy is to move toward more systematic distribution of CWFs to local water management authorities on a county/watershed basis.

State-wide competitive CWF grant programs will continue; however, through a pilot program, BWSR allocated $5.59 million to the seven-county metro and $787,600 specifically for Washington County, for state fiscal years 2018 and 2019. Eligible entities to receive those funds include:

- Brown's Creek Watershed District
- Carnelian-Marine-St. Croix Watershed District
- Comfort Lake-Forest Lake Watershed District
- Middle St. Croix Watershed Management Organization
- Ramsey-Washington Metro Watershed District
- Rice Creek Watershed District
- South Washington Watershed District
- Valley Branch Watershed District
- Washington County
- Washington Conservation District
- Cities and townships with water management plans that have been approved by their watershed organization(s). (Note: Activities in the approved city/township plan must also be in the respective watershed plan to be eligible.)

Like other activities funded with CWFs, activities funded through this pilot program must protect, enhance, and restore surface water quality in lakes, rivers, and streams; protect groundwater from degradation; and protect drinking water sources. Projects and programs funded through the program should not supplant other funding, but rather supplement existing funding. Please also see the enclosed BWSR Program Policy for details on eligible and ineligible activities.

Washington County, Washington Conservation District, and the Wwatershed Management Oorganizations (WMO) within Washington County are collaborating to convene a meeting to discuss funding disbursement of the CWFs of the pilot program for Washington County. If you are interested in participating in this process, please send a representative to attend and hear about the funding approach. The meeting location and time are listed below.

Washington County Water Consortium
Watershed-Based Funding Pilot Program
March 7, 2018
2 p.m. to 4 p.m.
Washington County Government Center
Lower Level Room 14
14949 62nd St. N
Stillwater, MN 55082

Prior to this meeting, your local WMO may be contacting you to coordinate funding and collaboration opportunities. Please respond by February 28, 2017 if you plan to send a representative to this meeting and consider participation in the process. You may contact me at XXXXXXXXXXXXXXX. If you do not respond by the deadline, the group will take your non-response as meaning that your community does not want to participate or will participate though a collaboration with one or more of the other eligible funding entities noted above.

Sincerely,

Name
Administrator
Xxx xxx Watershed District (Add second WMO for LGUs that are in more than one)

c: Molly O'Rourke, Washington County Administrator (via email)
Jessica Collin-Pilarski, Washington County Senior Planner (via email)
Stephanie Grayzeck Souter, Washington County Senior Planner (via email)

Attachments:
BWSR Guiding Principles
BWSR FY18 Watershed-Based Funding Pilot Program Policy

BOARD OF WATER AND SOIL RESOURCES

passed out by BWSR on 1/31/18.

CLEAN WATER LAND & LEGACY AMENDMENT

FY 2018 Watershed-Based Funding Pilot Program Policy

From the Board of Water and Soil Resources, State of Minnesota

Version: FY2018
Effective Date: 12/20/2017
Approval: Board Resolution #17-96

Policy Statement

The Clean Water Fund was established to implement part of Article XI, Section 15, of the Minnesota Constitution, and Minnesota Statutes §114D with the purpose of protecting, enhancing, and restoring water quality in lakes, rivers, and streams and to protect groundwater and drinking water sources from degradation.

Applicable Clean Water Fund Programs and Grants

- Watershed-based Funding Pilot Program

Reason for the policy

The purpose of this policy is to provide expectations for implementation activities conducted via the Board of Water and Soil Resources (BWSR) Clean Water Fund (CWF) Watershed-based Funding Pilot program as defined by the Clean Water Fund appropriation under Laws of Minnesota 2017, Chapter 91, Article 2, Section 7 (a).

$4,875,000 the first year and $4,875,000 the second year are for a pilot program to provide performance-based grants to local government units. The grants may be used to implement projects that protect, enhance, and restore surface water quality in lakes, rivers, and streams; protect groundwater from degradation; and protect drinking water sources. Projects must be identified in a comprehensive watershed plan developed under the One Watershed, One Plan or metropolitan surface water management frameworks or groundwater plans. Grant recipients must identify a non-state match and may use other legacy funds to supplement projects funded under this paragraph.

BWSR will use grant agreements for assurance of deliverables and compliance with appropriate statutes, rules and established policies. Willful or negligent disregard of relevant statutes, rules and policies may lead to imposition of financial penalties or future sanctions on the grant recipient.

BWSR's Grants Administration Manual (http://www.bwsr.state.mn.us/grants/manual/) provides the primary framework for local management of all state grants administered by BWSR.

Program Requirements

1. Local Governmental Unit Eligibility Criteria

In the seven-county Twin Cities Metropolitan Area, eligible recipients through this policy include local governments (counties, watershed districts, watershed management organizations, soil and water conservation districts, and municipalities[1]) having a current state approved and locally adopted: watershed management plan required under §103B.231, county groundwater plan authorized under §103B.255, or soil and water conservation district comprehensive plan under Minnesota statutes §103C.331, Subd. 11 who have partnered within a county boundary to develop a joint work plan. The BWSR reserves the right for the Executive Director to determine if the partnership is sufficient to meet the goals of the pilot program. Disputes to this decision may be brought to the BWSR Central Region Committee.

For areas outside of the seven-county Twin Cities Metropolitan Area, eligible recipients include partnerships of local governments (counties, soil and water conservation districts, watershed management organizations, watershed districts and other local governments) that have a current state approved and locally adopted comprehensive watershed management plan authorized under Minnesota statutes §103B.101, Subd. 14 or §103B.801 and a formal agreement to implement this plan together. Local governments within the partnership that have not adopted the state approved comprehensive watershed management plan cannot directly receive these funds; however, implementation may still occur with these funds in the geographic area of that local government by another entity within the partnership.

All recipients must be in compliance with applicable federal, State, and local laws, policies, ordinances, rules, and regulations. Recipients who have previously received a grant from BWSR must be in compliance with BWSR requirements for grantee website and eLINK reporting before grant execution and payment.

2. Match Requirements

A non-State match equal to at least 10% of the amount of the Watershed-Based Funding received is required. Match can be provided by a landowner, land occupier, private organizations, local government or other non-State sources and can be in the form of cash or the cash value of services or materials contributed to the accomplishment of grant objectives.

3. Eligible Activities

must be in the WMO plan

The primary purpose of activities funded through this program is to implement projects that protect, enhance, and restore surface water quality in lakes, rivers, and streams; protect groundwater from degradation; and protect drinking water sources. Eligible activities must be identified in the state approved, locally adopted comprehensive watershed management plan developed under Minnesota statutes §103B.101, Subd. 14 or §103B.801, watershed management plan required under §103B.231, or county groundwater plan authorized under §103B.255 and have a primary benefit towards water quality. Activities must be first submitted through a

[1] Municipalities (cities and townships) in the seven-county metropolitan area are eligible if they have a water plan that has been approved by a watershed district or a watershed management organization as provided under Minn. Stat. 103B.235.

work plan that will be reviewed by BWSR. The work plan must be approved by BWSR prior to funds being distributed.

Eligible activities can consist of structural practices and projects; non-structural practices and measures, program and project support, and grant management and reporting. Technical and engineering assistance necessary to implement these activities are considered essential and are eligible to be included. Activities that result in multiple benefits are strongly encouraged.

3.1 **Practice Standards.** All practices must be consistent with the Natural Resource Conservation Service (NRCS) Field Office Technical Guide (FOTG), Minnesota Stormwater Manual, or be professionally accepted engineering or ecological practices. Design standards for all practices must include specifications for operation and maintenance for the effective life of the given practice, including an inspection schedule and procedure.

3.2 **Effective Life.** All practices must be designed and maintained for a minimum effective life of ten years for best management practices and 25 years for capital improvement practices. The beginning date for a practice's effective life is the same date final payment is approved and the project is considered complete. Where questions arise under this section, the effective lifespan of structural practices and projects shall be defined by current and acceptable design standards or criteria as defined in Section 3.1.

3.3 **Project Assurances.** The grantee must provide assurances that land owners or land occupiers receiving this funding will keep the practice in place for its intended use for the expected lifespan of the practice. Such assurances may include easements, deed recordings, enforceable contracts, performance bonds, letters of credit, and termination or performance penalties. BWSR may allow replacement of a practice or project that does not comply with expected lifespan requirements with a practice or project that provides equivalent water quality benefits. See also the Projects Assurances section of the Grants Administration Manual.

3.4 **Operation, Maintenance and Inspections.** Identifying operation and maintenance activities specific to the installed practices is critical to ongoing performance of installed practices as well as to planning and scheduling those activities. An operation and maintenance plan must be prepared by designated technical staff for the life of the practice and be included with the design standards. An inspection schedule, procedure, and assured access to the practice site shall be included as a component of maintaining the effectiveness of the practice.

3.5 **Technical and Administrative Expenses.** Clean Water Funds may be used for actual technical and administrative expenses to advance plan implementation. Eligible expenses include the following activities: grant administration, site investigations and assessments, design and cost estimates, construction supervision, and construction inspections. Technical and administrative expenditures must be appropriately documented according to the Grants Administration Manual.

3.6 **Grant Management and Reporting**. All grant recipients are required to report on the outcomes, activities, and accomplishments of Clean Water Fund grants. The grant funds may be used for local grant management and reporting that are directly related to and necessary for implementing the project or activity.

3.7 **Livestock Waste Management Practices.** Funding for application of conservation practice components to improve water quality is limited to: livestock management systems that were constructed before **October 23, 2000**, and livestock operations registered with the Minnesota Pollution Control Agency Database or its equivalent and are not classified as a Concentrated Animal Feeding Operation (CAFO) and have less than 500 animal units (AUs), in accordance with Minnesota Rule Chapter 7020.

BWSR reserves the right to deny, postpone or cancel funding where financial penalties related to livestock waste management violations have been imposed on the operator.

a. Funded projects must be in compliance with standards in MN Rule Chapter 7020 upon completion.
b. Eligible practices and project components must meet all applicable local, State, and federal standards and permitting requirements.
c. Eligible practices are limited to best management practices listed by the MN USDA-NRCS. (www.nrcs.usda.gov/wps/portal/nrcs/detail/mn/programs/financial/eqip/?cid=nrcs142p2_023513)
d. Feedlot roof structure is an eligible practice with the following payment limitation: The maximum grant for a feedlot roof structure is not to exceed $100,000. Funding is not eligible for projects already receiving flat rate payment equaling or exceeding this amount from the NRCS or other State grant funds.
e. Feedlot relocation is an eligible practice, with the following conditions:
    1) The existing eligible feedlot must be permanently closed in accordance with local and State requirements,
    2) Payment Limitation: The maximum grant for a feedlot relocation is not to exceed $100,000. Funding is not eligible for projects already receiving flat rate payment equaling or exceeding this amount from the NRCS or other State grant funds.
    3) The existing and relocated livestock waste management systems sites are considered one project for grant funding.

3.8 **Subsurface Sewage Treatment Systems**

a. Only identified imminent threat to public health systems (ITPHS) are eligible for grants funds, except as provided under b. Project landowners must meet low income thresholds. Low income guidelines from U.S Rural Development are strongly encouraged as the basis for the definition of low income.
b. Proposed community wastewater treatment systems involving multiple landowners are eligible for funding, but must be listed on the MPCA's Project Priority List (PPL) and have a Community Assessment Report (CAR) or facilities plan [Minn. Rule 7077.0272] developed prior to work plan submittal. For community wastewater system applications that include ITPHS, systems that fail to protect groundwater are also eligible.
c. In an unsewered area that is connecting into a sewer line to a municipal waste water treatment plant (WWTP), the costs associated with connecting the home to the sewer line is eligible for funding if the criteria in a. and b. above are met.

3.9 **Multipurpose Drainage Management.** Proposed activities must be conducted adjacent to, on, or within the watershed of a priority Minnesota Statutes Chapter 103E Drainage System(s). Following is a list of eligible conservation practices and activities.

a. NRCS Conservation Practice Standard (CPS) Code 410 Grade Stabilization Structure: When proposing side inlet structures in combination with a continuous berm along a Chapter 103E drainage ditch, eligibility is limited to the side inlet pipes and construction of an average 3 ft. high (above existing ground) berm.
b. CPS Code 412 Grassed Waterway
c. CPS Code 638 Water and Sediment Control Basin
d. Open tile inlet replacement: Replacement of existing open tile inlets with water quality improvement inlets (e.g. perforated riser, dense pattern tile, or gravel inlet) in accordance with NRCS CPS Code 606 Subsurface Drain, as applicable, to reduce sediment entering a Chapter 103E drainage system via subsurface drainage tile.
e. Storage and Treatment Wetland Restoration: This activity requires a perpetual flowage and conservation easement to be held by the Chapter 103E drainage system.
f. A perpetual flowage and conservation easement must be approved by BWSR for entire contiguous storage and treatment wetland restoration(s) on, or within the watershed of, a Chapter 103E drainage system. Total payment rates, including match shall not exceed Reinvest in Minnesota (RIM) rates. The perpetual flowage and conservation easement must include an upland buffer of perennial native vegetation around the wetland area having a minimum width of 30 feet and average width of 50 feet, except where the wetland boundary is adjacent to a road right-of-way or property boundary, as approved by BWSR. The maximum upland buffer to increase multipurpose benefits or square off the easement area is limited to a 1:1 upland to wetland area ratio for each wetland, as approved by BWSR. Payable non-cropland buffer acres are limited to 20% of the total buffer acres. Design and construction components necessary for wetland and upland buffer restoration are eligible.
g. NRCS Conservation Activity Plan (CAP) 130 Drainage Water Management Plan: The CAP 130 can include controlled subsurface drainage, denitrifying bioreactor, and saturated buffer components. The plan must be developed by a Technical Service Provider (TSP) certified in the NRCS Tech Regulation for CAP 130.
h. CPS Code 587 Structure for Water Control:
i. CPS Code 554 Drainage Water Management, Implementation/Operation: A CAP 130 is required. For areas where controlled subsurface drainage structures have been installed to manage water levels, NRCS rates must be applied.
j. CPS Code 604 Saturated Buffer:
k. Code 605 Denitrifying Bioreactor:

3.10 **Non-Structural Practices and Measures**. Non-structural practices and activities that supplement, or exceed current minimum State standards or procedures for protection, enhancement, and restoration of water quality in lakes, rivers, and streams or that protect groundwater from degradation are eligible. Non-structural vegetative practices must follow the Native Vegetation Establishment and Enhancement Guidelines: www.bwsr.state.mn.us/native_vegetation/seeding_guidelines.pdf.

a. **In-lake or in-channel treatment.** Best management practices such as rough fish management, lake drawdown and alum treatments that have been identified as an implementation activity in a TMDL study or Watershed Restoration and Protection Strategies document are allowable. A feasibility study must be completed, reviewed and approved by BWSR staff prior to funds being spent on these activities. Eligible costs apply only to initial costs for design and implementation. All subsequent applications and treatments under this subsection are considered to be Operations and Maintenance expenses that are a local responsibility.
b. **Incentives.** Incentives may be used to encourage landowners to install or adopt land management practices that improve or protect water quality. Incentive payments and enhanced protection measures should be reasonable and justifiable, supported by grant recipient policy, consistent with prevailing local conditions, and must be accomplished using established standards. All incentivized practices or procedures must have a minimum duration of at least 3 years with a goal of long-term landowner adoption. BWSR reserves the right to review and approve incentive payment rates established by grant recipient policy. Any projects proposing incentives for more than 3-years must be reviewed by BWSR staff and approved by the Executive Director prior to work plan approval.
c. **Project Support.** Eligible activities include community engagement, education and outreach, equipment and other activities, which directly support or supplement the goals and outcomes expected with the implementation of items identified in section 3.0 above. Refer to guidance within the Grants Administration Manual for Capital Equipment Purchases.
d. **Easements.** Proposed use of easements and payment amounts must be reviewed and approved by BWSR staff prior to expenditure of grant funds to acquire an easement. Total payment rates for perpetual easements, including match shall not exceed Reinvest in Minnesota (RIM) rates.

4. Ineligible Activities

The following activities will not be considered:

a. Activities that do not have a primary benefit of water quality
b. Stormwater conveyances that collect and move runoff, but do not provide water quality treatment benefit
c. Replacement, realignment or creation of trails or roads
d. Municipal wastewater treatment
e. Municipal drinking water supply facilities or individual drinking water treatment systems
f. Routine maintenance activities within the effective life of existing practices or projects
g. General maintenance and repair of capital equipment
h. Activities having the primary purpose of water quality monitoring
i. Livestock Waste Management Practices: Practices and activities that are not listed in the USDA NRCS-EQIP docket or are not included in the USDA NRCS eFOTG
j. Subsurface Sewage Treatment Systems (SSTS):
    1) Small community wastewater treatment systems serving over 10,000 gallons per day with a soil treatment system, and
    2) A small community wastewater treatment system that discharges treated sewage effluent directly to surface waters without land treatment.

k. Drain tile, except for tile outlets required for water and sediment control basins, tile required to make eligible drainage water management practices function, and dense pattern tile to replace open tile inlet(s)
l. Ditching except if needed for the creation of a storage and treatment wetland restoration
m. Back-flow preventing flap gates on side inlet structure pipes where a system-wide analysis has not been completed
n. Bridges
o. Fee title land acquisition (costs may count towards match)
p. Contribution to a contingency or reserve fund that extends beyond the grant agreement period
q. Payment(s) to an equipment replacement fund

5. Technical Expertise

The grantee has the responsibility to ensure that the designated technical staff have the appropriate technical expertise, skills and training for their assigned role(s). See also the Technical Quality Assurances section of the Grants Administration Manual.

5.1 **Technical Assistance Provider.** Grantees must identify the technical assistance provider(s) for the practice or project and their credentials for providing this assistance. The technical assistance provider(s) must have appropriate credentials for practice investigation, design, and construction. Credentials can include conservation partnership Job Approval Authority (JAA), also known as technical approval authority; applicable professional licensure; reputable vendor with applicable expertise and liability coverage; or other applicable credentials, training, and/or experience.

5.2 **BWSR Review.** BWSR reserves the right to review the qualifications of all persons providing technical assistance and review the technical project design if a recognized standard is not available.

6. Practice or Project Construction and Sign-off

Local governments receiving these funds shall verify that the practice or project was properly installed and completed according to the plans and specifications, including technically approved modifications, prior to authorization for payment.

7. BWSR Grant Work Plan, Reporting, and Reconciliation Requirements

BWSR staff is authorized to develop grant agreements, requirements and processes for work plans and project outcomes reporting, closeouts, and fiscal reconciliations. All grantees must follow the Grants Administration Manual policy and guidance. BWSR recognizes that as a pilot program activities may be identified after the work plan is approved. Work plan revisions must follow the BWSR Grants Administration Manual procedures for Grant Agreement Amendments and Work Plan Revisions.

In the event there is a violation of the terms of the grant agreement, BWSR will enforce the grant agreement and evaluate appropriate actions, up to and including repayment of grant funds at a rate up to 150% of the grant agreement.

8. Performance

Watershed-based funding will be based upon accountability and performance in achieving measurable progress towards elements of the comprehensive watershed management plan. As a performance-based grant, BWSR reserves the right to modify, suspend, or cancel the grant agreement at any time if work under the grant agreement is found by BWSR to be unsatisfactory. Performance under this program may impact future watershed-based funding allocations.

A future performance measure under consideration for these grants is the amount or percent leveraged funds; therefore, grantees are encouraged to report all funds leveraged above and beyond the required match.

History

This version is the first for this policy

Contact

For Clean Water Programs: Marcey Westrick, Clean Water Coordinator

passed out by Barb @ BWSR on 1/31/18

Watershed-Based Funding **Pilot** Program

January 2018

BOARD OF WATER AND SOIL RESOURCES

Minnesota Board of Water and Soil Resources | www.bwsr.state.mn.us

One Watershed, One Plan Program

- 2012 MINN. STAT. 103B.101 - Local water mgmt. coordination
- 2013 Policy Paper - Local Government Water Roundtable
  - Initial framework for One Watershed, One Plan (1W1P)
- 2014 Pilot Watersheds for 1W1P
- 2015 MINN. STAT. 103B.801 - Comprehensive Watershed Management Planning (1W1P)
- 2016 1W1P Program adopted & Transition Plan
- 2016 Funding Policy Paper – Local Government Water Roundtable
  - Recommendation for watershed-based funding

FY18-19 Appropriation Language

$4,875,000 the first year and $4,875,000 the second year are for:

- A **pilot** program to provide **performance-based grants** to local government units.
- The grants may be used to implement projects that **protect, enhance, and restore surface water quality in lakes, rivers, and streams; protect groundwater from degradation; and protect drinking water sources.**
- Projects **must be identified in a comprehensive watershed plan** developed under the One Watershed, One Plan or metropolitan surface water management frameworks or groundwater plans.
- Grant recipients must identify a non-state match and may use other legacy funds to supplement projects funded under this paragraph.

Guiding Principles

Watershed-Based Pilot Program funding…

- Implement activities identified in comprehensive watershed management plans (1W1P, Metropolitan Surface Water Management Act, or Metropolitan Groundwater Act)
- Based upon accountability & measureable progress being made on elements of the management plan
- Consistent with the *Nonpoint Priority Funding Plan*
- Holistic and flexible approach that includes both protection and restoration
- Requires a non-state contribution

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Watershed Based Funding Pilot Program Allocations

Seven County Metro Area ($5.59M)

Non-Metro Area ($3.11M)

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Watershed Based Funding Pilot Program Allocations

Seven-County Metro Area	% of area (based on of sq. miles of Metro)	Allocation ($250K each plus distribution based on % area)
Anoka	15%	$826,000
Carver	13%	$749,200
Dakota	20%	$1,018,000
Hennepin	20%	$1,018,000
Ramsey	5%	$442,000
Scott	13%	$749,200
Washington	14%	$787,600
Total Metro	100%	$5,590,000

One Watershed, One Plan Pilots	% (based on sq. miles of private land)
Root	32%
Yellow Medicine	16%
Lake Superior	7%
Red Lake	23%
North Fork Crow	21%
Total 1W1P	100%

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7-County Metro Area

FY 2018 Watershed-Based Funding Pilot Program Policy

- Adopted by BWSR Board 12/20/2017
- Eligible Entities
- Eligible/Ineligible Projects
- 10% non-state match for grant funds received. Request that all funds above match also be reported.

Next Steps for Collaborative Approach

1. Convene **Initial Meeting** (competitive or collaborative?)
2. Decide on convener, identify representative, conduct planning meetings (keep BWSR involved)
3. Submit **Implementation Plan** (Prioritized, Targeted & Measurable) to BWSR for approval (before June 30, 2018)
   - Description of partnership, decision-making process for selecting projects/programs, timeframe of plan, implementation actions, costs, responsible party, plan reference
4. Submit an **eLINK Budget Request** to BWSR (by June 30, 2018)
5. Submit an eLINK **Work Plan** and execute **Grant Agreement(s)**

BOARD OF WATER AND SOIL RESOURCES

Questions

FY 2018-19 Clean Water Fund Watershed-based Funding Pilot Program: Metropolitan Area Specific Questions Frequently Asked Questions (FAQs)

The Watershed-based funding pilot in the Seven-County Metropolitan Area is being implemented differently than the rest of the state, recognizing that comprehensive watershed management planning has been taking place in this area since 1982. The following questions apply to the Metro Area only.

Q1: Projects identified in Metropolitan Groundwater plans are considered eligible. How will these projects be compared to surface water projects?

A: Prioritization between groundwater and surface water will be decided by the local partnership: funding is intended to be holistic and flexible so priorities and projects for each can be included in the budget request if the partners agree on prioritizing both.

Q2: Are cities and townships within the 7-County Metro Area eligible for this funding, and what if they wish not to participate in the process?

A: Cities and townships with approved local water plans under Minn. Stat. 103B.235 are eligible to receive funds. A city or township may choose not to participate and; therefore, would not be eligible to directly receive watershed-based funding. Cities and townships will be invited to a county-wide convene meeting by a group facilitator. The invitation will include a deadline for responding to the invitation. Lack of response by the deadline will be considered a decision not participate.

Q3: Can cities and townships, or Joint Powers Watershed Management Organizations (JPA WMOs) representing those cities and townships, participate in metro convene meetings?

A: Cities and townships with approved local water plans under Minn. Stat. 103B.235 should be invited to participate; watershed districts, JPA WMOs, counties (with approved groundwater plans), cities, townships and SWCDs are all eligible for these funds and should have an opportunity to participate in the collaborative process.

Q4: Do cities and townships have an unfair advantage in the decision making process if a JPA WMO representing cities is attending meetings as well as city/township representatives themselves?

A: As part of the metro-area pilot, the local governments within a county geographic area are responsible for deciding the decision making structure they will use. Participants are encouraged to select an equitable process.

Q5: What documentation is required by BWSR to demonstrate that a local government is or is not participating in the Watershed-based Funding pilot?

A: The communication or invitation sent by the group facilitator for the convene meetings should include a deadline for responding to the invitation and a statement indicating that no response will be interpreted as declining to participate.

If a local government has decided to participate in the convene meetings, they can accept meeting invitations or provide a written acceptance to the group facilitator stating they wish to participate in the process.

If a local government has decided not to participate in a collaborative process, they can decline invitations to scheduled meetings or provide a written indication to the group facilitator stating they do not wish to participate in the process.

Q6: Who will the invitation to participate be sent to?

A: For cities and townships, the invitation should be sent to the person with responsibility for the local water plan, with the city administrator or township clerk copied. For the watershed districts and JPA WMOs, the invitation should be sent to the organization administrator or the board chair if there is not an administrator. For SWCDs, the invitation should be sent to the district manager.

Q7: What documentation is required by BWSR to demonstrate that a local government is participating in the collaborative process for the Watershed-based Funding pilot?

A: Due to local matching requirement involved, a local government wishing to participate in a collaborative process, should follow their own procedures and policies regarding receiving state grant funding.

This may include a board resolution or motion acknowledging the intent to move forward with identified projects and providing necessary match.

Q8: What documentation is required by BWSR to demonstrate a collaborative partnership amongst multiple local governments within a county geographic area for the Watershed-based Funding pilot?

A: As part of the metro-area pilot, the local governments within a county geographic area need to decide how funds would be allocated amongst the participating partners. If partners will work independently of one another, the local governments that will directly receive funding should have the board's approval per resolution of accepting state funds and providing the necessary matching dollars.

If the partners in the county geographic area will have one fiscal agent responsible for managing and distributing the funds, it may be in the best interest of the partners to have some type of formal agreement. In some cases, existing contracts for services between entities may suffice depending on the terms of the contract. Other options may include Joint Powers Agreements, Memorandums of Agreement (MOA) or Memorandums of Understanding (MOU). Ultimately, is for the local governments to decide what is necessary.

Q9. Are activities identified in a SWCD Comprehensive Plan or a City Water Plan considered eligible?

A: The policy for this pilot programs requires eligible activities to be identified in the state approved, locally adopted comprehensive watershed management plan developed under Minnesota statutes §103B.101, Subd. 14 or §103B.801, watershed management plan required under §103B.231, or county groundwater plan authorized under §103B.255 and have a primary benefit towards water quality. So, if the activity in the SWCD Comprehensive Plan or City Water Plan is also identified in the plans listed in section 3 of the policy, it is eligible.

Q9: How does the competitive funding work if multiple counties decide to go to a competitive process?

A: Funding for counties that decide to go to a competitive process will get pooled, and all eligible local governments within those counties will be able to compete for the total pool of funding.

Q10: Do Soil and Water Conservation Districts (SWCD) get the first right of refusal as the group convener?

A: BWSR is acknowledging the Local Government Water Roundtable Policy Paper recommendation that the SWCD, if they so choose, be the organization to convene and facilitate the meetings of local governments within the county. However, the local governments can decide which entity they want to organize the process.

Q11: Does a WD, WMO or city or township whose boundary spans more than one county need to participate in multiple county meetings if they wish to access funds in each area?

A: Yes.

Q12: Does funding from one county only go to projects within that county, or can it be spent outside the county border by a participating partner who boundary spans multiple counties?

A: A situation of this type would have to be reviewed by BWSR staff.

Q13: What is included in the eLINK budget request and work plans?

A: If a Collaborative Work Request is developed within a county geographic area, the written document must contain 1) a description of the partnership and decision-making process used to select projects and programs, 2) the timeframe of the Collaborative PTM Implementation plan (For FY18-19 Funding only or extended beyond that) and 3) implementation actions, responsible party, watershed or groundwater plan reference, timeframe, and costs for activities that will be implemented with the

available Pilot Funds and, if applicable, any activities that have been prioritized by the group beyond available funding. This can be a simple spreadsheet.

The eLINK budget request and work plan would reflect the budget and proposed measurable outcomes of those programs and projects proposed to be being funded with Watershed-based Funding dollars.

Q14. How is the decision made within the county to go collaborative or competitive?

A: The convened group of local governments within each county geographic area needs to come up with a mechanism for making this decision.

Q15. If a simple majority is decided on and the group goes with the collaborative option, can the minority opt out?

A: Yes, but they would be ineligible to be recipients of Watershed-based funds.

Q16. Why isn't the metro funding anticipated to grow over the next 8-10 years like the non-metro funding is anticipated to grow?

A: The metro area is fully planned. It is recognized that the non-metro will need more funding as more 1W1P planning areas become eligible for watershed-based funding. However, amounts will be impacted by appropriations to watershed-based funding and the rate of comprehensive watershed management plan completion across the state.

Q17. How often to do we have to get together to make a collaborative work request document?

A: Every two years, per biennium. However, local governments could create a document that extends beyond 2 years if they so choose.

Q16. How should priorities be split within a county when there is more than one major hydrological system?

A: The local governments will have to decide and agree upon priorities within the county. They could go competitive if an agreement can't be reached.

Q17. Could a county go competitive for the first biennium and choose to do a collaborative process two or four years later?

A: Yes, although given that this is a pilot, things could change by that time.

Q18. If a collaborative request includes a project that needs a feasibility study, does that study need to be in the submission?

A: Yes, if the feasibility study is needed prior to implementing the project and watershed-based funding will fund the feasibility study.

Q19. If a WMO or WD has a current plan that is expired, is the local government able to receive funding?

A: No.

Q20. How are the different plans defined as current?

A: Watershed management organizations and metro watershed districts plans are not current if the management plan is more than 10 years beyond the BWSR plan approval date unless the plan states a lesser period of time.

Q21. Can Watershed-based funding pay for staff time?

A: Yes. Eligible activities can consist of structural practices and projects; non-structural practices and measures, program and project support, and grant management and reporting.

3:20 Update on Local Water Planning Reviews.

Community	Local Water Management Plan Status		
	RCWD Deadline	Submitted Y/N	Comments
Birchwood Village	3/31/2017	N	Sent missed deadline letter to City.
Mahtomedi	3/31/2017	Y	City revising plan based on RCWD comments.
Willernie	3/31/2017	N	RCWD & Met. Council assisting City with plan.
Columbia Heights	8/31/2017	Y	City revising plan based on RCWD comments.
Dellwood	8/31/2017	Y	RCWD currently reviewing plan.
Falcon Heights	8/31/2017	Y	City revising plan based on RCWD comments.
Hugo	8/31/2017	Y	City revising plan based on RCWD comments.
New Brighton	8/31/2017	Y	City revising plan based on RCWD comments.
Roseville	8/31/2017	Y	City revising plan based on RCWD comments.
St. Anthony	8/31/2017	N	Sent missed deadline letter to City.
White Bear Lake	8/31/2017	N	Sent missed deadline letter to City.
Arden Hills	1/31/2018	Y	RCWD currently reviewing plan.
Circle Pines	1/31/2018	Y	RCWD currently reviewing plan.
Forest Lake	1/31/2018	N	City starting work on plan. Met with City to discuss January 2018.
Fridley	1/31/2018	Y	Received a preliminary plan & provided initial comments.
Grant	1/31/2018	N	Heard from City plan will likely be submitted June 2018.
Lauderdale	1/31/2018	N	Sent missed deadline letter to City.
Lexington	1/31/2018	N	Sent missed deadline letter to City.
Lino Lakes	1/31/2018	N	Heard from City plan will likely be submitted February 2018.
Scandia	1/31/2018	N	Sent missed deadline letter to City.
Blaine	7/31/2018	Y	Received a preliminary plan & provided initial comments.
Centerville	7/31/2018	N	
Columbus	7/31/2018	N	RCWD meeting with City in February 2018 to discuss plan.
May Twp	7/31/2018	N	
Mounds View	7/31/2018	N	
Shoreview	7/31/2018	Y	RCWD currently reviewing plan.
Spring Lake Park	7/31/2018	N	
White Bear Twp	7/31/2018	N	Met with City to discuss plan December 2017.

RCWD
RICE CREEK WATERSHED DISTRICT

Example of "90-day" letter

Current Date

City Contact
Contact Title
City Hall Address

Re: Reminder on City of _____Local Water Management Plan Submittal Schedule

Dear _____,

The Rice Creek Watershed District (RCWD) would like to provide a reminder that the City of _____'s submittal schedule for submitting the Local Water Management Plan (LWMP) to RCWD is in 90 days on _____. The City selected this submittal deadline [or RCWD asked cities to select a submittal deadline] to assist with RCWD's review and approval of 28 cities' LWMPs by the Comprehensive Plan deadline of December 31, 2018. The observance of the LWMP submittal schedule is important to RCWD's efforts to conduct plan reviews consistent with the City's Metropolitan Council timing requirements.

If the City does not anticipate meeting the submittal schedule, please notify RCWD immediately. RCWD staff stand ready to assist the City with LWMP requirements. Please contact Lauren Sampedro, District Technician with any questions or concerns at 763-398-3078 or lsampedro@ricecreek.org.

Sincerely,

Phil Belfiori
District Administrator

RCWD
RICE CREEK WATERSHED DISTRICT

Example of "missed deadline" letter

Current Date

City Contact
Contact Title
City Hall Address

Re: Reminder on City of _____Local Water Management Plan Submittal Schedule

Dear _____,

The Rice Creek Watershed District (RCWD) would like to provide a reminder that the City of _____'s submittal schedule for submitting the Local Water Management Plan (LWMP) to RCWD was _____ and has since passed. The City selected this submittal deadline [or RCWD asked cities to select a submittal deadline] to assist with RCWD's review and approval of 28 cities' LWMPs by the Comprehensive Plan deadline of December 31, 2018. The observance of the LWMP submittal schedule is important to RCWD's efforts to conduct plan reviews consistent with the City's Metropolitan Council timing requirements. Please provide _____'s [City Name] draft LWMP to RCWD as soon as possible for review.

If the City is not planning to submit the plan immediately, please provide the date of anticipated draft plan submittal to the RCWD as well as an update on the City's progress. RCWD staff stand ready to assist with LWMP requirements. Please contact Lauren Sampedro, District Technician with any questions at 763-398-3078 or lsampedro@ricecreek.org.

Sincerely,

Phil Belfiori
District Administrator

3:40 Initial Discussion on Urban Stormwater Remediation (USWR) Cost-Share Applications.

MEMORANDUM
Rice Creek Watershed District

Date: February 5, 2018
To: RCWD Board of Managers
From: Kyle Axtell, Water Resource Specialist/Project Manager
Subject: 2018 Urban Stormwater Remediation Program Applications

BACKGROUND & DISCUSSION

At its regular meeting on October 25, 2017 the RCWD Board authorized staff to solicit proposals for the 2018 Urban Stormwater Remediation Cost-Share Program. A request for proposals was released and eleven applicants submitted thirteen proposals by the application deadline of December 29, 2017. Proposals received were requested to be preliminary in nature, so as to not require large outlays of capital by applicants only to have their proposal denied. Further planning and design would occur upon approval by the RCWD Board. The RCWD has approximately $392,000 available for project funding in 2018 and a total of $721,216 was requested through the thirteen applications.

The purpose of this discussion is to introduce the projects to the Board of Managers and solicit comments and questions on the applications in advance of formal consideration of the proposals during the February 28, 2018 regular Board meeting. A brief review completed by the District Engineer is also included for twelve of the proposals and a copy of the program guidelines is attached for reference. A summary list ***(alphabetical, non-ranked)*** of the applications received follows:

1. **City of Columbia Heights – Silver Lake Boat Landing Stormwater Retrofits**
    a. Target Waterbody: Silver Lake (impaired, TMDL)
    b. Eligible Project Cost: $337,453
    c. Requested Cost-Share: **$50,000**
    d. Proposed BMPs: Redesign/reconstruct two-cell stormwater pond and add biofiltration basin at the Silver Lake Boat Launch

2. **City of Fridley – 69th Avenue Road Diet and Median Infiltration**
    a. Target Waterbodies: Lower Rice Creek (impaired)
    b. Eligible Project Cost: $133,558
    c. Requested Cost-Share: **$50,000**
    d. Proposed BMPs: Eliminate 1.17 acres of impervious surface and convert boulevard to in-median infiltration basins

3. **City of Hugo – Stormwater Asset Management Program**
    a. Target Waterbodies: Various throughout City
    b. Eligible Project Cost: $24,000
    c. Requested Cost-Share: **$12,000**
    d. Proposed BMPs: Implement enhanced MS4 software package

4. **City of Lino Lakes – LaMotte Neighborhood Biofiltration Basin**
    a. Target Waterbodies: Centerville Lake (impaired, TMDL)
    b. Eligible Project Cost: $79,000
    c. Requested Cost-Share: **$39,500**
    d. Proposed BMPs: Construct biofiltration basin in concert with proposed street reconstruction project

5. **City of Lino Lakes – West Shadow Lake Drive Sanitary Extension**
    a. Target Waterbodies: Reshanau Lake (impaired, TMDL)
    b. Eligible Project Cost: $349,000
    c. Requested Cost-Share: **$50,000**
    d. Proposed BMPs: Extension of municipal sewer during reconstruction of West Shadow Lake Drive, allowing for the elimination of 62 residential ISTS systems within 500 feet of Reshanau Lake

6. **City of Mahtomedi – Glendale Park BMP**
    a. Target Waterbodies: White Bear Lake (not impaired, Tier I)
    b. Eligible Project Cost: $106,016
    c. Requested Cost-Share: **$50,000**
    d. Proposed BMPs: Construct biofiltration basin in concert with proposed street reconstruction project; provide local flooding relief

7. **City of Mahtomedi – Phase 3 Historic District Improvements**
    a. Target Waterbodies: White Bear Lake (not impaired, Tier I)
    b. Total Project Cost: $173,385 (eligible costs)
    c. Requested Cost-Share: **$50,000**
    d. Proposed BMPs: Construct 3 in-line stormwater BMPs in concert with proposed street reconstruction project; provide local flooding relief

8. **City of New Brighton – Lions Park Stormwater Reuse**
    a. Target Waterbodies: Long Lake (impaired, TMDL)
    b. Total Project Cost: $250,000
    c. Requested Cost-Share: **$50,000**
    d. Proposed BMPs: Construct stormwater reuse irrigation system

9. **City of Roseville – Evergreen Park Underground Filtration & Reuse**
    a. Target Waterbodies: Little Lake Johanna (impaired, TMDL)
    b. Total Project Cost: $631,800
    c. Requested Cost-Share: **$205,000**
    d. Proposed BMPs: Construct stormwater reuse irrigation system with sand filtration of system bypass/overflow

10. **City of Shoreview – Rice Creek Fields Stormwater Reuse**
    a. Target Waterbodies: Middle Rice Creek, Long Lake (impaired, TMDL)
    b. Total Project Cost: $325,000
    c. Requested Cost-Share: **$50,000**
    d. Proposed BMPs: Construct stormwater reuse irrigation system

11. **City of St. Anthony – Central Park Splash Pad Reuse Irrigation**
    a. Target Waterbodies: Mirror Lake
    b. Total Project Cost: $170,000
    c. Requested Cost-Share: **$50,000**
    d. Proposed BMPs: Construct system to divert potable splash pad runoff to existing reuse irrigation system

12. **Minnesota Commercial Railway – Rice Creek Bridge Stabilization & Shoreline Protection**
    a. Target Waterbodies: Middle Rice Creek, Long Lake (impaired, TMDL)
    b. Total Project Cost: $74,295
    c. Requested Cost-Share: **$27,716**
    d. Proposed BMPs: Reconstruct eroded abutment headwalls and stabilize eroded abutment slopes at Rice Creek Bridge near Long Lake

13. **White Bear Township – Bald Eagle Lake Outfall Improvements**
    a. Target Waterbodies: Bald Eagle Lake (impaired, TMDL)
    b. Total Project Cost: $74,000
    c. Requested Cost-Share: **$37,000**
    d. Proposed BMPs: Addition of sump manholes, SAFL Baffles and channel stabilization to two storm sewer outfalls at Bald Eagle Lake

Attachments:

- 2017 USWR Program Guidelines
- Thirteen Individual USWR Applications
- Twelve Engineer Review Memos

Rice Creek Watershed District 2018
Urban Stormwater Remediation Cost-Share Program

Program Guidelines

1. Application

The application form for RCWD's Urban Stormwater Remediation Cost-Share Program can be downloaded from the District's website at http://www.ricecreek.org/grants. A complete application, including a preliminary conceptual design and pollutant reduction estimates, must be submitted for District review to ensure consistency of the project with RCWD water quality goals and objectives. ***All sections (I through XIII) on the application form are required.***

2. Timetable & Prioritization

Applications will be accepted and reviewed according to the following schedule:

Application Deadline	*Citizen Advisory Committee Review*	*Public Hearing and Final Board Action*
December 29, 2017	February 7, 2018	February 28, 2018

Project funding consideration will be based on several factors including, but not limited to, the following: location, sustainability, consistency with District programs, capital and maintenance costs, and expected benefits (refer to Chapter 7.5 and Appendix G in the District's Watershed Management Plan). ***For the 2018 funding cycle, priority will be given to applications involving stormwater reuse irrigation projects.*** Unfunded applications may be resubmitted for consideration in a future funding year. Submittal of an application for funding, regardless of funding availability, does not in any way guarantee acceptance into the program.

3. Funding Availability

For 2018, the District anticipates making approximately $390,000 available to fund the implementation of projects approved through this program. For approved projects, the District may fund up to 50% of eligible project costs, typically not to exceed $50,000 per project. Eligible costs generally include construction materials, labor, and engineering costs, subject to District approval. The RCWD Board of Managers reserves the right to (1) offer additional funding to projects that result in multiple District-wide or regional benefits, (2) offer cost-share funding to a selected project for less than the requested amount, and/or (3) offer cost-share funding for only a specific portion(s) of a selected project.

Stormwater reuse irrigation project applications, if approved, will be offered funding at a level of $10,000 per acre irrigated, provided that adequate stormwater supply and storage are available and/or constructed as a part of the project. All other standard funding provisions continue to apply.

4. Cost-Share Agreement & Schedule

Upon formal acceptance into the program by the RCWD Board, a cost-share agreement will be provided to the cost-share recipient and must be executed and returned to the District within 60 days. If an executed agreement is not received by the District before the specified date, encumbered funds may be withdrawn and made available for reallocation to another project. Projects funded in 2018 must be completed by December 31, 2020.

5. Design & Maintenance Plan

Final design specifications and calculations and an operation and maintenance plan must be submitted for District review and approval prior to initiation of the project. Failure to obtain District approval of the project design plans and operation and maintenance plan may result in cancellation of the cost-share agreement. Project monitoring and maintenance is the sole responsibility of the applicant. RCWD will not accept any maintenance responsibility for projects funded through this program.

6. Bids & Permits

Successful applicants must provide the District with information on bid tabulation or contractor quotes, the applicant's issued notice to proceed, and certification by the applicant that all necessary permits and approvals have been obtained. Acquisition of required permits and approvals will be the sole responsibility of the applicant.

7. Property Ownership

If the project is proposed to be built on property that is not owned by the applicant or is not currently subject to an easement owned by the applicant, a signed letter of concurrence shall be submitted by the landowner indicating their understanding that the applicant is seeking funds for a project proposed to be built on the landowner's property and that the landowner intends to work with the applicant to arrange for a transfer of title to the property or conveyance of a perpetual easement over the project area or some other form of permanent agreement to allow access for construction, operation and maintenance of the project within the project timeframe.

8. Education & Demonstration

Applicants must incorporate a public education component into the project. Possible options include installation of permanent project signage or hosting a public tour of the project. Other unique ideas are welcome. RCWD staff can be made available to assist successful applicants with this component of the project. Direct costs associated with the educational component may be included in the total estimated project cost.

9. Project Payment

The cost-share agreement will typically allow for 50% of District funds to be disbursed upon District approval of final project design and maintenance plans, if requested by the grantee. Final payment will only be made upon project completion. Applicants must provide paid invoices and documentation that the project was completed according to the approved design standards, specifications and pollution reduction values. Educational components of the projects (signage, tours, etc.) must be installed and/or complete prior to disbursement of the final grant payment.

10. Conformance to Guidelines

The District reserves the right to withdraw or withhold funding for any project not completed in accordance with these guidelines.

11. Submitted Information

Any submitted information, including applications, conceptual designs, cost estimates, bid tabulations, final designs and specifications, permits and proof of expenditures becomes part of the public record.

Rice Creek Watershed District 2018
Urban Stormwater Remediation Cost-Share Program
Application Form

Incomplete applications will be returned to the applicant.

I. APPLICANT INFORMATION

Organization (to be named as Grantee): City of Columbia Heights

Street Address: 590 40th Avenue, NE

City, State, Zip: Columbia Heights, MN 55421

II. PROJECT CONTACTS

Project Officer: Kevin Hansen
Telephone: (763) 706-3705
Fax: (763) 706-3701
Email: khansen@columbiaheightsmn.gov
Tax Status: Exempt

Financial Officer: Joseph Kloiber
Telephone: (763) 706-3600
Fax: (763) 706-3671
Email: joseph.kloiber@columbiaheightsmn.gov
Tax ID#: 41-6005069

(e.g., local government, non-profit 501(c)(3), private business, etc.)

III. PROJECT INFORMATION

Project Name: Silver Lake Boat Landing Stormwater Retrofits

Location(s) of Project: West Shoreline of Silver Lake

City: Columbia Heights State: MN County: Anoka

Project Start Date: 04/01/2019 Project Completion Date: 10/30/2019

Project Type (check only those that directly apply):

- [x] Water Quality Treatment Project
- [x] Runoff Volume Control / Flood Storage Project
- [x] Peak Runoff Rate Control Project
- [ ] Stormwater Reuse Irrigation Project
- [ ] Other

Is a RCWD Rule C permit from the RCWD required for this project? [ ] YES [ ] NO [■] UNKNOWN

IV. COST-SHARE REQUEST

RCWD Cost-Share Funds Requested: $ 50,000.00

Local Matching Contributions: $ 17,491.00

State/Federal/Other Funds: $ 269,962.00 Source(s): PFA PSIG

Total Estimated Project Cost: $ 337,453.00

Would you be willing to accept cost-share funding in an amount less than requested? [■] YES [ ] NO

V. SIGNATURE OF APPLICANT *(An original signature page must be received with this application)*

I certify that the information contained within this application is true and accurate.

Signature of Project Officer

12/22/17
Date

Public Works Director/City Engineer
Title

VI. Executive Summary

Include a brief Executive Summary (100 words or less) that summarizes the main goals and activities of the project and the expected environmental outcomes that will be achieved. Identification of the total amount of funds being requested along with the required match must be included in the Executive Summary. The summaries will be used in the grant review process and on the RCWD website, for projects that are funded.

The City of Columbia Heights, as part of the Silver Lake TMDL Implementation Plan, proposes to redesign an existing stormwater treatment pond to enhance phosphorous removal efficiency resulting in reduced nutrient inputs to Silver Lake. The existing pond outlet configuration and design results in short-circuiting and maintenance issues for City staff. Activities necessary to implement the project include excavation and grading on the existing site to create a two cell stormwater pond and bioretention area. We are requesting $50,000 from RCWD to assist in funding the estimated $337,453 stormwater retrofit project.

The project is currently on the PFA FY 2018 Project Priority List (PPL) and we are working towards project certification for final plans and specifications. This is planned to be completed by April 2018.

VII. Project Description & Justification

The RCWD has established guidelines for prioritizing projects based on location. Water quality improvement projects should be located to benefit a RCWD Tier I or II lake (see Figure 4.2 in the RCWD's Watershed Management Plan), or a waterbody with an approved Total Maximum Daily Load (TMDL) study. Flood storage and runoff rate control projects should focus on reducing flood peaks in known regional flood hazard and problem areas. Describe the specific watershed management, water quality or quantity need(s) that the project will address and its impact on the target water resource within the District.

- Name the target waterbody benefitting from this project: Silver Lake
- List and describe the Best Management Practices (BMPs) that will be incorporated into this project, including any stormwater reuse components.

The Silver Lake TMDL specifically lists TP as a pollutant of concern and identifies this location as a subwatershed with retrofit potential. BMPs that will be incorporated into the Silver Lake Boat Landing Stormwater Retrofit include:
Two Cell Stormwater pond- The new two cell pond is proposed to be 0.26 acres larger than the existing 0.21 acre pond as well as an increased average pond depth to 4 feet. The new design maximizes the removal efficiency of the pond, specifically TP and TSS loads, within the tight footprint by extended detention within two pools. Bioretention Area - The two cell pond will outlet to a 0.21 acre bioretention area that will further reduce TP and TSS loads by nutrient uptake through ve getation and evapotranspiration. A filtration system is required due to soils which are poorly drained.

- If applicable, describe how the project impacts or protects groundwater resources within the RCWD.

NA

- Describe how long-term operation and maintenance of the project will be accomplished.

City staff will inspect the inlets and outlets of the stormwater cells and the bioretention area and remove trash/debris on a monthly basis during the growing season. Embankments will be inspected annually or after major storm events for signs of erosion and/or failure.

Bioretention vegetation should be inspected annually to ensure that plantings are establishing and healthy, invasive species are kept to a minimum or eradicated, and if vegetation needs to be harvested to facilitate infiltration and water treatement. An inspection of the amount of sedimentation in the two cell pond and the bioretention area should be completed every 2-7 years. When the depth of the pond is <50% of the design depth, cleanout will be necessary.

- If applicable, describe how the project minimizes impervious surface and/or maximizes infiltration.

The poorly drained soils do not allow for infiltration, however, bioretention is proposed to reduce nutrient loads.

- Address how the project relates to and supports existing regional planning such as the RCWD Watershed Management Plan, municipal local surface water management plans, and/or others.

Silver Lake is a Tier II lake as identified in the Rice Creek Watershed District's Management Plan. Under this designation the RCWD supports, through cost share, implementation of stormwater retrofits to reduce the severity and frequency of algal blooms. This project aids the City of Columbia Heights in improving the quality of its surface waters by reducing the amount of pollutants reaching Silver Lake, in response to the TMDL. This project is identified in the TMDL implementation plan and is one of the few remaining projects left to complete within the watershed.

- List all project partners and their respective roles in implementing and/or supporting the project.

The City of Columbia Heights is currently working collaboratively with the Cities of New Brighton and Village of St. Anthony as well as the Three Rivers Park District and Rice Creek Watershed, to develop a comprehensive lake management plan for Silver Lake. The plan will identify TMDL implementation projects that have reduced phosphorous loading per the Silver lake TMDL. This project is one of the few remaining projects listed by the Silver lake TMDL implementation plan.

VIII. Conceptual Design

Provide drawings, maps and/or schematics which graphically illustrate the location and conceptual design of the project. **(Attach separate sheets.)**

IX. Pollutant Reduction Estimates & Other Benefits

Provide a detailed estimate and description of the anticipated pollutant reduction, stormwater rate/volume reduction, groundwater withdrawal reduction, and/or other environmental or natural resource benefits associated with the project. Describe the methods and cite the sources (i.e. P8 model, HydroCAD, MN Stormwater Manual, etc.) used to calculate or estimate the pollutant reductions. **(NOTE: Mandatory for RCWD to consider your proposal!)**

The estimated pollutant reduction for the 22 acre residential tributary area is 8 lb/year TP load and 2.5 tons/year TSS load based on P8 modeling. Additionally the proposed BMPs reduce peak discharge rates from existing by approximately 50% based on HydroCAD modeling. The proposed design provides rate control and flood storage for Atlas 14 rainfall depths, which was not feasible with the existing pond. Proposed native plantings will provide nutrient uptake benefits, facilitate evapotranspiration, provide educational opportunities and improve the aesthetics of the existing City owned parcel adjacent to the boat landing.

X. Detailed Cost Estimate

Provide a detailed and reasonable budget that lists each item for which funding is being requested. You must also list the required local matching contributions and their sources. **(Attach separate sheets.)**

XI. Evaluation

Describe the strategy for monitoring and/or evaluating the results or effectiveness of the project, including how success will be defined and measured.

Ramsey County Environmental Services currently monitors in lake water quality for Silver Lake. This monitoring is planned to be completed annually and is currently used to gauge the effectiveness of other BMPs and the progress towards meeting the goal of the TMDL. Three Rivers park District also completes an annual point intercept plant survey to assess increase in vegetation due to decreases in chlorophyll-a and an increase in secchi depth. These two data points will be used to monitor and evaluate a continued reduction in phosphorous inputs to Silver Lake through implementation of this project.

XII. Education & Demonstration

Demonstrate any potential for education and demonstration and describe what methods will be used to ensure that the purpose and success of the project are made known to the public. **(Applicants must include a public education component into the project.)**

Columbia Heights will complete direct mailings to residents within close proximity to the pond site to engage and inform residents on the need, benefits, and long term impacts of this pond redesign project.

In addition to the direct mailing, the city will include information and updates on the project in their newsletter and on the City of Columbia Heights website

XIII. Key Personnel

List the lead personnel on the project including any known contractors that will be working on the project. Please include contact information.

Kevin Hansen- City of Columbia Heights Public Work Director
kevin.hansen@ci.columbia-heights.mn.us
(763)706-3705

Lauren Letsche- Engineering Technician IV/Stormwater Specialist-City of Columbia Heights
lauren.letsche@ci.columbia-heights.mn.us
(763)706-3709

FORM 6: ENGINEER'S COST OPINION

Silver Lake Boat Landing Stormwater Retrofits

Proj No. 1792-22
WSB & Associates, Inc
701 Xenia Avenue South
Suite 300
Minneapolis, MN 55416
Phone (763) 541-4800
Fax (763) 541-1700
12/20/2017

ITEM	UNIT	PSIG ELIGIBLE ESTIMATED QUANTITY*	PSIG INELIGIBLE ESTIMATED QUANTITY	ENGINEER UNIT PRICE	PSIG ELIGIBLE ENGINEER'S EXTENDED PRICE
MOBILIZATION	LUMP SUM	1		$15,000.00	$15,000.00
CLEARING AND GRUBBING	LUMP SUM	1		$10,000.00	$10,000.00
REMOVE EXISTING CONCRETE STILLING BASIN, CURB & GUTTER, AND WEIR	EA	1		$5,000.00	$5,000.00
REMOVE PIPE CULVERTS	L F	129		$10.00	$1,290.00
REMOVE CHAINLINK FENCE	LF	420		$3.00	$1,260.00
DEWATERING	LUMP SUM	1		$12,500.00	$12,500.00
EXCAVATION	C Y	2404		$13.00	$31,252.00
COMMON BORROW	C Y	196		$15.00	$2,940.00
SELECT GRANULAR BORROW	C Y	103		$20.00	$2,060.00
COMPOST	C Y	26		$50.00	$1,300.00
TOPSOIL	C Y	587		$23.00	$13,501.00
IRON-ENHANCED SAND FILTER MEDIA	C Y	90		$250.00	$22,500.00
GEOTEXTILE FABRIC TYPE V	S Y	726		$2.00	$1,452.00
COARSE FILTER AGGREGATE	C Y	76		$50.00	$3,800.00
6" DRAINTILE WITH UTILITY TRACE WIRE	L F	370		$12.00	$4,440.00
PVC CLEANOUT	EA	4		$350.00	$1,400.00
BIOFILTRATION UNDERDRAIN VALVE	EA	2		$2,000.00	$4,000.00
24" RC PIPE SEWER	LF	150		$65.00	$9,750.00
48" STRUCTURE	EA	3		$3,250.00	$9,750.00
CONSTRUCT MH OVER EXISTING PIPE	EA	1		$800.00	$800.00
MUCK EXCAVATION	CY	367		$20.00	$7,340.00
RANDOM RIPRAP CLASS III	CY	20		$60.00	$1,200.00
SILT FENCE	L F	800		$3.00	$2,400.00
STORM DRAIN INLET PROTECTION	EA	3		$100.00	$300.00
CULVERT END CONTROLS	EA	2		$250.00	$500.00
EROSION CONTROL BLANKET	SY	1319		$6.00	$7,914.00
TURF REINFORCEMENT MAT (TRM)	SY	1300		$10.00	$13,000.00
MULCH	S Y	39			
SEED	AC	1		$1,500.00	$1,500.00
TREES	EA	4		$500.00	$2,000.00
PLUGS	EA	129		$129.00	$16,641.00
BEEHOUSES	EA	3		$50.00	$150.00
TURF ESTABLISHMENT	LUMP SUM	1		$10,000.00	$10,000.00
				SUBTOTAL	**$216,940.00**
				10% CONTINGENCY:	$21,694.00
				APPROXIMATELY 15% INDIRECT COSTS:	$32,541.00
				TOTAL	**$271,200.00**

associated with the construction of the proposed stormwater facility, which will directly reduce total
s loading to Silver Lake. This project is identified in the Silver Lake TMDL Plan.

Minnesota Public Facilities Authority
Point Souce Implementation Grant Program
Form 4a - PSIG Project Costs

Applicant: City of Columbia Heights
Date: 7/28/2017
Project: Silver Lake Boat Landing Stormwater Retrofits
Project Costs Based on: Estimated costs

Instructions: *Fill in yellow cells. See notes at bottom.*

	COLUMN A	COLUMN B	COLUMN C	COLUMN D	COLUMN E
	Start Date	**End Date**	**Total Project Costs**	**ESTIMATED PSIG Eligible Costs**	**Estimated PSIG Eligible %**
1. Construction Costs					
Wastewater Treatment					
Sanitary Sewer Collection					
Stormwater Treatment	01/18/18	09/01/18	$ 271,200	$ 271,200	
Other:					
Subtotal - Construction			*$ 271,200*	*$ 271,200*	*100.0%*
2. Contingencies (5% of construction)			$ 13,560	$ 13,560	
3. Engineering / Other					
Planning / Pre-design	07/24/17	07/31/17	$ 2,017	$ 2,017	
Design (preparation of plans & specs)	07/31/17	09/01/17	$ 20,676	$ 20,676	
Inspection / Construction Mgmt				$ -	
Legal / Financing Related Fees				$ -	
Land Purchase				$ -	
Other: Site monitoring/Permitting	01/01/18	06/01/19	$ 30,000	$ 30,000	
Subtotal - Engineering / Other			*$ 52,693*	*$ 52,693*	
Total Project Costs			**$ 337,453**	**$ 337,453**	*100.0%*

Total PSIG Eligible Cost $ 337,453

Estimated PSIG Grant:
(PSIG Eligible Cost x 80%, $7 million max) **$ 269,962**

Additional funding needed (total project cost minus PSIG grant): **$ 67,491**

Other funding:	RCWD	$ 50,000
Other funding:	City of Columbia Heights	$ 17,491
Other funding:		
	Total:	$ 67,491

Notes:

COLUMN A: For each activity, identify the **START DATE** on which eligible costs were, or are expected to be, incurred. On Form 4b (see tabs below), identify specific prior incurred costs for which the recipient will request reimbursement based on invoices. Items not identified on this form will not be considered for reimbursement. PFA may limit PSIG reimbursement for costs incurred prior to the grant award, even if identified on Form 4b. Submita an updated form prior to grant award. Contact your loan officer for more information.

COLUMN B: For each activity, identify the expected **END DATE** for which the work will be completed.

COLUMN C: Identify the **TOTAL PROJECT COSTS** (wastewater, stormwater or drinking water)

COLUMN D: Identify the **ESTIMATED PSIG ELIGIBLE COSTS** necessary to comply with the TMDL; to reduce the discharge of total phosphorus to one milligram per liter or less; to address the water quality-based effluent limits; or to meet a total nitrogen limit of 10 mg/L for land based treatment. **ATTACH A DETAILED BREAKDOWN** of the estimated PSIG eligible construction costs on a separate sheet (see Form 6). The Minnesota Pollution Control Agency will determine the grant eligible portion of the total construction costs.

COLUMN E: The worksheet will calculate the estimated PSIG eligible percentage based on the estimated PSIG eligible costs in Column D compared to total project costs in Column C. This same percentage will be applied to contingencies and engineering/other project costs.

K:\01792-220\Cad\Plan\01792-220-C-GRAD-PLAN.dwg 9/1/2017 9:03:38 AM

COLUMBIA HEIGHTS
REDISCOVER THE HEIGHTS

WSB

WSB PROJECT NO.:
01792-220

SCALE: 1" = 20'
DESIGN BY:
PLAN BY:
CHECK BY:

REVISIONS

NO.	DATE	DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE: _____ LIC. NO. _____

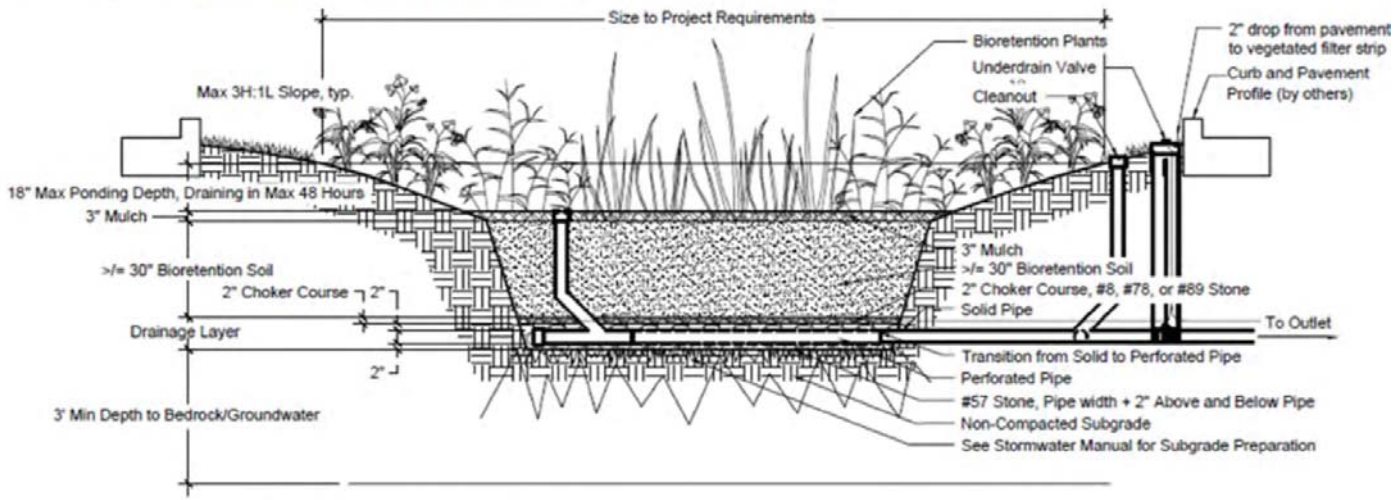
SILVER LAKE BOAT LANDING
STORMWATER RETROFITS

CITY OF COLUMBIA HEIGHTS

GRADING AND
DRAINAGE PLAN

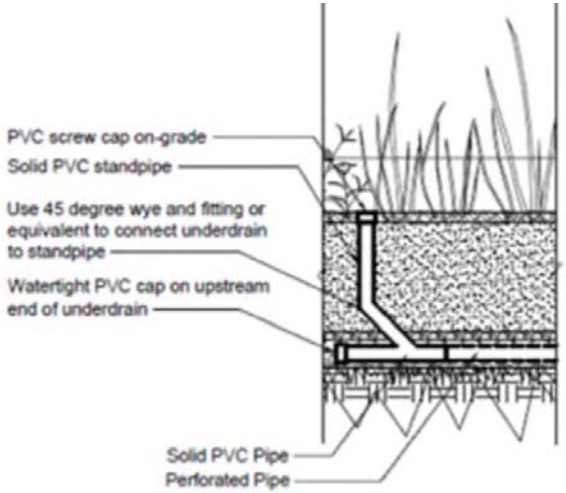
C300

Note: this detail shows and off line system. To show an on line system,this detail should be modified to include an overflow structure, set at the maximum ponding elevation.

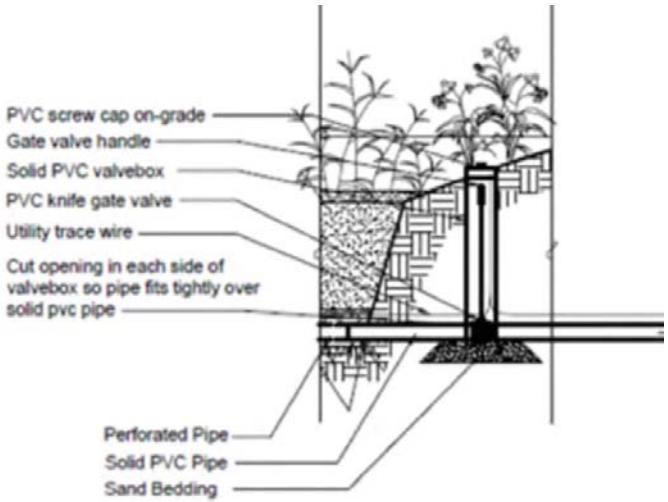


Bioretention Parking Median-Section

Not To Scale



Cleanout



Underdrain Valve

K:\01792-220\Cad\Plan\01792-220-C-GRAD-PLAN.dwg 9/1/2017 9:06:11 AM

COLUMBIA HEIGHTS
REDISCOVER THE HEIGHTS

WSB

WSB PROJECT NO.: 01792-220

SCALE: NO SCALE
DESIGN BY:
PLAN BY:
CHECK BY:

REVISIONS

NO.	DATE	DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

LIC. NO.:
DATE:

SILVER LAKE BOAT LANDING STORMWATER RETROFITS

CITY OF COLUMBIA HEIGHTS

MN STORMWATER MANUAL DETAILS

C302

Memorandum

To: Kyle Axtell
Rice Creek Watershed District

From: Garrett Monson, P.E., Greg Bowles, P.E.

Through: Chris Otterness, P.E.

Subject: City of Columbia Heights – 2018 Urban Stormwater Cost-Share Program Application for Silver Lake Boat Landing Stormwater Retrofits

Date: January 25, 2018

Project: File 5555-061

By task order 2017-023 dated December 1, 2017, HEI is providing the Rice Creek Watershed District (District) a technical review for the 2018 Urban Stormwater Remediation Cost Share grant applications. The review includes not only evaluating consistency with the goals of the Urban Stormwater Remediation Program, but the technical merits and feasibility of the proposed project and cost for reducing runoff volumes and loads. Based upon our review of the application by the City of Columbia Heights, we offer the following comments for your use:

- The applicant is proposing to retrofit and expand an existing BMP that is currently short circuiting near the Silver Lake boat landing. The BMP discharges to Silver Lake, which is a Tier II lake.
- This project does not include volume reduction, which is the highest priority BMP category for the District. However, the project is consistent with both the Silver Lake TMDL and District Watershed Management Plan. The BMP will be a combination NURP pond and bioretention basin. The City will maintain the BMP.
- The applicant stated that P8 estimated the expansion of the BMP would remove 8 lbs. of TP annually and 5,000 lbs. of TSS annually.
- Based on the nutrient removal estimates provided by the applicant, the average annual cost is approximately $1,406 per pound of TP and $2.25 per pound of TSS, based on a 30-year capital life of the BMP.
- The effectiveness of the project would be determined by ongoing monitoring performed by Ramsey County Environmental Services and the Three Rivers Park District within Silver Lake.
- The project has moderate educational opportunity. The applicant is proposing direct mailings to the surrounding community and publishing information on the project in a City publication and on the City website.

Please call me at 763-493-4522 if I may be of further assistance with regard to this matter.

Rice Creek Watershed District 2018
Urban Stormwater Remediation Cost-Share Program
Application Form

Incomplete applications will be returned to the applicant.

I. APPLICANT INFORMATION

Organization (to be named as Grantee): City of Fridley

Street Address: 6431 University Avenue NE

City, State, Zip: Fridley, MN 55432

II. PROJECT CONTACTS

Project Officer: James Kosluchar, PE
Telephone: (763) 572-3550
Fax:
Email: jim.kosluchar@fridleymn.gov
Tax Status: Local Government

Financial Officer: Shelly Peterson
Telephone: (763) 572-3520
Fax:
Email: shelly.peterson@fridleymn.gov
Tax ID#: 41-6007700

(e.g., local government, non-profit 501(c)(3), private business, etc.)

III. PROJECT INFORMATION

Project Name: 69th Avenue Road Diet and Median Infiltration

Location(s) of Project: 69th Avenue NE from Central Avenue to Fridley City Limits (see location map)

City: Fridley State: MN County: Anoka

Project Start Date: 06/15/2018 Project Completion Date: 09/15/2018

Project Type (check only those that directly apply):

- [x] Water Quality Treatment Project
- [x] Runoff Volume Control / Flood Storage Project
- [ ] Peak Runoff Rate Control Project
- [ ] Stormwater Reuse Irrigation Project
- [ ] Other

Is a RCWD Rule C permit from the RCWD required for this project? [ ] YES [■] NO [ ] UNKNOWN

IV. COST-SHARE REQUEST

RCWD Cost-Share Funds Requested: $ 50,000.00

Local Matching Contributions: $ 300,263.00

State/Federal/Other Funds: $ 0.00 Source(s):

Total Estimated Project Cost: $ 350,263.00

Would you be willing to accept cost-share funding in an amount less than requested? [■] YES [ ] NO

V. SIGNATURE OF APPLICANT *(An original signature page must be received with this application)*

I certify that the information contained within this application is true and accurate.

Signature of Project Officer Date 12/28/17

Director of Public Works/City Engineer
Title

VI. Executive Summary

Include a brief Executive Summary (100 words or less) that summarizes the main goals and activities of the project and the expected environmental outcomes that will be achieved. Identification of the total amount of funds being requested along with the required match must be included in the Executive Summary. The summaries will be used in the grant review process and on the RCWD website, for projects that are funded.

The goals and activities of this project include reduction of impervious surface and strong water quality improvements associated with a half-mile resurfacing project by the City of Fridley. The proposed project would reduce impervious surface on 69th Avenue by 1.17 acres, and treat 74% of the corridor's stormwater runoff . This would be accomplished through reduction in pavement and construction of a vegetated swale within a median which will provide infiltration treatment, as well as aesthetic improvements.

VII. Project Description & Justification

The RCWD has established guidelines for prioritizing projects based on location. Water quality improvement projects should be located to benefit a RCWD Tier I or II lake (see Figure 4.2 in the RCWD's Watershed Management Plan), or a waterbody with an approved Total Maximum Daily Load (TMDL) study. Flood storage and runoff rate control projects should focus on reducing flood peaks in known regional flood hazard and problem areas. Describe the specific watershed management, water quality or quantity need(s) that the project will address and its impact on the target water resource within the District.

- Name the target waterbody benefitting from this project: Rice Creek, Locke Lake, and the Mississippi River
- List and describe the Best Management Practices (BMPs) that will be incorporated into this project, including any stormwater reuse components.

69th Avenue is a well-traveled east-west road connecting Central Avenue and Interstate 10. Within Fridley's limits, Medtronic's Rice Creek campus, Cummins Engineering, and Rice Creek townhomes all maintain entrances onto 69th Avenue. The project proposes to disconnect the impervious surface along 69th Avenue and redirect runoff to a swale vegetated with native and low-maintenance grasses. This BMP would treat 74% of the stormwater runoff from this site. This BMP would also be the first use of low-maintenance grasses in a City right-of-way, serving as a demonstration project for future City road reconstruction projects.

- If applicable, describe how the project impacts or protects groundwater resources within the RCWD.

The project proposes to infiltrate stormwater along a residential/commercial roadway which will provide groundwater recharge that currently does not exist. The Type A soils are projected to allow a high infiltration rate (0.8 in/hr).

- Describe how long-term operation and maintenance of the project will be accomplished.

The project proposes to use low-maintenance grass convert a an overly-wide street into a parkway. Maintenance of the drainage system and plantings will be the responsibility of the City of Fridley. It is noted that a reduction in overall maintenance is anticipated, as deicing, plowing, and pavement repair will decrease significantly along this roadway.

- If applicable, describe how the project minimizes impervious surface and/or maximizes infiltration.

The project reduces lane widths of 69th Avenue, which will remain within standards, resulting in a reduction of impervious surface on this roadway of 30%. The project maximizes infiltration along this roadway by routing 74% of the storm water from impervious surfaces to a swale capable of providing treatment above and beyond the water quality volume. Trees will also be planted alongside the swale to provide additional infiltration.

- Address how the project relates to and supports existing regional planning such as the RCWD Watershed Management Plan, municipal local surface water management plans, and/or others.

The project fulfills several goals and policies in the RCWD WMP, including:
5.5-2 … mitigate the increase in the rate and volume of runoff resulting from land disturbance….
5.5-6 Foster and encourage the use of regional Best Management Practices, to reduce the rate and volume of runoff.
5.4-4 Look for opportunities to establish voluntary rate control measures and other practices to improve drainage...

- List all project partners and their respective roles in implementing and/or supporting the project.

The City of Fridley will construct and maintain the project. Trees will be provided through the City's "Improving Community Forests through Citizen Engagement" grant from the DNR. The City's corporate volunteer group, including employees of Medtronic and Cummins that work along the 69th Avenue corridor, haveoffered their partnership in providing volunteers for tree plantings.Medtronic has offered additional assistance with watering and care of new plantings. The RCWD would become a partner with these entities in support of this project.

VIII. Conceptual Design

Provide drawings, maps and/or schematics which graphically illustrate the location and conceptual design of the project. **(Attach separate sheets.)**

IX. Pollutant Reduction Estimates & Other Benefits

Provide a detailed estimate and description of the anticipated pollutant reduction, stormwater rate/volume reduction, groundwater withdrawal reduction, and/or other environmental or natural resource benefits associated with the project. Describe the methods and cite the sources (i.e. P8 model, HydroCAD, MN Stormwater Manual, etc.) used to calculate or estimate the pollutant reductions. **(NOTE: Mandatory for RCWD to consider your proposal!)**

Annual Infiltration Basin Removals are provided using the MIDS calculator for over one million gallons of stormwater runoff per year treated by this project, including removal of nearly 4 pounds of Phosphorus and over 700 pounds of Total Suspended Solids per year.

X. Detailed Cost Estimate

Provide a detailed and reasonable budget that lists each item for which funding is being requested. You must also list the required local matching contributions and their sources. **(Attach separate sheets.)**

XI. Evaluation

Describe the strategy for monitoring and/or evaluating the results or effectiveness of the project, including how success will be defined and measured.

Runoff rates and concentrations of pollutants will be sampled prior to the project and after the project to illustrate its impacts.

XII. Education & Demonstration

Demonstrate any potential for education and demonstration and describe what methods will be used to ensure that the purpose and success of the project are made known to the public. **(Applicants must include a public education component into the project.)**

Signage is proposed to be installed along a trail on the north side of the project at two locations. This informational signage would inform walkers and cyclists, including the businesses and residents in the area of the project partners, benefits of native vegetation, and the impact of impervious surface on water quality.

XIII. Key Personnel

List the lead personnel on the project including any known contractors that will be working on the project. Please include contact information.

The project will be bid in the spring of 2018, so no contractor is yet known. City of Fridley key staff involved in the project include Jim Kosluchar: Public Works Director/City Engineer, Brandon Brodhag: Project Engineer, Rachel Workin: Environmental Planner, and Jeff Jensen: Street/Parks Operations Manager.

CITY OF FRIDLEY
69TH AVENUE REHAB PROJECT ST2018-01
STORM INFILTRATION SWALE
OLD CENTRAL AVE TO CITY LIMITS

NOTE: RED AREAS REPRESENT PROPOSED STORM INFILTRATION SWALE

Memorandum

To: Kyle Axtell
Rice Creek Watershed District

From: Garrett Monson, P.E., Greg Bowles, P.E.

Through: Chris Otterness, P.E.

Subject: City of Fridley – 2018 Urban Stormwater Cost-Share Program Application for 69th Ave Road Diet and Median Infiltration

Date: January 25, 2018

Project: File 5555-061

By task order 2017-023 dated December 1, 2017, HEI is providing the Rice Creek Watershed District (District) a technical review for the 2018 Urban Stormwater Remediation Cost Share grant applications. The review includes not only evaluating consistency with the goals of the Urban Stormwater Remediation Program, but the technical merits and feasibility of the proposed project and cost for reducing runoff volumes and loads. Based upon our review of the application by the City of Fridley, we offer the following comments for your use:

- The applicant is proposing to reduce the amount of impervious surface of 69th Ave by 1.17 acres through replacing the median with an infiltration BMP and native grasses. The BMP is within the direct drainage of Rice Creek, which is a listed impaired water body.
- This project includes volume reduction, which is the highest priority BMP category for the District. The project also reduces and disconnects impervious surface. The City will maintain the BMP.
- The applicant provided MIDS calculations estimating the BMP would remove 5.3 lbs. of TP annually and 969 lbs. of TSS annually.
- Based on the nutrient removal estimates provided by the applicant, the average annual cost is approximately $2,191 per pound of TP and $12.05 per pound of TSS, based on a 30-year capital life of the BMP.
- The effectiveness of the project would be determined by measuring the rate and concentration of runoff from the BMP drainage area before and after project completion.
- The project has moderate/high educational opportunity. The applicant is proposing signage along the trails paralleling 69th Avenue.

Please call me at 763-493-4522 if I may be of further assistance with regard to this matter.

Rice Creek Watershed District 2018
Urban Stormwater Remediation Cost-Share Program
Application Form

Incomplete applications will be returned to the applicant.

I. APPLICANT INFORMATION

Organization (to be named as Grantee): City of Hugo

Street Address: 14669 Fitzgerald Avenue North

City, State, Zip: Hugo, MN 55038

II. PROJECT CONTACTS

Project Officer: Mark Erichson

Telephone: (651) 286-8463

Fax: _____

Email: MErichson@wsbeng.com

Tax Status: Private Business

(e.g., local government, non-profit 501(c)(3), private business, etc.)

Financial Officer: _____

Telephone: _____

Fax: _____

Email: _____

Tax ID#: _____

III. PROJECT INFORMATION

Project Name: Stormwater Asset Management Program (SWAMP)

Location(s) of Project: City-wide

City: Hugo State: MN County: Washington

Project Start Date: 01/01/2018 Project Completion Date: _____

Project Type (check only those that directly apply):

- [x] Water Quality Treatment Project
- [ ] Runoff Volume Control / Flood Storage Project
- [ ] Peak Runoff Rate Control Project
- [ ] Stormwater Reuse Irrigation Project
- [x] Other

Is a RCWD Rule C permit from the RCWD required for this project? [ ] YES [■] NO [ ] UNKNOWN

IV. COST-SHARE REQUEST

RCWD Cost-Share Funds Requested: $ 12,000.00

Local Matching Contributions: $ 12,000.00

State/Federal/Other Funds: $ 0.00 Source(s): _____

Total Estimated Project Cost: $ 24,000.00

Would you be willing to accept cost-share funding in an amount less than requested? [■] YES [ ] NO

V. SIGNATURE OF APPLICANT *(An original signature page must be received with this application)*

I certify that the information contained within this application is true and accurate.

Mark Erichson
Signature of Project Officer

12-29-17
Date

City Engineer
Title

VI. Executive Summary

Include a brief Executive Summary (100 words or less) that summarizes the main goals and activities of the project and the expected environmental outcomes that will be achieved. Identification of the total amount of funds being requested along with the required match must be included in the Executive Summary. The summaries will be used in the grant review process and on the RCWD website, for projects that are funded.

Stormwater Asset Management Program (SWAMP) was designed to customize prioritization for annual BMP inspection and maintenance activities. Information from the city's BMP inventory and drainage areas will be incorporated into SWAMP to allow for efficient management of MS4 basins. Results of inspections and maintenance prioritizations can also be tied to each basin to efficiently manage infrastructure and annual reporting. The SWAMP calculates annual TSS and TP removal efficiencies and load reductions provided by each basin. With this information, a cost/benefit for completing maintenance activities or improvement projects can be established for each basin, creating a road map to prioritize, budget, and manage Hugo's stormwater infrastructure.

VII. Project Description & Justification

The RCWD has established guidelines for prioritizing projects based on location. Water quality improvement projects should be located to benefit a RCWD Tier I or II lake (see Figure 4.2 in the RCWD's Watershed Management Plan), or a waterbody with an approved Total Maximum Daily Load (TMDL) study. Flood storage and runoff rate control projects should focus on reducing flood peaks in known regional flood hazard and problem areas. Describe the specific watershed management, water quality or quantity need(s) that the project will address and its impact on the target water resource within the District.

- Name the target waterbody benefitting from this project: Rice Creek, Clearwater Creek, Bald Eagle, Oneka
- List and describe the Best Management Practices (BMPs) that will be incorporated into this project, including any stormwater reuse components.

Best Management Practices include scheduling, tracking, and storing MS4 infrastructure inspections, budgeting stormwater inspection and maintenance activities, tracking TSS and TP load reductions for project development or TMDL accounting, and allowing City's to rank pond maintenance projects in terms of pollutant removal and cost-benefit.

- If applicable, describe how the project impacts or protects groundwater resources within the RCWD.

N/A

- Describe how long-term operation and maintenance of the project will be accomplished.

The SWAMP program is used to help Hugo develop a standard operating procedure for inspections and maintenance of their MS4 owned and operated facilities (BMPs). The SWAMP program is a tool to aid City staff in selection of priority locations to conduct inspection and maintenance activities on City and privately owned BMPs. The program dynamically updates loading estimates based upon inspection activities; therefore keeping the information current and useful for many years into the future. The program will receive annual routine updates.

- If applicable, describe how the project minimizes impervious surface and/or maximizes infiltration.

N/A

- Address how the project relates to and supports existing regional planning such as the RCWD Watershed Management Plan, municipal local surface water management plans, and/or others.

The SWAMP is designed to help City's meet written procedure and treatment effectiveness requirements for stormwater basins and smaller structural pollutant devices as part of the MS4 permit. The program also helps in budgeting for stormwater maintenance in the local surface water management plan and the City's CIP. Water quality is a main priority identified in Hugo's local surface water management plan and the SWAMP helps the City to effectively utilize the existing BMPs in their TP removal.

- List all project partners and their respective roles in implementing and/or supporting the project.

The City of Hugo will be the main project sponsor and be the project manager of the project. The City of Hugo will share information from the program with private BMP owners within the City to assist in their tracking BMP inspection and maintenance activities, as well as generating cost benefit assessments on their maintenance activities. Rice Creek Watershed will be a project sponsor and have a support role in the project.

VIII. Conceptual Design

Provide drawings, maps and/or schematics which graphically illustrate the location and conceptual design of the project. (Attach separate sheets.)

IX. Pollutant Reduction Estimates & Other Benefits

Provide a detailed estimate and description of the anticipated pollutant reduction, stormwater rate/volume reduction, groundwater withdrawal reduction, and/or other environmental or natural resource benefits associated with the project. Describe the methods and cite the sources (i.e. P8 model, HydroCAD, MN Stormwater Manual, etc.) used to calculate or estimate the pollutant reductions. (NOTE: Mandatory for RCWD to consider your proposal!)

This program will yield significant pollutant removals for years to come. Pollutant reduction estimates will vary for each project identified for maintenance. The program goal is to ensure the dollars that are allocated for maintenance are put to the greatest and best use. The program has incorporated a PondNet water quality model which estimates TSS and TP load reductions from maintenance activities and helps guide the city to conduct the appropriate level of maintenance to generate the highest pollutant removal life cycle cost benefit. The program also aides the City in identifying undersized BMPs for the drainage areas and recommends locations where BMP enhancements or retrofits are needed.

X. Detailed Cost Estimate

Provide a detailed and reasonable budget that lists each item for which funding is being requested. You must also list the required local matching contributions and their sources. (Attach separate sheets.)

XI. Evaluation

Describe the strategy for monitoring and/or evaluating the results or effectiveness of the project, including how success will be defined and measured.

The program is the strategy that the City will use to guide its BMP inspection and maintenance activities. The City will define success as utilizing the program to guide an annual inspection program that leads to an ongoing maintenance program that is predictive in nature resulting in maintenance activities occurring to preserve conveyance and water quality function in perpetuity.

XII. Education & Demonstration

Demonstrate any potential for education and demonstration and describe what methods will be used to ensure that the purpose and success of the project are made known to the public. (Applicants must include a public education component into the project.)

The SWAMP program provides calculated responses regarding pond and BMP maintenance priorities to residents and members of City Council when questions arise. The information in the program allows the City staff to better understand resident complaints and provide quick responses where the BMP of concern is on the inspection and maintenance schedule. The program is also be a great educational tool to help inform City Council in understanding upcoming maintenance requirements and appropriately allocate funds in the CIP for BMP maintenance.

XIII. Key Personnel

List the lead personnel on the project including any known contractors that will be working on the project. Please include contact information.

Scott Anderson - Hugo Public Works Director
651-762-6326

Mark Erichson - City Engineer
651-286-8463

Rice Creek Watershed District 2018
Urban Stormwater Remediation Cost-Share Program
Application Form

Incomplete applications will be returned to the applicant.

I. APPLICANT INFORMATION

Organization (to be named as Grantee): City of Lino Lakes

Street Address: 600 Town Center Parkway

City, State, Zip: Lino Lakes, MN 55014

II. PROJECT CONTACTS

Project Officer: Michael Grochala

Telephone: (651) 982-2427

Fax: _____

Email: michael.grochala@ci.lino-lakes.mn.us

Tax Status: Local Government

(e.g., local government, non-profit 501(c)(3), private business, etc.)

Financial Officer: Sarah Cotton

Telephone: (651) 982-2410

Fax: _____

Email: sarah.cotton@ci.lino-lakes.mn.us

Tax ID#: 41-0883446

III. PROJECT INFORMATION

Project Name: LaMotte Neighborhood Biofiltration Basin

Location(s) of Project: City Park at Lamotte Drive and Lamotte Circle

City: Lino Lakes State: MN County: Anoka

Project Start Date: 05/01/2018 Project Completion Date: 12/31/2019

Project Type (check only those that directly apply):

- [x] Water Quality Treatment Project
- [ ] Runoff Volume Control / Flood Storage Project
- [ ] Peak Runoff Rate Control Project
- [ ] Stormwater Reuse Irrigation Project
- [ ] Other

Is a RCWD Rule C permit from the RCWD required for this project? [ ] YES [■] NO [ ] UNKNOWN

IV. COST-SHARE REQUEST

RCWD Cost-Share Funds Requested: $ 39,500.00

Local Matching Contributions: $ 39,500.00

State/Federal/Other Funds: $ 0.00 Source(s): _____

Total Estimated Project Cost: $ 79,000.00

Would you be willing to accept cost-share funding in an amount less than requested? [■] YES [ ] NO

V. SIGNATURE OF APPLICANT *(An original signature page must be received with this application)*

I certify that the information contained within this application is true and accurate.

Signature of Project Officer

12/29/17
Date

Community Development Director
Title

VI. Executive Summary

Include a brief Executive Summary (100 words or less) that summarizes the main goals and activities of the project and the expected environmental outcomes that will be achieved. Identification of the total amount of funds being requested along with the required match must be included in the Executive Summary. The summaries will be used in the grant review process and on the RCWD website, for projects that are funded.

Centerville Lake is listed on the MPCA Impaired Waters List as impaired for excess nutrients. A TMDL has been established for Centerville Lake in the Peltier-Centerville Lakes TMDL Report (2013). The Lamotte neighborhood project will consist of roadway, drainage, sanitary and watermain improvements. The proposed Lamotte Neighborhood Stormwater Biofiltration Basin will treat 7.8 acres of currently untreated stormwater prior to discharging into Centerville Lake, resulting in a removal of 3 pounds per year of total phosphorous. The City of Lino Lakes is requesting $39,500 of grant funds to match their $39,500 in local fund contribution to assist in providing stormwater water quality treatment to a previously untreated drainage area that is directly tributary to Centerville Lake.

VII. Project Description & Justification

The RCWD has established guidelines for prioritizing projects based on location. Water quality improvement projects should be located to benefit a RCWD Tier I or II lake (see Figure 4.2 in the RCWD's Watershed Management Plan), or a waterbody with an approved Total Maximum Daily Load (TMDL) study. Flood storage and runoff rate control projects should focus on reducing flood peaks in known regional flood hazard and problem areas. Describe the specific watershed management, water quality or quantity need(s) that the project will address and its impact on the target water resource within the District.

- Name the target waterbody benefitting from this project: Centerville Lake
- List and describe the Best Management Practices (BMPs) that will be incorporated into this project, including any stormwater reuse components.

The City will be completing roadway and utility improvements including a full reconstruction and addition of curb and gutter, stormsewer, maintenance of sanitary sewer and the extension of watermain to the neighborhood. The City is requesting funds for the Stormwater Biofiltration Basin only. The Lamotte neighborhood improvement project will not trigger RCWD Stormwater Management Rule C, therefore all stormwater management and water quality treatment will be done on behalf of the interest and desire of the neighborhood residents and the City of Lino Lakes.

- If applicable, describe how the project impacts or protects groundwater resources within the RCWD.

Six geotechnical borings were completed within the Lamotte neighborhood and only one encountered groundwater. The groundwater was measured at approximately 6-ft below the ground surface, so there are not anticipated to be any impacts to groundwater. The biofiltration basin will include an underdrain due to clayey underlying soils, therefore no interaction between the stormwater runoff and groundwater is expected.

- Describe how long-term operation and maintenance of the project will be accomplished.

The stormwater BMP will become a part of the City's stormwater program and will be included in the annual and long-term maintenance plans.

- If applicable, describe how the project minimizes impervious surface and/or maximizes infiltration.

There will be no increase in impervious surface as a result of this project - the proposed roadway will match existing road widths. Infiltration was considered as a stormwater BMP, however due to underlying clayey soils, it is not recommended.

- Address how the project relates to and supports existing regional planning such as the RCWD Watershed Management Plan, municipal local surface water management plans, and/or others.

According to the Peltier Lake and Centerville Lake TMDL, phosphorous loading from watershed runoff makes up approimately 24% of the TP loading to the lake. Although the TMDL cites a 0% Load Reduction for Watershed TP loading to Centerville Lake, the 3lb TP/yr of removal will benefit the overall lake reduction goal of 45% TP from existing conditions. In the City's existing Local Surface Water Management Plan, water quality improvements for Centerville Lake in conjunction with the street and utility project has been identified as the primary subwatershed action.

- List all project partners and their respective roles in implementing and/or supporting the project.

N/A

VIII. Conceptual Design

Provide drawings, maps and/or schematics which graphically illustrate the location and conceptual design of the project. **(Attach separate sheets.)**

IX. Pollutant Reduction Estimates & Other Benefits

Provide a detailed estimate and description of the anticipated pollutant reduction, stormwater rate/volume reduction, groundwater withdrawal reduction, and/or other environmental or natural resource benefits associated with the project. Describe the methods and cite the sources (i.e. P8 model, HydroCAD, MN Stormwater Manual, etc.) used to calculate or estimate the pollutant reductions. **(NOTE: Mandatory for RCWD to consider your proposal!)**

The Minnesota Pollution Control Agency (MPCA) Minimal Impact Design Standards (MIDS) BMP calculator was used to show a reduction of 3 lb/yr of Total Phosphorous and 660 lb/yr of Total Suspended Solids. The calculator assumes a surface area that is consistent with what is shown in the conceptual design, and overall provides 60% TP removal, which is consistent with the Minnesota Stormwater Manual's estimates for a biofiltration basin stormwater BMP.

The existing discharge point from the Lamotte neighborhood to Centerville Lake is a drainage outlet open channel that is susceptible to erosion and sedimentation. The final design for the stormwater biofiltration BMP will provide non-erosive flow velocities (less than 4 feet per second during the 10-year storm event) to ensure that the channel does suffer from erosion and sedimentation due to the proposed BMP.

X. Detailed Cost Estimate

Provide a detailed and reasonable budget that lists each item for which funding is being requested. You must also list the required local matching contributions and their sources. **(Attach separate sheets.)**

XI. Evaluation

Describe the strategy for monitoring and/or evaluating the results or effectiveness of the project, including how success will be defined and measured.

Centerville Lake has been previously monitored by the MPCA. Based on TMDL Report, Centerville Lake displays relatively higher chlorophyll concentrations as compared to TP, indicating that the lake is eutrophic. We propose including future monitoring activities led by a citizen committee to evaluate the effects of the proposed Stormwater BMP. The data collected by the MPCA will serve as a baseline for transparency, cholorphyll-a and total phosphorus indicators on the lake's health. It is anticipated that with the implementation of this water quality BMP in an area where there was previously no treatment, the total phosphorus entering the lake will be reduced which may be shown by an improvement in transparency, cholorphyll-a, and total phosphorus measurements.

XII. Education & Demonstration

Demonstrate any potential for education and demonstration and describe what methods will be used to ensure that the purpose and success of the project are made known to the public. **(Applicants must include a public education component into the project.)**

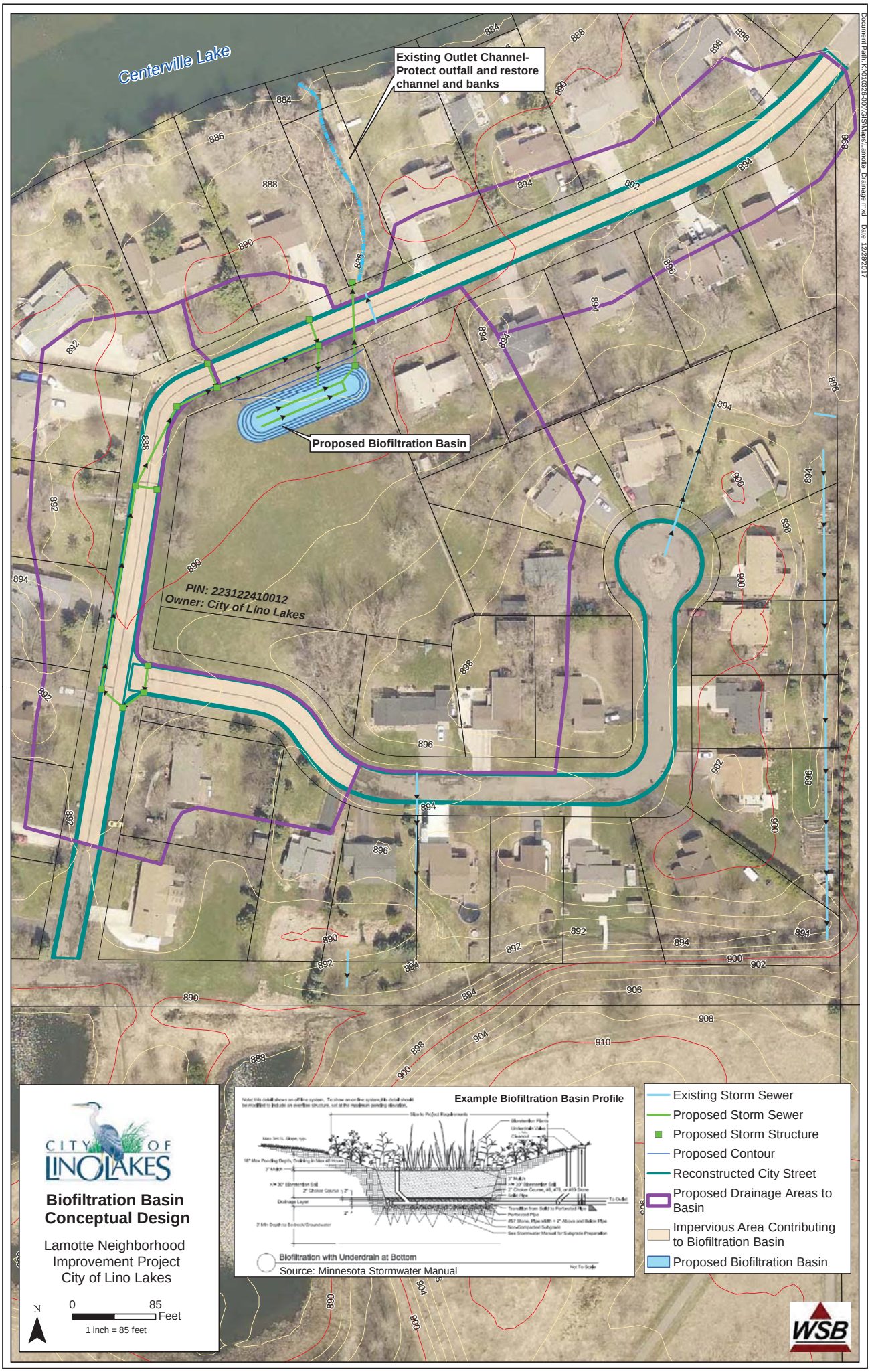
There have been various public and neighborhood meetings for the Lamotte neighborhood improvement project and residents are engaged and interested in providing stormwater treatment for their neighborhood. It is anticipated that the conversation on the purpose and success of the BMP will continue through future neighborhood meetings as well as be included in mailer updates to ensure that information is being made known to the public.

Depending on interest from residents, the City will include an informational sign that designates the BMP and its purpose.

XIII. Key Personnel

List the lead personnel on the project including any known contractors that will be working on the project. Please include contact information.

Michael Grochala - Community Development Director
Diane Hankee - City Engineer
Jim Stremel - Project Manager
Katy Thompson - Water Resources Engineer
Contractor and Erosion Control Specialist TBD


Centerville Lake
Existing Outlet Channel- Protect outfall and restore channel and banks
Proposed Biofiltration Basin
PIN: 223122410012
Owner: City of Lino Lakes
Biofiltration Basin Conceptual Design
Lamotte Neighborhood Improvement Project
City of Lino Lakes
N
0
85
Feet
1 inch = 85 feet
Example Biofiltration Basin Profile
Biofiltration with Underdrain at Bottom
Source: Minnesota Stormwater Manual
Existing Storm Sewer
Proposed Storm Sewer
Proposed Storm Structure
Proposed Contour
Reconstructed City Street
Proposed Drainage Areas to Basin
Impervious Area Contributing to Biofiltration Basin
Proposed Biofiltration Basin
WSB

LAMOTTE NEIGHBORHOOD STORMWATER BMP COST ESTIMATE

1	MOBILIZATION	LS	1	$3,500.00	$3,500.00
2	DEWATERING	LS	1	$5,000.00	$5,000.00
3	PERFORATED 6" DRAIN TILE	LF	220	$20.00	$4,400.00
4	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 1	EACH	1	$3,000.00	$3,000.00
5	COMMON EXCAVATION - BIOFILTRATION BASIN	CY	450	$25.00	$11,250.00
6	COMMON EXCAVATION - LAKE OUTLET CHANNEL	CY	300	$25.00	$7,500.00
7	60/40 SAND COMPOST MIX	CY	150	$38.00	$5,700.00
8	GEOTEXTILE FABRIC TYPE 3	SY	400	$2.50	$1,000.00
9	COARSE FILTER AGGREGATE	CY	50	$50.00	$2,500.00
10	RIP RAP CLASS III	CY	10	$95.00	$950.00
11	EROSION CONTROL BLANKET CATEGORY 3N	SY	1,520	$3.00	$4,560.00
12	SEED MIX 33-261	SY	600	$7.00	$4,200.00
13	SEED MIX 33-262	SY	900	$7.00	$6,300.00
				TOTAL	**$59,860.00**
				CONTINGENCY TOTAL (10%)	**$5,986.00**
				SUBTOTAL TOTAL	**$65,846.00**
				INDIRECT COST TOTAL (20%)	**$13,169.20**
				TOTAL	**$79,000.00**

Project Information

Calculator Version:	Version 3: January 2017
Project Name:	Lamotte Neighborhood Biofiltration Basin
User Name / Company Name:	WSB/City of Lino Lakes
Date:	12/28/2017
Project Description:	
Construction Permit?:	No

Site Information

Retention Requirement (inches):	1.1
Site's Zip Code:	55038
Annual Rainfall (inches):	31.6
Phosphorus EMC (mg/l):	0.3
TSS EMC (mg/l):	54.5

Total Site Area

Land Cover	A Soils (acres)	B Soils (acres)	C Soils (acres)	D Soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/open space or reforested land					0
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed				6.81	6.81
				Impervious Area (acres)	0.99
				Total Area (acres)	7.8

Site Areas Routed to BMPs

Land Cover	A Soils (acres)	B Soils (acres)	C Soils (acres)	D Soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/open space or reforested land					0
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed				6.81	6.81
				Impervious Area (acres)	0.99
				Total Area (acres)	7.8

Summary Information

Performance Goal Requirement

Performance goal volume retention requirement:	3953	ft3
Volume removed by BMPs towards performance goal:	922	ft3
Percent volume removed towards performance goal	**23**	**%**

Annual Volume and Pollutant Load Reductions

Post development annual runoff volume	6.2639	acre-ft
Annual runoff volume removed by BMPs:	1.7283	acre-ft
Percent annual runoff volume removed:	**28**	**%**
Post development annual particulate P load:	2.811	lbs
Annual particulate P removed by BMPs:	2.404	lbs
Post development annual dissolved P load:	2.3	lbs
Annual dissolved P removed by BMPs:	0.668	lbs
Percent annual total phosphorus removed:	**60**	**%**
Post development annual TSS load:	928.6	lbs
Annual TSS removed by BMPs:	659.6	lbs
Percent annual TSS removed:	**71**	**%**

BMP Summary

Performance Goal Summary

BMP Name	BMP Volume Capacity (ft3)	Volume Recieved (ft3)	Volume Retained (ft3)	Volume Outflow (ft3)	Percent Retained (%)
1 - Bioretention basin (with underdrain)	922	3953	922	3032	23

Annual Volume Summary

BMP Name	Volume From Direct Watershed (acre-ft)	Volume From Upstream BMPs (acre-ft)	Volume Retained (acre-ft)	Volume outflow (acre-ft)	Percent Retained (%)
1 - Bioretention basin (with underdrain)	6.2639	0	1.7283	4.5356	28

Particulate Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
1 - Bioretention basin (with underdrain)	2.8112	0	2.4041	0.4071	86

Dissolved Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
1 - Bioretention basin (with underdrain)	2.3001	0	0.6679	1.6322	29

TSS Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
1 - Bioretention basin (with underdrain)	928.56	0	659.62	268.94	71

BMP Schematic

Memorandum

To: Kyle Axtell
Rice Creek Watershed District

From: Garrett Monson, P.E., Greg Bowles, P.E.

Through: Chris Otterness, P.E.

Subject: City of Lino Lakes – 2018 Urban Stormwater Cost-Share Program Application for LaMotte Neighborhood Biofiltration Basin

Date: January 25, 2018

Project: File 5555-061

By task order 2017-023 dated December 1, 2017, HEI is providing the Rice Creek Watershed District (District) a technical review for the 2018 Urban Stormwater Remediation Cost Share grant applications. The review includes not only evaluating consistency with the goals of the Urban Stormwater Remediation Program, but the technical merits and feasibility of the proposed project and cost for reducing runoff volumes and loads. Based upon our review of the application by the City of Lino Lakes, we offer the following comments for your use:

- The applicant is proposing to build a bioretention BMP in LaMotte park as part of their street reconstruction project. Treatment would not be required for this project under current District Rules. The project would provide treatment for a previous untreated area that drains directly to Centerville Lake, which is a Tier I lake.
- This project does not include volume reduction, which is the highest priority BMP category for the District. However, the project does provide treatment to City streets where not previous treatment occurred. The City will maintain the bioretention BMP.
- The applicant stated that MIDs estimated the BMP would remove 3 lbs. of TP annually and 660 lbs. of TSS annually.
- Based on the nutrient removal estimates provided by the applicant, the average annual cost is approximately $878 per pound of TP and $4 per pound of TSS, based on a 30-year capital life of the BMP.
- The effectiveness of the project would be determined by continued monitoring of Centerville Lake as part of a TMDL.
- The project has moderate/high educational opportunity. The applicant is proposing to continue engaging the neighborhood in project meetings and add signage describing the BMP and its purpose.

Please call me at 763-493-4522 if I may be of further assistance with regard to this matter.

Rice Creek Watershed District 2018
Urban Stormwater Remediation Cost-Share Program
Application Form

Incomplete applications will be returned to the applicant.

I. APPLICANT INFORMATION

Organization (to be named as Grantee): City of Lino Lakes

Street Address: 600 Town Center Parkway

City, State, Zip: Lino Lakes, MN 55014

II. PROJECT CONTACTS

Project Officer: Michael Grochala

Telephone: (651) 982-2427

Fax: _____

Email: michael.grochala@ci.lino-lakes.mn.us

Tax Status: Local Government

Financial Officer: Sarah Cotton

Telephone: (651) 982-2410

Fax: _____

Email: sarah.cotton@ci.lino-lakes.mn.us

Tax ID#: 41-0883446

(e.g., local government, non-profit 501(c)(3), private business, etc.)

III. PROJECT INFORMATION

Project Name: West Shadow Lake Drive Sanitary Extension

Location(s) of Project: West Shadow Lake Drive, Shadow Court and Sandpiper Drive

City: Lino Lakes State: MN County: Anoka

Project Start Date: 09/01/2018 Project Completion Date: 12/31/2019

Project Type (check only those that directly apply):

- [x] Water Quality Treatment Project
- [ ] Runoff Volume Control / Flood Storage Project
- [ ] Peak Runoff Rate Control Project
- [ ] Stormwater Reuse Irrigation Project
- [x] Other

Is a RCWD Rule C permit from the RCWD required for this project? [■] YES [ ] NO [ ] UNKNOWN

IV. COST-SHARE REQUEST

RCWD Cost-Share Funds Requested: $ 50,000.00

Local Matching Contributions: $ 299,000.00

State/Federal/Other Funds: $ 0.00 Source(s): _____

Total Estimated Project Cost: $ 349,000.00

Would you be willing to accept cost-share funding in an amount less than requested? [■] YES [ ] NO

V. SIGNATURE OF APPLICANT *(An original signature page must be received with this application)*

I certify that the information contained within this application is true and accurate.

Michael Grochala

Signature of Project Officer

12/29/17

Date

Community Development Director

Title

VI. Executive Summary

Include a brief Executive Summary (100 words or less) that summarizes the main goals and activities of the project and the expected environmental outcomes that will be achieved. Identification of the total amount of funds being requested along with the required match must be included in the Executive Summary. The summaries will be used in the grant review process and on the RCWD website, for projects that are funded.

Reshanau Lake is listed on the MPCA Impaired Waters List due to excess nutrients. In the West Shadow Lake Drive (WSLD) neighborhood residents have drinking wells and individual sewage treatment systems (ISTS) in close proximity to each other, and many are near the end of their expected life. The WSLD neighborhood is known to have a high groundwater table and directly drains to Reshanau Lake. While ISTS systems can remove total phosphorus (TP) when designed correctly, the concern is that as these systems age, their proximity to each other, and the drain field conditions may prevent the design TP removals. In an effort to prevent noxious algal blooms and meet the waste load allocations for Reshanau Lake, the City is proposing to include the extension of municipal utilities, including sanitary sewer, as part of their street reconstruction project. The goal to connect the residential properties and remove the aging ISTS and drain fields. The City is requesting $50,000 of funds to match their $349,000 local fund contribution.

VII. Project Description & Justification

The RCWD has established guidelines for prioritizing projects based on location. Water quality improvement projects should be located to benefit a RCWD Tier I or II lake (see Figure 4.2 in the RCWD's Watershed Management Plan), or a waterbody with an approved Total Maximum Daily Load (TMDL) study. Flood storage and runoff rate control projects should focus on reducing flood peaks in known regional flood hazard and problem areas. Describe the specific watershed management, water quality or quantity need(s) that the project will address and its impact on the target water resource within the District.

- Name the target waterbody benefitting from this project: Reshanau Lake
- List and describe the Best Management Practices (BMPs) that will be incorporated into this project, including any stormwater reuse components.

The City will be extending municipal services with the West Shadow Lake Drive Street Reconstruction project. The street project will include the required stormwater treatment under Rule C. The City is requesting grant funding for the sanitary sewer extension only, to prevent additional phosphorus and pollutants from entering Reshanau Lake from the 62 residential septic systems and drain fields sited within 500 feet of the lake.

- If applicable, describe how the project impacts or protects groundwater resources within the RCWD.

The West Shadow Lake Drive neighborhood is known to have a high groundwater table, based on soil surveys, the water table is within one foot of the surface for most of the neighborhood. ISTS systems are not effective at immobilizing phosphorus when the soils are saturated and common practice is to provide at least two feet of separation between the bottom of the drain field and the saturated zone. Without this separation, the design TP removal rates are not achieved. By connecting the 62 residences to the municipal system, the City hopes to protect the groundwater from residential septic waste and phosphorus contamination.

- Describe how long-term operation and maintenance of the project will be accomplished.

The sanitary sewer will become part of the City of Lino Lakes municipal infrastructure and will be maintained accordingly.

The pervious concrete that will be constructed for stormwater management will be vacuumed annually to prevent the voids from filling with sand and organic matter and ensure proper drainage continues.

- If applicable, describe how the project minimizes impervious surface and/or maximizes infiltration.

The City proposes to increase the width of the roadway to improve emergency vehicle access into the neighborhood. In order to reduce the amount of impervious surface created, the shoulders will be paved with a pervious concrete. Unfortunately in the majority of the neighborhood, the groundwater is within one foot of the surface and does not have adequate separation, so the pervious system will be required to be lined and drained with drain tile.

- Address how the project relates to and supports existing regional planning such as the RCWD Watershed Management Plan, municipal local surface water management plans, and/or others.

By connecting these residents to the municipal sanitary sewer, the City estimates they can prevent 77 pounds of phosphorus from reaching Reshanau Lake via the aging septic systems and drain fields. The Lino Lakes Chain of Lakes TMDL and the City's Local Surface Water Management Plan, have identified water quality improvements in the Reshanau Lake Resource Management Unit as a top priority.

- List all project partners and their respective roles in implementing and/or supporting the project.

N/A

VIII. Conceptual Design

Provide drawings, maps and/or schematics which graphically illustrate the location and conceptual design of the project. **(Attach separate sheets.)**

IX. Pollutant Reduction Estimates & Other Benefits

Provide a detailed estimate and description of the anticipated pollutant reduction, stormwater rate/volume reduction, groundwater withdrawal reduction, and/or other environmental or natural resource benefits associated with the project. Describe the methods and cite the sources (i.e. P8 model, HydroCAD, MN Stormwater Manual, etc.) used to calculate or estimate the pollutant reductions. **(NOTE: Mandatory for RCWD to consider your proposal!)**

Pollutant reduction for the removal of ISTS and the extension of sanitary sewer was quantified using methodology from the U.S. Environmental Protection Agency (USEPA) Onsite Wastewater Treatment Systems Manual and Minnesota Pollution Control Agency (MPCA) High Rate Soil Absorption (HRSA) Task Force Final Report. Using these resources, we reviewed the local soils, proximity to impaired waters, age of systems, and the loading rates to determine the total phosphorus generated by the residences along WSLD, as well as the estimated treatment provided by the existing ISTS.

1. The local soils and groundwater do not have an adequate unsaturated zone for septic treatment to reach the design TP removal of 85 to 95%. Based on U.S. EPA case studies, with the water table at 30 cm below the surface, the maximum TP removal rate with this minimal separation is estimated at 59%.
2. The average age of the ISTS along WSLD is 34 years, the MPCA estimates a design life of 30 years, while the average age of replacement according to City records is 27 years.
3. The 62 residences along WSLD produce 822 pounds of TP annually, which is treated by ISTS. The 37 systems that are over 27 years old and within 500-ft of Reshanau Lake produce 442 lb of TP annually, treated in a septic tank and drain field, this results roughly 83% reduction in TP, leaving 77 pounds of TP to enter the water table and Reshanau Lake on an annual basis.

The City proposes to connect all residences to a municipal sanitary sewer extension at the residents' request and to protect the groundwater and Reshanau Lake from pollutants originating in these aging systems. Preliminary analysis of these systems indicates that by connecting these homes to a municipal system the City can prevent 77 pounds of total phosphorus from entering ground and surface water resources along West Shadow Lake Drive, along with other wastewater effluent discharges that may be directly entering the water table and lake.

X. Detailed Cost Estimate

Provide a detailed and reasonable budget that lists each item for which funding is being requested. You must also list the required local matching contributions and their sources. **(Attach separate sheets.)**

XI. Evaluation

Describe the strategy for monitoring and/or evaluating the results or effectiveness of the project, including how success will be defined and measured.

Reshanau Lake has been previously monitored by the MPCA, establishing a baseline transparency of roughly 2-feet, indicating that the lake is eutrophic. We propose including future monitoring activities led by a citizen committee to evaluate the effects of the proposed stormwater treatment and sanitary sewer improvements on the lake. The data collected by the MPCA will serve as a baseline for transparency, cholorphyll-a and total phosphorus indicators on the lake's health. It is anticipated that with the extension of sanitary service and abandonment of residential septic systems, the total phosphorus entering the lake will be reduced which will be shown by an improvement in transparency, cholorphyll-a, and total phosphorus measurements.

XII. Education & Demonstration

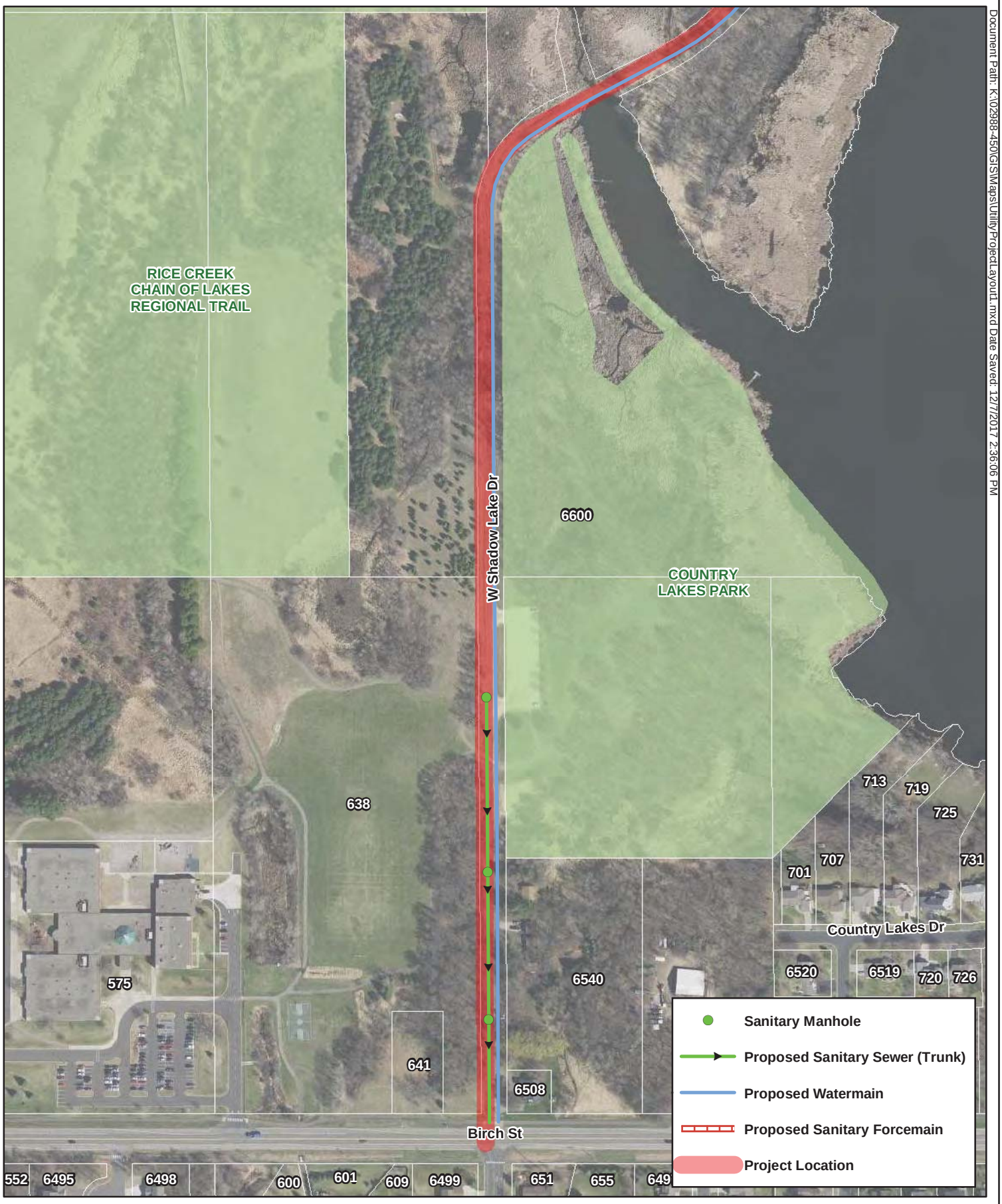
Demonstrate any potential for education and demonstration and describe what methods will be used to ensure that the purpose and success of the project are made known to the public. **(Applicants must include a public education component into the project.)**

There have been various public and neighborhood meetings for the West Shadow Lake Drive neighborhood improvement project, and residents are engaged and interested in the positive impact that a municipal sanitary system will have on the lake that is used for recreation and scenic views. It is anticipated that conversation on the purpose and success of the sanitary sewer extension will continue through future neighborhood meetings as well as be included in mailer updates to ensure that information is being made known to the public.

XIII. Key Personnel

List the lead personnel on the project including any known contractors that will be working on the project. Please include contact information.

Michael Grochala - Community Development Director
Diane Hankee - City Engineer
Jim Stremel - Project Manager
Katy Thompson - Water Resources Engineer
Contractor and Erosion Control Specialist TBD



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Utility Project Layout 1

West Shadow Lake Drive
Lino Lakes, MN
December 2017

N

0 300 Feet
1 inch = 300 feet

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Utility Project Layout 2

West Shadow Lake Drive
Lino Lakes, MN
December 2017

N

0 300 Feet
1 inch = 300 feet

Utility Project Layout 3

West Shadow Lake Drive/
Shadow Ct/Sandpiper Dr
Lino Lakes, MN
December 2017

N

0 300 Feet

1 inch = 300 feet

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03/20/17
CITY OF LINO LAKES
STREET RECONSTRUCTION PROGRAM
PRELIMINARY COST ESTIMATE

West Shadow Lake Drive, Shadow Court & Sandpiper Drive - Sanitary Sewer

ITEM	UNIT	QUANTITY	UNIT PRICE ($)	AMOUNT ($)
Mobilization	LS	1	5,000.00	5,000.00
3" HDPE SDR 17-Forcemain	LF	4,500	30.00	135,000.00
8" PVC SDR 35 Sewer Pipe	LF	900	35.00	31,500.00
48" Diameter Manhole	LF	47	300.00	14,100.00
Manhole Casting	EACH	5	700.00	3,500.00
Chimney Seals	EACH	5	300.00	1,500.00
4" PVC SDR 40 Service Pipe	LF	180	30.00	5,400.00
4" x 8" PVC Wye	EACH	6	200.00	1,200.00
1-1/2" HDPE SDR 17-Service pipe	LF	1,920	12.00	23,040.00
1-1/2" x 3" Wye	EACH	64	250.00	16,000.00
Connect to Existing System	EACH	2	1,500.00	3,000.00
Dewatering	LS	1	25,000.00	25,000.00

SUBTOTAL CONSTRUCTION COST	$264,240.00
10% CONTINGENECY	$26,424.00
SUBTOTAL CONSTRUCTION WITH CONTINGENCY	$290,664.00
20% ADMINISTRATION, ENGINEERING AND LEGAL	$58,132.80
TOTAL ESTIMATED SANITARY SEWER CONSTRUCTION COST:	**$348,796.80**

701 Xenia Avenue South | Suite 300 | Minneapolis, MN 55416 | (763) 541-4800

Memorandum

To: ***Project File***

From: ***Katy Thompson, PE***

Date: ***December 26, 2017***

Re: ***West Shadow Lake Drive Septic System TP Loading Calculations***
WSB Project No. 010326-000

Background

Reshanau Lake is a 303(d) impaired water of the state for excess nutrients since 2006, regularly exceeding the state standard of 60 μg/L of total phosphorus for shallow lakes, as well as for chlorophyll-a and water clarity. A total maximum daily load of 0.71 pounds per day during the summer growing season (established by the 2013 Lino Lakes Chain of Lakes Nutrient TMDL). The total phosphorus TMDL budget for Reshanau Lake is as follows:

	Existing Load [lb/year]	Shallow Lake Standard [lb/year]	
Stormwater Load	12	12	0%
Watershed Load	16	16	0%
Upstream Lake Load	219	153	-30%
Atmospheric Load	6	6	0%
Internal Load	596	61	-90%
TOTAL	**849**	**248**	**-71%**

Single-family homes make up most of Reshanau Lake's shoreline and many of these homes are not connected to municipal services, instead utilizing private wells and septic systems for their drinking and wastewater needs.

While individual septic systems when correctly designed and maintained, do not pose a threat to drinking water wells or natural resources, when improperly designed or sited, they can leach pollutants, including pathogens, nitrogen and phosphorus, that can impact public safety and water quality.

The U.S. Environmental Protection Agency (USEPA) estimated that 50 to 70% of onsite treatment systems fail in Minnesota, due to inadequate soil layers and surfacing of effluent (EPA 2002). It is likely that while the systems along West Shadow Lake Drive were correctly designed at the time, many have failed simply due to the high groundwater table present in the area. Without adequate separation between the drain field and water table, the wastewater mixes with the groundwater and follows the groundwater into neighboring surface waters.

Monitoring by the USEPA shows the amount of phosphorus leached into groundwater depends on the:

1. Individual soil characteristics;
2. Unsaturated percolation zone thickness;
3. Applied loading rate; and
4. Age of the system.

The EPA also found that amount of phosphorus in groundwater can vary from background levels to the full septic tank effluent concentration.

Methodology

Based on this information we have evaluated the septic systems along West Shadow Lake Drive to estimate the existing total phosphorus loading that may be entering Reshanau Lake from these aging systems.

Local Soils
The Minnesota NRCS staff has developed a "Sensitive Soils for Nutrient Management" based:

1. Frequency of flooding – 50 times or more in 100 years
2. Soil texture – coarse textured soils within three feet of surface
3. Depth to bedrock – bedrock within 40 inches of surface
4. Seasonal high water table within two feet of soil surface
5. Presence of ponding at any point in the year
6. Slopes greater than six percent

The combination of these factors indicates how effective a soil will be at preventing the leaching of nutrients beyond the root zone or the movement of nutrients towards surface waters. Soils assigned a rating of sensitive should not be used for nutrient management activities. The Minnesota NRCS has classified the entire WSL area as Sensitive (Soil Survey Staff 2017).

Proximity to Impaired Water
Of the 62 residential septic systems, all but two are within 500 feet of Reshanau Lake.

Seasonal Water Table
At best, according to NRCS soils data, the depth to water table in the WSL area is only 30 cm, or almost one foot below the ground surface. This indicates that its likely that all the septic systems do not meet the recommended separation of two feet and most are likely sited in the water table.

Age of System
According to City records, nine of the 62 septic systems have been replaced, while the rest are still the original systems, with an average age of 34 years old. The average age for replacement is 27 years old, which is consistent with MPCA life expectancy estimates of 30 years for for soil treatment and dispersal systems receiving septic tank effluent (MPCA 2016). For the purposes of this analysis, we are considering only those over 27 years to be "aging" and contributing to the phosphorus loading of Reshanau Lake.

Loading Rate
Using methodology from the MPCA's *Design Guidance for Large Subsurface Wastewater Treatment Systems*, we have estimated the loading rates from all the residences based on the finished floor area and number of bedrooms for the residence. The USEPA has estimated that the average effluent concentration of total phosphorus leaving the septic tank to be 13 mg/L before entering the drain fields (USEPA 1978), combined with functional soil infiltration systems, 85 to 95 percent of the total phosphorus could be removed (USEPA 2002).

The wastewater generated by the residences along West Shadow Lake Drive is estimated to contain 822 pounds of total phosphorus on an annual basis. Even assuming all systems are 95% effective at removing the total phosphorus from the waste water, 41 pounds of phosphorus would still be entering the groundwater and Reshanau Lake.

Results

Combining the loading rate from the number of systems that are aging (48 systems) and within 500 feet of Reshanau Lake results in 6,174 gallons of wastewater generated per day using the MPCA design guidance. Combined, these 37 systems produce 542 pounds of total phosphorus annually that is treated by an aging septic system.

Based on the soils data, all these systems are sited within 30 cm of the water table. To account for the small amount of treatment that can still occur in this unsaturated zone, we have assumed roughly 59% removal efficiency based on a USEPA case study of septic tank effluent and soil water quality (USEPA 2002). A summary of our results is shown on the table below.

Table 0-1. West Shadow Lake Drive Aging Septic Systems and Total Phosphorus Contributions

Residential Waste Water Volume	6,174	gallons per day
	2,253,565	gallons per year
TP in Residential Waste Water	1.21	lb TP per day
	442	lb TP per year
TP in Septic Tank Effluent	0.52	lb TP per day
	188	lb TP per year
TP Entering Water Table	0.21	lb TP per day
	77	lb TP per year

Conclusions

The 62 residences along West Shadow Lake Drive produce 442 pounds of total phosphorus annually which is treated by individual septic systems. Most of these systems are within 500 feet of impaired Reshanau Lake and are over 27 years old. In addition, all systems are within one foot of the water table. The City proposes to connect all residences to a municipal sanitary sewer extension at the residents' request and to protect the groundwater and Reshanau Lake from pollutants originating in these aging systems. Preliminary analysis of these systems indicates that by connecting these homes to a municipal system the City can prevent 77 pounds of total phosphorus from entering ground and surface water resources along West Shadow Lake Drive, along with other wastewater effluent discharges that may be directly entering the water table and lake.

References

Minnesota Pollution Control Agency, 1984. *High Rate Soil Absorption (HRSA) Task Force Final Report*. November 1, 1984. Available online at https://www.pca.state.mn.us/sites/default/files/ists-hsrareport.pdf. Accessed December 19, 2017.

Minnesota Pollution Control Agency, 2013. *Lino Lakes Chain of Lakes Nutrient TMDL*. July 2013. Available online at https://www.pca.state.mn.us/sites/default/files/wq-iw11-13e.pdf. Accessed December 26, 2017.

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Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. *Web Soil Survey*. Available online at https://websoilsurvey.nrcs.usda.gov/app/HomePage.htm. Accessed December 19, 2017.

USEPA, 1978. *Management of Small Waste Flows*. September 1978. Available online at https://nepis.epa.gov/Exe/ZyPDF.cgi/2000I625.PDF?Dockey=2000I625.PDF. Accessed December 26, 2017.

USEPA, 2001. *Source Water Protection Practices Bulletin: Managing Septic Systems to Prevent Contamination of Drinking Water.* July 2001. Available online at

https://www.epa.gov/sites/production/files/2015-06/documents/2006_08_28_sourcewater_pubs_septic.pdf. Accessed December 26, 2017.

USEPA, 2002. *Onsite Wastewater Treatment Systems Manual.* EPA/625/R-00/008. February 2002. Available online at https://www.epa.gov/sites/production/files/2015-06/documents/2004_07_07_septics_septic_2002_osdm_all.pdf. Accessed December 26, 2017.

Memorandum

To: Kyle Axtell
Rice Creek Watershed District

From: Garrett Monson, P.E., Greg Bowles, P.E.

Through: Chris Otterness, P.E.

Subject: City of Lino Lakes – 2018 Urban Stormwater Cost-Share Program Application for West Shadow Lake Drive Sanitary Extension

Date: January 25, 2018

Project: File 5555-061

By task order 2017-023 dated December 1, 2017, HEI is providing the Rice Creek Watershed District (District) a technical review for the 2018 Urban Stormwater Remediation Cost Share grant applications. The review includes not only evaluating consistency with the goals of the Urban Stormwater Remediation Program, but the technical merits and feasibility of the proposed project and cost for reducing runoff volumes and loads. Based upon our review of the application by the City of Lino Lakes, we offer the following comments for your use:

- The applicant is proposing to extend City sanitary sewer to serve residents near Reshanau Lake, along West Shadow Lake Drive. The properties are currently served by individual septic treatment systems that are aging and not performing adequately due to high water tables. The system currently discharges an estimated 77 lbs of TP to Reshanau Lake, which is a Tier II lake.
- This project does not include volume reduction, which is the highest priority BMP category for the District. The project also does not treat stormwater. However, the project does reroute sanitary waste water that currently discharges to Reshanau Lake. The City will maintain the sanitary sewer.
- The applicant provided a memo estimating the BMP would remove 77 lbs. of TP annually.
- Based on the nutrient removal estimates provided by the applicant, the average annual cost is approximately $151 per pound of TP.
- The effectiveness of the project would be determined by continued monitoring of Reshanau Lake by a civilian task force. The effectiveness will be impacted by the timing of residents connecting to the sanitary sewer.
- The project has low educational opportunity. The applicant is proposing to continue engaging landowners regarding connections to the sanitary sewer. The project is subterranean and thereby not visible.

Please call me at 763-493-4522 if I may be of further assistance with regard to this matter.

Rice Creek Watershed District 2018
Urban Stormwater Remediation Cost-Share Program
Application Form

Incomplete applications will be returned to the applicant.

I. APPLICANT INFORMATION

Organization (to be named as Grantee): City of Mahtomedi, MN

Street Address: 600 Stillwater Road

City, State, Zip: Mahtomedi, MN 55115

II. PROJECT CONTACTS

Project Officer: Bob Goebel

Telephone: (651) 773-9730

Fax:

Email: bgoebel@ci.mahtomedi.mn.us

Tax Status: local government

Financial Officer: Scott Schaefer

Telephone: (651) 426-3344

Fax: (651) 426-1786

Email: sschaefer@ci.mahtomedi.mn.us

Tax ID#: local government

(e.g., local government, non-profit 501(c)(3), private business, etc.)

III. PROJECT INFORMATION

Project Name: Glendale Park BMP (part of 2017 Street Improvement Project)

Location(s) of Project: Dahlia Street (between Forest Ave. and Warner Ave.), Warner Avenue, and Glendale Park

City: Mahtomedi State: MN County: Washington

Project Start Date: 05/01/2018 Project Completion Date: 11/30/2018

Project Type (check only those that directly apply):

- [x] Water Quality Treatment Project
- [x] Runoff Volume Control / Flood Storage Project
- [x] Peak Runoff Rate Control Project
- [ ] Stormwater Reuse Irrigation Project
- [ ] Other

Is a RCWD Rule C permit from the RCWD required for this project? [ ] YES [■] NO [ ] UNKNOWN

IV. COST-SHARE REQUEST

RCWD Cost-Share Funds Requested: $ 50,000.00

Local Matching Contributions: $ 252,331.20

State/Federal/Other Funds: $ 5,000.00 Source(s): State Aid for Local Transportation

Total Estimated Project Cost: $ 307,331.20

Would you be willing to accept cost-share funding in an amount less than requested? [■] YES [ ] NO

V. SIGNATURE OF APPLICANT *(An original signature page must be received with this application)*

I certify that the information contained within this application is true and accurate.

Bob Goebel
Signature of Project Officer

12-28-17
Date

Bob Goebel - Public Works Director
Title

VI. Executive Summary

Include a brief Executive Summary (100 words or less) that summarizes the main goals and activities of the project and the expected environmental outcomes that will be achieved. Identification of the total amount of funds being requested along with the required match must be included in the Executive Summary. The summaries will be used in the grant review process and on the RCWD website, for projects that are funded.

The Glendale Park BMP improvements that are being considered by the City Council are aimed to increase the stormwater quality, volume control, and infiltration in this fully developed neighborhood. This project proposes to capture and redirect stormwater from the Dahlia/Warner area to an educational BMP in the Glendale Park. Water currently flows through private property without treatment to a private pond and large wetland. The BMP in Glendale Park would allow the City to control runoff rates, provide additional stormwater treatment, and alleviate the storage of runoff from public roadways on private property.

VII. Project Description & Justification

The RCWD has established guidelines for prioritizing projects based on location. Water quality improvement projects should be located to benefit a RCWD Tier I or II lake (see Figure 4.2 in the RCWD's Watershed Management Plan), or a waterbody with an approved Total Maximum Daily Load (TMDL) study. Flood storage and runoff rate control projects should focus on reducing flood peaks in known regional flood hazard and problem areas. Describe the specific watershed management, water quality or quantity need(s) that the project will address and its impact on the target water resource within the District.

- Name the target waterbody benefitting from this project: White Bear Lake
- List and describe the Best Management Practices (BMPs) that will be incorporated into this project, including any stormwater reuse components.

The project would include the construction of a bio-filtration/infiltration basin in Glendale Park, focused on rate control and stormwater management for water captured on Dahlia Street. The improvements would be completed in the park where the City has property rights and room to construct stormwater treatment. Conceptually this would be constructed adjacent to the existing low area in the park, but final location would be vetted through the Parks Commission.

- If applicable, describe how the project impacts or protects groundwater resources within the RCWD.

Groundwater levels near this project site are generally deep (deeper than 16' from the surface) and are therefore not anticipated to be impacted with this project.

- Describe how long-term operation and maintenance of the project will be accomplished.

The City Public Works Department will be the responsible party for maintenance of the BMP and storm sewer pipes.

- If applicable, describe how the project minimizes impervious surface and/or maximizes infiltration.

The project proposes minimal increase to impervious area, but proposes an increase in infiltration or filtration (depending on soil conditions).

- Address how the project relates to and supports existing regional planning such as the RCWD Watershed Management Plan, municipal local surface water management plans, and/or others.

The City of Mahtomedi is almost fully developed so it is challenging to find effective, large-scale methods for infiltration at sites that are currently not infiltrating surface water. The additional stormwater basin is a potential opportunity for infiltration in an urban, residential area, consistent with Policy 5.1-5 in the WMP. This project will improve water quality and reduce runoff volume by increasing the size of the existing stormwater basin, and it will educate the public and residents that live near the project site about the benefits of the BMP.

- List all project partners and their respective roles in implementing and/or supporting the project.

Project partners include the City of Mahtomedi Public Works Staff, the Mahtomedi City Council, MnDOT State Aid, Rice Creek Watershed District, and the City Engineer. Public Works plans on maintaining the storm sewer and BMPs. The City would promote the project in a newsletter and electronically. MnDOT State Aid and RCWD would be financial partners, and the City Engineer would design and monitor construction of the BMP.

VIII. Conceptual Design

Provide drawings, maps and/or schematics which graphically illustrate the location and conceptual design of the project. **(Attach separate sheets.)**

IX. Pollutant Reduction Estimates & Other Benefits

Provide a detailed estimate and description of the anticipated pollutant reduction, stormwater rate/volume reduction, groundwater withdrawal reduction, and/or other environmental or natural resource benefits associated with the project. Describe the methods and cite the sources (i.e. P8 model, HydroCAD, MN Stormwater Manual, etc.) used to calculate or estimate the pollutant reductions. **(NOTE: Mandatory for RCWD to consider your proposal!)**

The proposed improvements offer several drainage benefits to the area. A type C hydrologic group was assumed for all soils based upon visual inspection of the area.

P8 was used to model the water quality benefits of this project. The tributary 11.7 acre site (3.1 acres of impervious) is expected to generate 2,567 lbs of total suspended solids (TSS) and 8.1 lbs of total phosphorus (TP). The existing BMP removes approximately 1,529 lbs of TSS (60%) and 2.4 lbs of TP (30%).

Expanding the BMP results in an addition removal of 568 lbs of TSS (total of 2097 lbs and 82%) and 1.9 lbs of TP (total of 4.3 lbs and 53%).

Rate Reduction: A HydroCAD model calculated the existing off-site discharge rate for the 1-year storm event to be reduced from 6.14 cfs to 1.10 cfs. Offsite rate reductions were also calculated for the 10-year and 100-year storm events.

X. Detailed Cost Estimate

Provide a detailed and reasonable budget that lists each item for which funding is being requested. You must also list the required local matching contributions and their sources. **(Attach separate sheets.)**

XI. Evaluation

Describe the strategy for monitoring and/or evaluating the results or effectiveness of the project, including how success will be defined and measured.

Success for effectiveness on this project will be measured by drawdown measurements for the stormwater basin. Capacity testing may also be implemented based on the requirements of RCWD. This Level 2 testing would be in the form of hydraulic conductivity tests performed over multiple locations in the expanded basin.

XII. Education & Demonstration

Demonstrate any potential for education and demonstration and describe what methods will be used to ensure that the purpose and success of the project are made known to the public. **(Applicants must include a public education component into the project.)**

Mahtomedi issues a quarterly Newsletter to all residents and it would be the City's intent to feature this project and partnership with RCWD in a newsletter.

XIII. Key Personnel

List the lead personnel on the project including any known contractors that will be working on the project. Please include contact information.

Project Manager: Nick Guilliams nguilliams@wsbeng.com
Project Engineer: Jacob Newhall jnewhall@wsbeng.com
Project Engineer: Alex Miller amiller@wsbeng.com

City Public Works Director: Bob Goebel bgoebel@ci.mahtomedi.mn.us

Contractor: to be determined at bidding and communicated to RCWD

WSB Project: Glendale Park BMP (2017 Street Improvement Project) *Design By:* AKM
Project Location: City of Mahtomedi *Checked By:* MRH
City Project No.: 17-01
WSB Project No: 2859-570 *Date:* 12/27/2017

Item No.	MnDOT Specification No.	Description	Unit	Estimated Total Quantity	Estimated Unit Price	Estimated Total Cost
A. SURFACE IMPROVEMENTS						
1	2021.501	MOBILIZATION	LUMP SUM	1	$10,400.00	$10,400.00
2	2101.502	CLEARING	TREE	5	$500.00	$2,500.00
3	2101.507	GRUBBING	TREE	5	$500.00	$2,500.00
4	2104.501	REMOVE AND REPLACE CONCRETE CURB AND GUTTER	LIN FT	580	$22.00	$12,760.00
5	2104.504	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	SQ YD	60	$6.00	$360.00
6	2104.504	REMOVE CONCRETE DRIVEWAY PAVEMENT	SQ YD	150	$7.00	$1,050.00
7	2104.505	REMOVE GRAVEL DRIVEWAY	SQ YD	90	$2.00	$180.00
8	2104.505	REMOVE BITUMINOUS PAVEMENT	SQ YD	690	$4.00	$2,760.00
9	2104.509	REMOVE SIGN	EACH	6	$45.00	$270.00
10	2104.509	REMOVE STAIR CASE	LUMP SUM	1	$2,000.00	$2,000.00
11	2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	620	$3.00	$1,860.00
12	2104.601	SALVAGE AND REINSTALL LANDSCAPE STRUCTURES	LUMP SUM	1	$5,000.00	$5,000.00
13	2104.602	SALVAGE AND REINSTALL MAIL BOX	EACH	15	$55.00	$825.00
14	2123.610	STREET SWEEPER (WITH PICKUP BROOM)	HOUR	20	$200.00	$4,000.00
15	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	40	$2.50	$100.00
16	2360.501	TYPE SP 12.5 WEARING COURSE MIX (2,C)	TON	100	$70.00	$7,000.00
17	2360.502	TYPE SP 12.5 NON WEAR COURSE MIX (2,C)	TON	100	$68.00	$6,800.00
18	2360.503	TYPE SP 9.5 WEARING COURSE MIX (2,C) (3.0" THICK)	SQ YD	60	$30.00	$1,800.00
19	2502.604	4" INSULATION	SQ FT	75	$45.00	$3,375.00
20	2504.602	IRRIGATION SYSTEM REPAIR	LUMP SUM	1	$1,500.00	$1,500.00
21	2506.516	CASTING ASSEMBLY (STORM)	EACH	8	$600.00	$4,800.00
22	2506.602	CHIMNEY SEAL (STORM)	EACH	8	$175.00	$1,400.00
23	2521.501	4" CONCRETE WALK	SQ FT	200	$8.00	$1,600.00
24	2531.507	6" CONCRETE DRIVEWAY PAVEMENT	SQ YD	150	$55.00	$8,250.00
25	2531.602	PEDESTRIAN CURB RAMP	EACH	1	$1,000.00	$1,000.00
26	2557.602	REPAIR DOG FENCE	EACH	2	$200.00	$400.00

WSB Project: Glendale Park BMP (2017 Street Improvement Project) *Design By:* AKM

Project Location: City of Mahtomedi *Checked By:* MRH

City Project No.: 17-01

WSB Project No: 2859-570 *Date:* 12/27/2017

Item No.	MnDOT Specification No.	Description	Unit	Estimated Total Quantity	Estimated Unit Price	Estimated Total Cost
27	2563.601	TRAFFIC CONTROL	LUMP SUM	1	$5,000.00	$5,000.00
28	2573.502	SILT FENCE, TYPE MACHINE SLICED	LIN FT	200	$4.00	$800.00
29	2573.530	STORM DRAIN INLET PROTECTION	EACH	2	$200.00	$400.00
30	2573.533	FILTER LOG TYPE WOOD FIBER BIOROLL	LIN FT	200	$3.50	$700.00
31	2575.505	SODDING TYPE LAWN (INCL TOPSOIL & FERT)	SQ YD	1,500	$6.00	$9,000.00
32	2575.505	LANDSCAPING	LUMP SUM	1	$2,500.00	$2,500.00
33	2582.502	4" SOLID LINE PAINT	LIN FT	30	$2.00	$60.00
34	2582.503	CROSSWALK MARKING - PAINT	SQ FT	75	$4.00	$300.00
					CONSTRUCTION TOTAL	**$103,250.00**
					CONTINGENCY TOTAL (10%)	**$10,325.00**
					SUBTOTAL TOTAL	**$113,575.00**
					INDIRECT COST TOTAL (28%)	**$31,801.00**
					TOTAL - SURFACE IMPROVEMENTS	**$145,376.00**

B. STORM SEWER IMPROVEMENTS

35	2104.501	REMOVE SEWER PIPE (STORM)	LIN FT	100	$5.00	$500.00
36	2451.609	FILTRATION BASIN AGGREGATE	TON	825	$15.00	$12,375.00
37	2451.609	PIPE DRAIN AGGREGATE	TON	90	$15.00	$1,350.00
38	2501.515	15" RC PIPE APRON	EACH	1	$800.00	$800.00
39	2502.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 1	EACH	6	$1,500.00	$9,000.00
40	2502.541	6" PERF PE PIPE DRAIN	LIN FT	300	$15.00	$4,500.00
41	2503.541	15" RC PIPE SEWER DESIGN 3006 CLASS V	LIN FT	920	$35.00	$32,200.00
42	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	1	$800.00	$800.00
43	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020	LIN FT	36	$375.00	$13,500.00
44	2573.601	CONSTRUCT STORMWATER BMP	LUMP SUM	1	$40,000.00	$40,000.00
					CONSTRUCTION TOTAL	**$115,025.00**
					CONTINGENCY TOTAL (10%)	**$11,502.50**
					SUBTOTAL TOTAL	**$126,527.50**
					INDIRECT COST TOTAL (28%)	**$35,427.70**
					TOTAL - STORM SEWER IMPROVEMENTS	**$161,955.20**
					Grand Total - Glendale Park BMP	**$307,331.20**

RCWD Grant Application

2017 Street Improvement Project
City of Mahtomedi

N

0 100 Feet

1 inch = 90 feet

Memorandum

To: Kyle Axtell
Rice Creek Watershed District

From: Garrett Monson, P.E., Greg Bowles, P.E.

Through: Chris Otterness, P.E.

Subject: City of Mahtomedi – 2018 Urban Stormwater Cost-Share Program Application for Glendale Park BMP

Date: January 25, 2018

Project: File 5555-061

By task order 2017-023 dated December 1, 2017, HEI is providing the Rice Creek Watershed District (District) a technical review for the 2018 Urban Stormwater Remediation Cost Share grant applications. The review includes not only evaluating consistency with the goals of the Urban Stormwater Remediation Program, but the technical merits and feasibility of the proposed project and cost for reducing runoff volumes and loads. Based upon our review of the application by the City of Mahtomedi, we offer the following comments for your use:

- The applicant is proposing to construct storm sewer under reconstructed streets to redirect stormwater to an expanded BMP basin in Glendale Park within the drainage area to White Bear Lake, which is a Tier I lake.
- This project may include volume reduction, which is the highest priority BMP category for the District. The groundwater table indicates that infiltration may be feasible, but site specific soil conditions will determine whether infiltration or biofiltration is used. The City will maintain the BMP.
- The applicant stated that P8 estimated the expansion of the BMP would remove and additional 1.9 lbs. of TP annually and 568 lbs. of TSS annually.
- Based on the nutrient removal estimates provided by the applicant, the average annual cost is approximately $5,392 per pound of TP and $14.08 per pound of TSS, based on a 30-year capital life of the BMP.
- The effectiveness of the project would be determined by the drawdown capacity of the BMP.
- The project has high educational opportunity. The applicant is proposing on site signage in a high traffic area and to publish information on the project in a City publication.

Please call me at 763-493-4522 if I may be of further assistance with regard to this matter.

Rice Creek Watershed District 2018
Urban Stormwater Remediation Cost-Share Program
Application Form

Incomplete applications will be returned to the applicant.

I. APPLICANT INFORMATION

Organization (to be named as Grantee): City of Mahtomedi

Street Address: 600 Stillwater Road

City, State, Zip: Mahtomedi, MN 55115

II. PROJECT CONTACTS

Project Officer: Bob Goebel

Telephone: (651) 773-9730

Fax:

Email: bgoebel@ci.mahtomedi.mn.us

Tax Status: local government

Financial Officer: Scott Schaefer

Telephone: (651) 426-3344

Fax: (651) 426-1786

Email: sschaefer@ci.mahtomedi.mn.us

Tax ID#: local government

(e.g., local government, non-profit 501(c)(3), private business, etc.)

III. PROJECT INFORMATION

Project Name: Phase 3 - Historic District Improvements

Location(s) of Project: West of TH244, East of White Bear Lake, South of Dahlia Street, North of Doover Lane

City: Mahtomedi State: MN County: Washington

Project Start Date: 05/01/2018 Project Completion Date: 11/30/2018

Project Type (check only those that directly apply):

- [x] Water Quality Treatment Project
- [ ] Runoff Volume Control / Flood Storage Project
- [ ] Peak Runoff Rate Control Project
- [ ] Stormwater Reuse Irrigation Project
- [ ] Other

Is a RCWD Rule C permit from the RCWD required for this project? [ ] YES [■] NO [ ] UNKNOWN

IV. COST-SHARE REQUEST

RCWD Cost-Share Funds Requested: $ 50,000.00

Local Matching Contributions: $ 259,403.49

State/Federal/Other Funds: $ 0.00 Source(s): Municipal funds, grant funds

Total Estimated Project Cost: $ 309,403.49 Special assessments

Would you be willing to accept cost-share funding in an amount less than requested? [■] YES [ ] NO

V. SIGNATURE OF APPLICANT *(An original signature page must be received with this application)*

I certify that the information contained within this application is true and accurate.

Bob Goebel — Signature of Project Officer

1-8-18 — Date

Bob Goebel - Public Works Director

Title

VI. Executive Summary

Include a brief Executive Summary (100 words or less) that summarizes the main goals and activities of the project and the expected environmental outcomes that will be achieved. Identification of the total amount of funds being requested along with the required match must be included in the Executive Summary. The summaries will be used in the grant review process and on the RCWD website, for projects that are funded.

The goal of this project is to provide additional storm sewer facilities, enhanced stormwater treatment, and improved drainage within the public rights-of-way for the Historic District neighborhood. Project activities will include installation of a storm sewer system on Park Ave, Crocus St, Birch St, Halcyon Ln, Ash St, Doover Ln, and a portion of Wildwood Beach Rd, and installation of 3 stormwater BMPs intended to provide additional treatment to runoff prior to leaving the system. These improvements will more effectively treat stormwater in this residential area adjacent to White Bear Lake. Water quality treatment structures proposed with the project will remove total suspended solids (TSS) and total phosphorus (TP) and provide an outlet to the neighborhood in larger rain events.

VII. Project Description & Justification

The RCWD has established guidelines for prioritizing projects based on location. Water quality improvement projects should be located to benefit a RCWD Tier I or II lake (see Figure 4.2 in the RCWD's Watershed Management Plan), or a waterbody with an approved Total Maximum Daily Load (TMDL) study. Flood storage and runoff rate control projects should focus on reducing flood peaks in known regional flood hazard and problem areas. Describe the specific watershed management, water quality or quantity need(s) that the project will address and its impact on the target water resource within the District.

- Name the target waterbody benefitting from this project: White Bear Lake
- List and describe the Best Management Practices (BMPs) that will be incorporated into this project, including any stormwater reuse components.

This project proposes to improve the system by routing stormwater to water quality treatment structures to be maintained by the City.

- If applicable, describe how the project impacts or protects groundwater resources within the RCWD.

Groundwater levels near this project site are generally deep (deeper than 16' from the surface) and are therefore not anticipated to be impacted with this project.

- Describe how long-term operation and maintenance of the project will be accomplished.

The City Public Works Department will be the responsible party for maintenance of the storm sewer pipes and BMPs.

- If applicable, describe how the project minimizes impervious surface and/or maximizes infiltration.

The project does not propose any additional impervious surface, only additional treatment of the existing impervious.

- Address how the project relates to and supports existing regional planning such as the RCWD Watershed Management Plan, municipal local surface water management plans, and/or others.

The project is at the top of the watershed, and ultimately drains to and would benefit White Bear Lake and downstream sub-watersheds.

- List all project partners and their respective roles in implementing and/or supporting the project.

Project partners include the City of Mahtomedi Public Works Staff, the Mahtomedi City Council, Rice Creek Watershed District, and the City Engineer (applicant). Public Works plans on maintaining the associated stormwater pipes and BMPs, the City will promote the project, the RCWD would be a financial partner, and the City Engineer will design monitor construction of the project.

VIII. Conceptual Design

Provide drawings, maps and/or schematics which graphically illustrate the location and conceptual design of the project. **(Attach separate sheets.)**

IX. Pollutant Reduction Estimates & Other Benefits

Provide a detailed estimate and description of the anticipated pollutant reduction, stormwater rate/volume reduction, groundwater withdrawal reduction, and/or other environmental or natural resource benefits associated with the project. Describe the methods and cite the sources (i.e. P8 model, HydroCAD, MN Stormwater Manual, etc.) used to calculate or estimate the pollutant reductions. **(NOTE: Mandatory for RCWD to consider your proposal!)**

A P8 model was created to estimate the total phosphorus (TP) and total suspended solids (TSS) leaving the site in existing conditions. Hydrologic soil group 'B' was applied to pervious surfaces with a curve number of 63 based on USGS soil survey data. The existing drainage area consists of 17.31 acres of pervious and 2.99 acres of impervious area. The model estimated 6.7 lbs of TP and 2,082 lbs of TSS leaving the site annually.

The drainage area to the proposed CDS Hydrodynamic Separator is 4.9 acres, 0.84-acres are impervious. A SHSAM model using a continuous runoff model and a generic sediment removal response function shows that the CDS 3025 structure will remove approximately 486 lbs of TSS per year (70%). A combination of P8 modeling and SHSAM modeling estimates the CDS structure to remove approximately 1.3 lbs of TP annually (19%).

Using the same method with a SHSAM model, it was estimated that the two - 3' sump structures (IDs 5500 and 5200) will remove a total of 312 lbs and 0.20 lbs of TSS and TP annually, respectively.

The combination of of all three structures will remove a total of 798 lbs of TSS and 1.5 lbs of TP from the project site annually.

X. Detailed Cost Estimate

Provide a detailed and reasonable budget that lists each item for which funding is being requested. You must also list the required local matching contributions and their sources. **(Attach separate sheets.)**

XI. Evaluation

Describe the strategy for monitoring and/or evaluating the results or effectiveness of the project, including how success will be defined and measured.

Contech's CDS (continuous deflective separation) structure requires regular maintenance to function properly. The total quantity of pollutant removals would be determined during the maintenance of the treatment structure.

XII. Education & Demonstration

Demonstrate any potential for education and demonstration and describe what methods will be used to ensure that the purpose and success of the project are made known to the public. **(Applicants must include a public education component into the project.)**

Mahtomedi issues a quarterly Newsletter to all residents, and it would be the City's intent to feature the project and partnership with the watershed district in the City-wide newsletter. Details would include information on sediment removal and efforts to improve water quality in White Bear Lake and Lost Lake.

XIII. Key Personnel

List the lead personnel on the project including any known contractors that will be working on the project. Please include contact information.

Project Manager: Nick Guilliams nguilliams@wsbeng.com
Project Engineer: Jacob Newhall jnewhall@wsbeng.com
Project Engineer: Alex Miller amiller@wsbeng.com

City Public Works Director: Bob Goebel bgoebel@ci.mahtomedi.mn.us

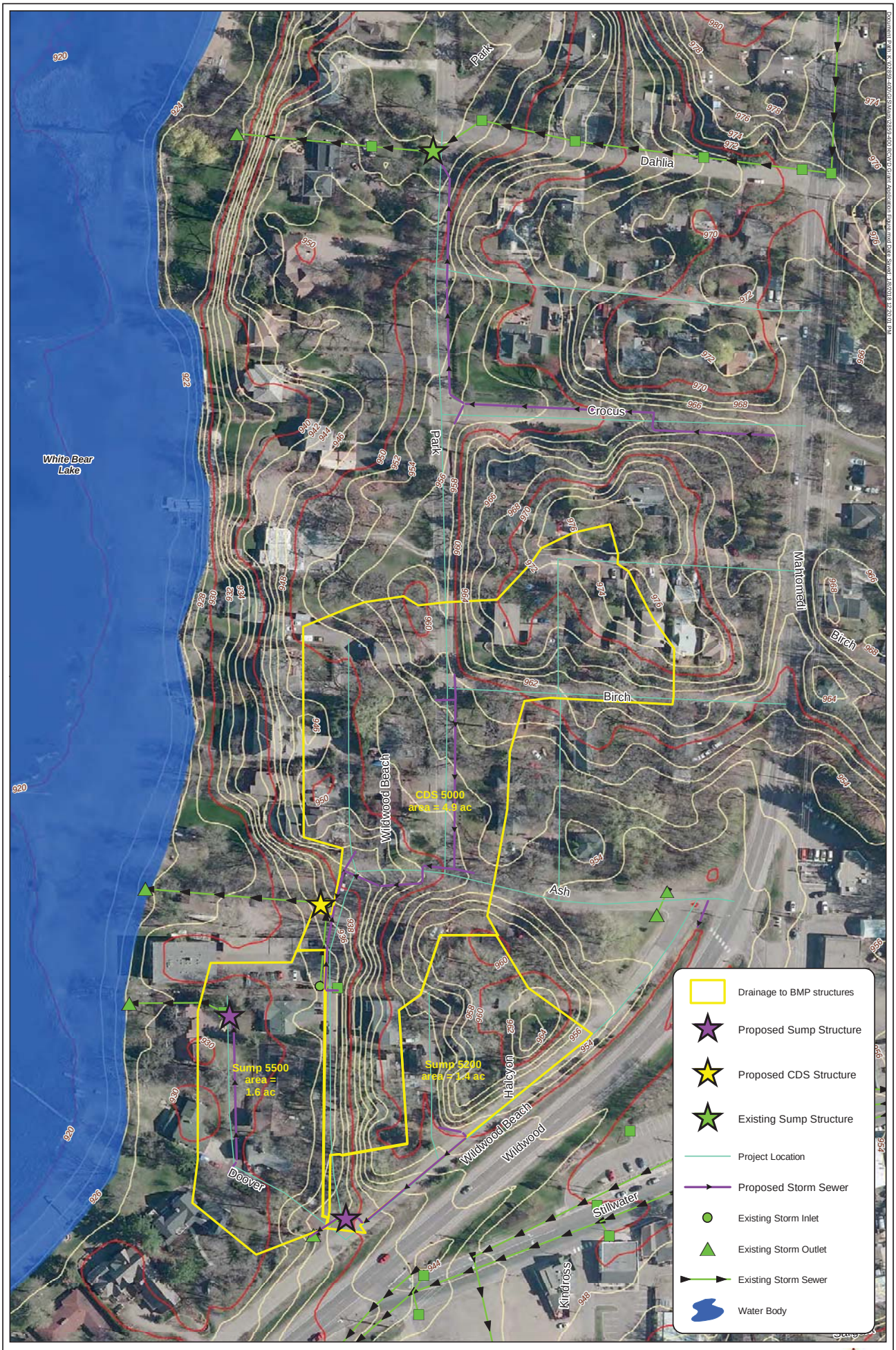
Contractor: to be determined at bidding and communicated to RCWD

Opinion of Probable Cost

WSB Project: Phase 3 - Historic District Improvements — *Design By:* AKM
Project Location: City of Mahtomedi — *Checked By:* MRH
City Project No.: 18-01
WSB Project No: 02859-400 — *Date:* 1/8/2018

Item No.	MN/DOT Specification No.	Description	Unit	Estimated Total Quantity	Estimated Unit Price	Estimated Total Cost
D. DRAINAGE IMPROVEMENTS						
127	2104.501	REMOVE SEWER PIPE (STORM)	LIN FT	315	$11.00	$3,465.00
128	2104.509	REMOVE DRAINAGE STRUCTURE	EACH	3	$440.00	$1,320.00
129	2451.609	PIPE BEDDING MATERIAL	TON	125	$7.00	$874.30
130	2501.502	22" SPAN RC PIPE SEWER - ARCH CULVERT	LIN FT	52	$60.00	$3,120.00
131	2501.502	22" SPAN RC PIPE SEWER - ARCH APRON	EACH	2	$850.00	$1,700.00
132	2501.602	12" PIPE APRON	EACH	3	$650.00	$1,950.00
133	2501.602	15" PIPE APRON	EACH	2	$700.00	$1,400.00
134	2501.602	18" PIPE APRON	EACH	1	$800.00	$800.00
135	2501.602	36" PIPE APRON	EACH	1	$1,800.00	$1,800.00
136	2502.602	8" PVC PIPE DRAIN CLEANOUT	EACH	1	$250.00	$250.00
137	2503.511	8" PVC PIPE SEWER	LIN FT	175	$40.00	$7,000.00
138	2503.541	12" RC PIPE SEWER DESIGN 3006 CLASS V	LIN FT	590	$35.00	$20,650.00
139	2503.541	15" RC PIPE SEWER DESIGN 3006 CLASS V	LIN FT	1225	$35.00	$42,875.00
140	2503.541	18" RC PIPE SEWER DESIGN 3006 CLASS III	LIN FT	235	$40.00	$9,400.00
141	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	3	$1,200.00	$3,600.00
142	2506.602	CHIMNEY SEAL	EACH	27	$225.00	$6,075.00
143	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020	LIN FT	80	$300.00	$24,000.00
144	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN H	EACH	3	$1,500.00	$4,500.00
145	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 1	EACH	12	$1,200.00	$14,400.00
146	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 2	EACH	1	$50,000.00	$50,000.00
147	2506.516	CASTING ASSEMBLY (STORM)	EACH	15	$700.00	$10,500.00
148	2511.501	RANDOM RIPRAP CLASS SPECIAL	CU YD	100	$90.00	$9,000.00
149	2511.515	GEOTEXTILE FABRIC TYPE IV	SQ YD	305	$3.50	$1,067.50
					CONSTRUCTION TOTAL	**$219,746.80**
					CONTINGENCY TOTAL (10%)	**$21,974.68**
					SUBTOTAL	**$241,721.48**
					INDIRECT COST TOTAL (28%)	**$67,682.01**
					TOTAL SCHEDULE D - DRAINAGE IMPROVEMENTS	**$309,403.49**
					Grand Total - Phase 3 - Historic District Improvements Project	**$309,403.49**

Highlighted items are cost-share eligible
plus contingencies & engineering = $173,385



RCWD Grant Application
2017 Street Improvement Project
City of Mahtomedi

N
0 130 Feet
1 inch = 122 feet

Memorandum

To: Kyle Axtell
Rice Creek Watershed District

From: Garrett Monson, P.E., Greg Bowles, P.E.

Through: Chris Otterness, P.E.

Subject: City of Mahtomedi – 2018 Urban Stormwater Cost-Share Program Application for Historic District Improvements Phase 3

Date: January 25, 2018

Project: File 5555-061

By task order 2017-023 dated December 1, 2017, HEI is providing the Rice Creek Watershed District (District) a technical review for the 2018 Urban Stormwater Remediation Cost Share grant applications. The review includes not only evaluating consistency with the goals of the Urban Stormwater Remediation Program, but the technical merits and feasibility of the proposed project and cost for reducing runoff volumes and loads. Based upon our review of the application by the City of Mahtomedi, we offer the following comments for your use:

- The applicant is proposing to construct storm sewer under reconstructed streets to redirect stormwater to a separator BMPs in the Historic District within the drainage area to White Bear Lake, which is a Tier I lake.
- This project does not include volume reduction, which is the highest priority BMP category for the District. The applicant is proposing a hydrodynamic separator and sump manholes. Neither of these are BMPs that are typically recommended by the District for primary treatment, but they do provide pre-treatment of stormwater in a previously untreated area with little to no space for primary BMPs. The City will maintain the BMPs.
- The applicant estimated the BMPs would remove 1.5 lbs. of TP annually and 798 lbs. of TSS annually.
- Based on the nutrient removal estimates provided by the applicant, the average annual cost is approximately $6,876 per pound of TP and $13 per pound of TSS, based on a 30-year capital life of the BMP.
- The effectiveness of the project would be determined by the sediment removed during maintenance of the BMPs.
- The project has moderate educational opportunity. The applicant is proposing to publish information on the project in a City publication.

Please call me at 763-493-4522 if I may be of further assistance with regard to this matter.

Rice Creek Watershed District 2018
Urban Stormwater Remediation Cost-Share Program
Application Form

Incomplete applications will be returned to the applicant.

I. APPLICANT INFORMATION

Organization (to be named as Grantee): Minnesota Commercial Railway (MNNR)

Street Address: 508 Cleveland Avenue North

City, State, Zip: St. Paul, MN 55114

II. PROJECT CONTACTS

Project Officer: Robert Bagaus

Telephone: (651) 632-9000

Fax:

Email: rbagaus@mnnr.net

Tax Status: Private Business - Railroad

Financial Officer: Matt Looyen, CFO

Telephone: (651) 632-9015

Fax: (651) 632-9033

Email: mlooyen@mnnr.net

Tax ID#: 41-1572875

(e.g., local government, non-profit 501(c)(3), private business, etc.)

III. PROJECT INFORMATION

Project Name: MNNR Rice Creek Bridge Stabilization and Shoreline Protection Project

Location(s) of Project: Rice Creek at the MNNR bridge

City: New Brighton State: MN County: Ramsey

Project Start Date: 03/01/2018 Project Completion Date: 12/21/2019

Project Type (check only those that directly apply):

- [x] Water Quality Treatment Project
- [ ] Runoff Volume Control / Flood Storage Project
- [ ] Peak Runoff Rate Control Project
- [ ] Stormwater Reuse Irrigation Project
- [x] Other

Is a RCWD Rule C permit from the RCWD required for this project? [ ] YES [■] NO [ ] UNKNOWN

IV. COST-SHARE REQUEST

RCWD Cost-Share Funds Requested: $ 27,716.00

Local Matching Contributions: $ 0.00

State/Federal/Other Funds: $ 83,460.00 Source(s): Minnesota Commercial Railway

Total Estimated Project Cost: $ 111,176.00

Would you be willing to accept cost-share funding in an amount less than requested? [■] YES [ ] NO

V. SIGNATURE OF APPLICANT *(An original signature page must be received with this application)*

I certify that the information contained within this application is true and accurate.

Signature of Project Officer

12-22-17
Date

Chief Maintenance of Way Officer
Title

VI. Executive Summary

Include a brief Executive Summary (100 words or less) that summarizes the main goals and activities of the project and the expected environmental outcomes that will be achieved. Identification of the total amount of funds being requested along with the required match must be included in the Executive Summary. The summaries will be used in the grant review process and on the RCWD website, for projects that are funded.

This bridge and shoreline stabilization project will reduce the sedimentation of Long Lake by addressing shoreline erosion at the Minnesota Commercial Railway Bridge spanning Rice Creek. Development since the bridge was built in the 1920's has increased scour at the bridge. The project will restore the shoreline, stabilize the railroad bridge, and provide protection against future erosion with rip-rap and a vegetative buffer. The project is estimated to cost $111,176 and the Minnesota Commercial Railway intends to use the RCWD's grant of up to $27,716 along with the railroad's $83,460 investment in order to complete the project.

VII. Project Description & Justification

The RCWD has established guidelines for prioritizing projects based on location. Water quality improvement projects should be located to benefit a RCWD Tier I or II lake (see Figure 4.2 in the RCWD's Watershed Management Plan), or a waterbody with an approved Total Maximum Daily Load (TMDL) study. Flood storage and runoff rate control projects should focus on reducing flood peaks in known regional flood hazard and problem areas. Describe the specific watershed management, water quality or quantity need(s) that the project will address and its impact on the target water resource within the District.

- Name the target waterbody benefitting from this project: Long Lake and Lower Rice Creek
- List and describe the Best Management Practices (BMPs) that will be incorporated into this project, including any stormwater reuse components.

1) Stabilizing the abutments to address movement to the structure due to bank degradation from scour over time.
2) Placement of approximately 75TN of 18" Rip-Rap along a 30' section of shoreline to stabilize the shoreline and prevent additional sedimentation due to stream bank scour in Rice Creek.
3) Planting of a vegetative buffer between the railroad tracks and the waterway to limit run-off into Rice Creek and further stabilize the back from further movement.

- If applicable, describe how the project impacts or protects groundwater resources within the RCWD.

The project will protect groundwater only to the extent that it will prevent further shoreline material from being washed into the surface waters and carried on into the groundwater system.

- Describe how long-term operation and maintenance of the project will be accomplished.

The site will be inspected annually as part of the MNNR's annual bridge inspection program, at which time changes in the project's condition will be noted. Changes will be evaluated by the railroad's RBE (Railroad Bridge Engineer) and the RBE will, consult with designated RCWD personnel to develop appropriate corrective action. The corrective action (observation, maintenance, or repair) will be undertaken as provided herein and in accordance RBE's design as approved by the RCWD within an mutually acceptable time frame.

- If applicable, describe how the project minimizes impervious surface and/or maximizes infiltration.

The use of a vegetative buffer in lieu of a more impervious means of ground stabilization will improve drainage off of the railroad grade and reduce erosion of the bank, while minimizing run-off.

- Address how the project relates to and supports existing regional planning such as the RCWD Watershed Management Plan, municipal local surface water management plans, and/or others.

The Long Lake Management Action Plan included in the RCWD Southwest Urban Lakes Study (EOR, Inc. 2009) indicated the need to to control sedimentation in Long Lake, particularly the northern reach of the lake where water clarity is below standard. The Long Lake MAP recommendations included shoreline restoration and and taking actions to reduce shoreline erosion. The proposed project will restore the shoreline and provide protection against future shoreline erosion due to the high velocity streamflow at the project site.

- List all project partners and their respective roles in implementing and/or supporting the project.

The MNNR will be the sole entity performing the work items associated with this project.

VIII. Conceptual Design

Provide drawings, maps and/or schematics which graphically illustrate the location and conceptual design of the project. **(Attach separate sheets.)**

IX. Pollutant Reduction Estimates & Other Benefits

Provide a detailed estimate and description of the anticipated pollutant reduction, stormwater rate/volume reduction, groundwater withdrawal reduction, and/or other environmental or natural resource benefits associated with the project. Describe the methods and cite the sources (i.e. P8 model, HydroCAD, MN Stormwater Manual, etc.) used to calculate or estimate the pollutant reductions. **(NOTE: Mandatory for RCWD to consider your proposal!)**

The proposed project will prevent approximately 1300 CF of bank sediment entering Rice Creek. This volume is based on known changes to the shoreline in the proposed project area in the last two decades. Assuming future erosion will continue at the same rate as in past, the project would eliminate approximately 65CF of sediment from entering the waterway on an annual basis.

X. Detailed Cost Estimate

Provide a detailed and reasonable budget that lists each item for which funding is being requested. You must also list the required local matching contributions and their sources. **(Attach separate sheets.)**

XI. Evaluation

Describe the strategy for monitoring and/or evaluating the results or effectiveness of the project, including how success will be defined and measured.

The railway will continue to monitor the stability of the rip-rapped bank during its annual bridge inspection and will note changes to the rip-rap over time. If the rip-rap remains in place and there is no discernible loss of material from the bank, it can be reasonably inferred that the project continues to prevent additional sediment from entering the waterway and as a whole is successful. Measurement of loss at the project location will be used in lieu of measurement of sedimentation downstream since the Railway has no access to private properties downstream to measure nor will it be possible to differentiate whether downstream sediment is from the project site or elsewhere in the drainage basin.

This is project is part of a larger project, which is supported by RCWD, to seek funding from the Minnesota Legislature to build a new clear railway bridge over the creek, leaving the existing piers in place to allow them to function as a water control point downstream. This larger project will include the construction of retaining walls along the shoreline in the area for additional long term shoreline stability.

XII. Education & Demonstration

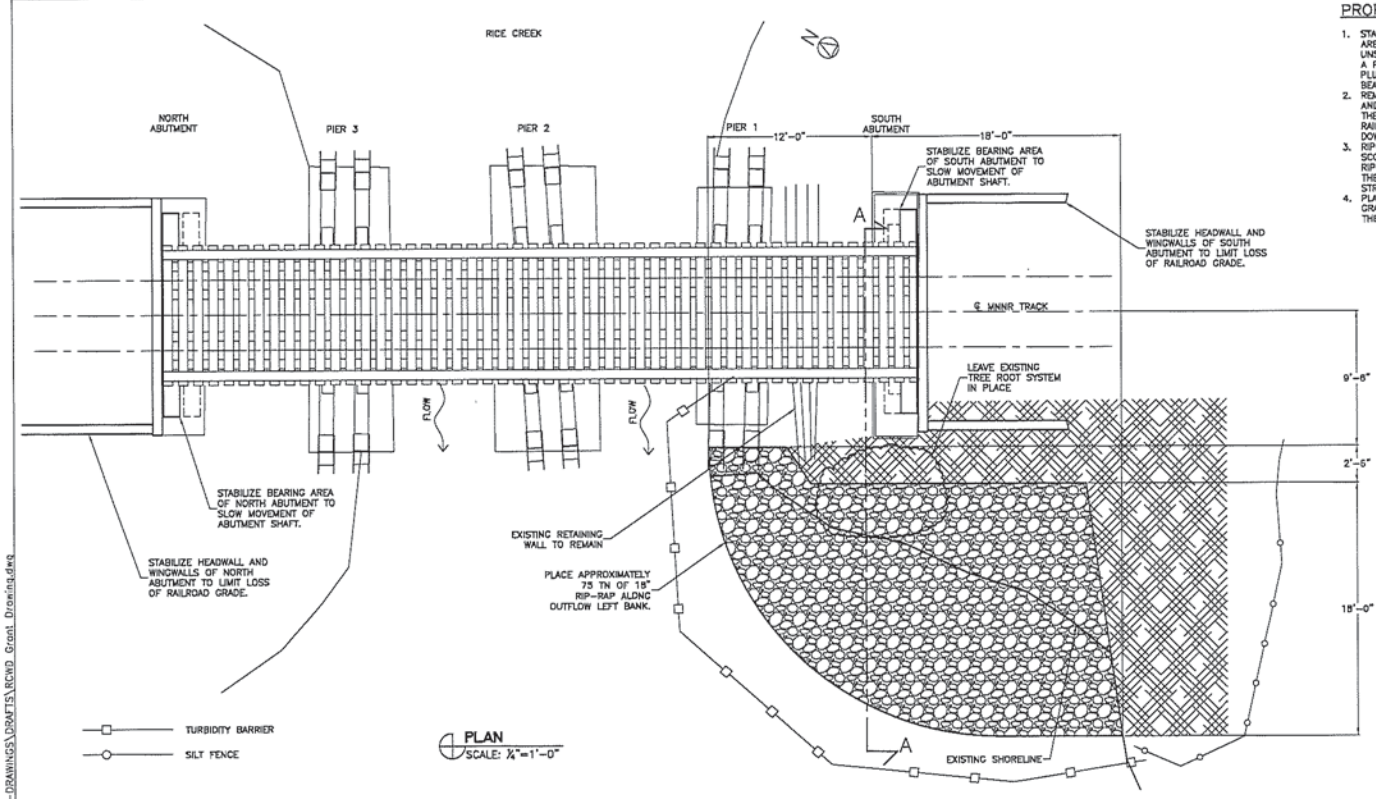
Demonstrate any potential for education and demonstration and describe what methods will be used to ensure that the purpose and success of the project are made known to the public. **(Applicants must include a public education component into the project.)**

The Railway will provide the City of New Brighton and Long Lake Park, and others who the railway may not know downstream, a description of this project and its goal to reduce sediment deposits downstream on shorelines which also may impact Water Supply intakes downstream.

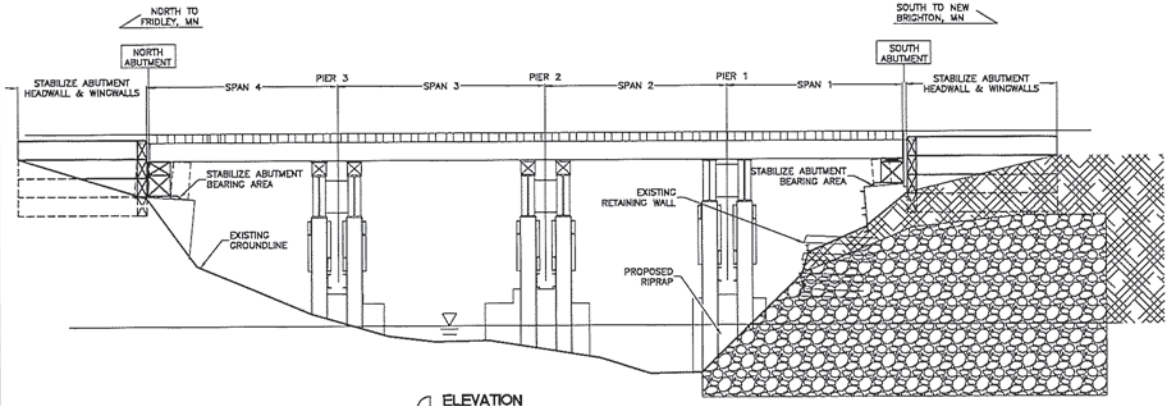
XIII. Key Personnel

List the lead personnel on the project including any known contractors that will be working on the project. Please include contact information.

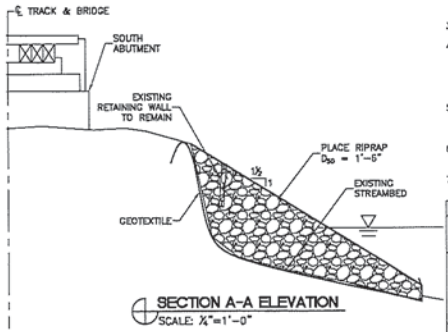
Chief MOW Officer: Robert Bagaus - Minnesota Commercial Railway; rbagaus@mnnr.net; (651) 632-9013
Railway Bridge Engineer: Peter Schierloh, PE - SW Bridge Engineers, LLC; pschierloh@swbridge.com; (608) 772-1885
Railway Bridge Contractor: E80 Bridge Constructors, LLC; (608) 846-1880



PLAN
SCALE: ¼"=1'-0"



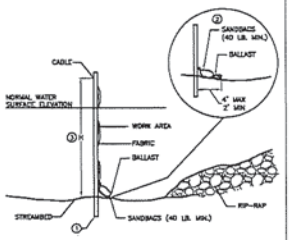
ELEVATION
SCALE: ¼"=1'-0"



SECTION A-A ELEVATION
SCALE: ¼"=1'-0"

PROPOSED SCOPE OF WORK:

1. STABILIZE THE EXISTING BRIDGE ABUTMENT BEARING AREAS BY REMOVING EXISTING LEANING AND UNSTABLE TIMBERS AND RESETTING NEW TIMBERS ON A POLYMER CONCRETE LEVELING PAD SO THEY ARE PLUMB AND RESTING TOWARDS THE REAR OF THE BEARING AREA.
2. REMOVE THE EXISTING LEANING TIMBER HEADWALLS AND RECONSTRUCT THEM IN PLUMB CONDITION WITH THE ADDITION OF WINGWALL TIMBER TO PROTECT THE RAILROAD TRACK GRADE FROM LOSS OF MATERIAL DOWN THE SIDE SLOPES INTO THE WATERWAY.
3. RIP-RAP THE STREAM BANK TO PREVENT FURTHER SCOUR ENCROACHING ON THE RAILROAD GRADE. RIP-RAP SHALL EXTEND ALONG THE LEFT SIDE OF THE GRADE ON THE LOW MILE END OF THE STRUCTURE.
4. PLANT A VEGETATIVE BUFFER BETWEEN THE RAILROAD GRADE AND THE RIP-RAP TO REDUCE EROSION OF THE BANK ABOVE THE RIP-RAP.



TURBIDITY BARRIER
SCALE: NO SCALE

EROSION CONTROL NOTES:

TURBIDITY BARRIER CURTAINS SHALL BE INSTALLED AS SHOWN BEFORE CONSTRUCTION BEGINS AND SHALL BE MAINTAINED IN PLACE THROUGHOUT THE DURATION OF THE WORK. THE BUILDER SHALL INSPECT SILT FENCE AND TURBIDITY CURTAINS ON A REGULAR BASIS AND MAKE NECESSARY REPAIRS TO MAINTAIN THEIR INTEGRITY.

ALL TEMPORARY MATERIAL IS TO BE REMOVED AND PROPERLY DISPOSED OF OFFSITE. ALL DISTURBED AREAS WHICH ARE NOT COVERED WITH RIP-RAP TO BE SEEDED & MULCHED IN ACCORDANCE TO DNR REQUIREMENTS.

THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL BE RESPONSIBLE FOR THE PROTECTION OF WATER QUALITY DURING ALL CONSTRUCTION ACTIVITIES. BEST MANAGEMENT PRACTICES (BMP'S) FOR THE PROTECTION OF SURFACE WATER AND ASSOCIATED SHORELINE VEGETATION SHALL BE IMPLEMENTED TO INCLUDE BUT NOT BE LIMITED TO SILT/EROSION FENCING, TURBIDITY CURTAIN AND OIL ABSORBENT BOOMS. AT NO TIME SHALL ANY KIND OF DEBRIS (SOLID, LIQUID, CONSTRUCTION OR OTHERWISE) BE ALLOWED TO ENTER OR BE DISCHARGED TO THE WATER FROM THE BRIDGE WORK AND CONSTRUCTION SITE. ANY WATER QUALITY VIOLATIONS, FINES OR PENALTIES RESULTING FROM THE BRIDGE WORK ACTIVITIES AND SITE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR IN CHARGE OF THE WORK. VISUAL INDICATORS OF POTENTIAL WATER QUALITY VIOLATIONS (E.G. TURBIDITY, SEDIMENTATION, FISH KILLS, OIL SHEEN, ETC.) SHALL BE REPORTED TO THE RAILROAD IMMEDIATELY. IN ADDITION, IF A VIOLATION OCCURS MEASURES SHALL BE TAKEN BY THE CONTRACTOR TO RECTIFY THE SITUATION IMMEDIATELY. THE CONTRACTOR SHALL OBTAIN A COPY OF ANY AND ALL ENVIRONMENTAL PERMITS TO WORK IN WATER OF THE UNITED STATES AND WATERS OF THE STATE AND LOCAL REGULATORY AGENCIES SHALL BE POSTED ON SITE FOR INSPECTION.

TURBIDITY BARRIER NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE DNR STANDARD AND THE APPLICABLE SPECIAL PROVISIONS.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED, OR VEGETATION HAS RE-ESTABLISHED.

1. DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
2. SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER OR PROJECT MANAGER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.
3. WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.
4. IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
5. FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.
6. ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
7. USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.

THIS DRAWING SET HAS BEEN REDUCED

REVISION	DATE	BY:

SUB: N/A	MP: 10.11	BRIDGE: RICE CREEK

MINNESOTA COMMERCIAL RAILWAY

RICE CREEK BRIDGE SCOUR REMEDIATION PROJECT
NEW BRIGHTON, MN

GENERAL LAYOUT

DESIGN BY: PJS	SCALE: NO SCALE	SHEET 1
DESIGN CHKD BY: JCH	DATE: DEC 12, 2017	
DRAWN BY: JCH	AFE:	
DRWG CHKD BY: PJS	PO:	

P:\SW_BRIDGE\Minnesota_Commercial\2017\17238-2401_MNNR_Rice_Creek_Rip-Rap\07-DRAWINGS\DRAFTS\RCWD_Grant_Drawings.dwg

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST WORKSHEET

Rates, Taxes, & Mark-ups

Hourly Labor Rate (Inc Overhead, Taxes, Expenses, Benefits): $ 67.50
Hourly Equipment Rate (Operated or Idle): $ 38.50
Material Sale Tax: 7.375%
Contigency: 10%

LABOR			MATERIAL					SUBCONTRACTING			TOTAL
WORK FUNCTION	MANHOU	LABOR COST	MATERIAL	UNITS	QUANTIT	UNIT COST	MATERIAL COST	WORK FUNCTION	COST	COST + Contigency	TOTAL COST
		$0					$0			$0	0.00
Rice Creek Bridge - New Brighton, MN		$0					$0			$0	0.00
		$0					$0			$0	0.00
		$0					$0			$0	0.00
Task 1: Engineering Analysis & Design		$0					$0			$0	0.00
a) Bathometric survey of Rice Creek through MNNR Bridge.		$0					$0	Engineering Services	$6,000	$6,600	6,000.00
b) Rip-rap permitting and design.		$0					$0	Engineering Services	$8,750	$9,625	8,750.00
c) Analysis of inspection findings and recommendations.		$0					$0	Engineering Services	$2,600	$2,860	2,600.00
		$0					$0			$0	0.00
		$0					$0			$0	0.00
Task 2: Bridge Stabilization		$0					$0			$0	0.00
Mobilization	50	$5,630					$0	Mobilizition Trucking Costs	$1,400	$1,540	7,230.00
Daily Hyrail Access to Site (10% total hours)	27.5	$3,207	Structural Timber	BF	900	$2.75	$2,905	Sanitary Facilities	$125	$138	6,236.53
1) Stabilize both abutment bearing areas after bank movement:	110	$12,826	Timber Hardware	LS	1	$300.00	$352	Timber Material Disposal	$1,250	$1,375	14,428.13
a) Jack span and remove the existing shifted timber caps.		$0	Polymer Concrete	CF	6	$265.00	$1,866			$0	1,866.26
b) Form and pour a polymer concrete leveling pad on the back half of the existing concrete foundation, providing a level bearing surface 24" clear below proposed base of stringer elevation.		$0					$0			$0	0.00
c) Install a 14"x14"x14' cap and a 10"x14"x10' sub cap on the back half of the foundation between the stringer and foundation. Do Not Dap Caps		$0					$0			$0	0.00
d) Anchor the cap to the concrete, pin the sub cap to the cap, and anchor the stringers to the sub cap to stabilize against movement.		$0					$0			$0	0.00
		$0					$0			$0	0.00
		$0					$0			$0	0.00
2) Stabilize both abutment headwalls after bank movement:		$0	Structural Timber	BF	4550	$2.75	$14,687			$0	14,686.55
1) Excavate and remove the existing shifted and displaced headwalls.	20	$2,332	Timber Hardware	LS	1	$350.00	$411			$0	2,742.81
2) Install new 6"x16"x26' headwall timbers (16" vertical, approximately 5' total height. At each abutment.	60.0	$6,996					$0			$0	6,996.00
3) Add timber wingwalls to both sides of the new headwalls, extending back 6'-12' from the back face of the headwall to stabilize approach fill leading into the bridge.	60.0	$6,996					$0			$0	6,996.00
4) Tamp up and line the track on the south end of the bridge for approximately 100LF.	15.0	$1,749					$0			$0	1,749.00
5) Hual in fill and ballast to complete repairs.	10.0	$1,166	Compaclible Fill	TN	20	$17.00	$399			$0	1,565.08
		$0	Ballast	TN	125	$11.00	$1,614			$0	1,613.91
		$0					$0			$0	0.00
		$0					$0			$0	0.00
Task 3: Sream Bank Stabilization		$0					$0			$0	0.00
Daily Hyrail Access to Site (10% total hours)	14.5	$1,691	Rip-rap	TN	75	$20.00	$1,761	Subcontract Trucking of Rip-rap	$3,000	$3,300	6,451.33
1) Stream Bank Rip-rap & Vegetative Buffer Stabilization:		$0	Geotextile	SY	20	$3.00	$70			$0	70.43
a) Establish Erosion control and clear debris from work area.	15	$1,749					$0			$0	1,749.00
b) Place geotextile fabric in location of proposed rip-rap.	15	$1,749					$0			$0	1,749.00
c) Place 75 TN of 18" rip-rap.	100	$11,660					$0			$0	11,860.00
d) Plant vegetative buffer between edge of ballast and rip-rap.	5	$583					$0	Landscaping Subcontract	$4,286	$4,716	4,870.50
e) Remove erosion control after vegetation has established itself.	10	$1,166					$0			$0	1,166.00
		$0					$0			$0	0.00
TOTALS:	**Labor:**	**$59,699**				**Material:**	**$24,065**	**Subcontracting:**		**$30,154**	
										TASK 1 TOTAL:	**$17,350**
										TASK 2 TOTAL:	**$66,110**
										TASK 3 TOTAL:	**$27,716**
										GRAND TOTAL:	**111,176.51**

Memorandum

To: Kyle Axtell
Rice Creek Watershed District

From: Garrett Monson, P.E., Greg Bowles, P.E.

Through: Chris Otterness, P.E.

Subject: Minnesota Commercial Railway (MNNR) – 2018 Urban Stormwater Cost-Share Program Application for MNNR Rice Creek Bridge Stabilization and Shoreline Protection Project

Date: January 25, 2018

Project: File 5555-061

By task order 2017-023 dated December 1, 2017, HEI is providing the Rice Creek Watershed District (District) a technical review for the 2018 Urban Stormwater Remediation Cost Share grant applications. The review includes not only evaluating consistency with the goals of the Urban Stormwater Remediation Program, but the technical merits and feasibility of the proposed project and cost for reducing runoff volumes and loads. Based upon our review of the application by Minnesota Commercial Railway, we offer the following comments for your use:

- The applicant is proposing to stabilize abutments and stream banks around a rail road bridge crossing Rice Creek within the drainage area to Long Lake, which is a Tier II lake.
- This project does not include volume reduction, which is the highest priority BMP category for the District. The applicant is proposing shoreline stabilization to prevent erosion. The applicant will maintain the stabilization and bridge.
- The applicant estimated the stabilization would protect 65 CF of sediment annually or approximately 6,200 pounds of TSS from entering Rice Creek annually.
- Based on the estimate reduction of TSS, the average annual cost is approximately $1 per pound of TSS per year over a 20-year period.
- The effectiveness of the project would be determined by the lack of sediment erosion observed during annual inspection.
- The project has low educational opportunity. The applicant is proposing to reach out to downstream municipalities to describe the project and its potential benefits for them.

Please call me at 763-493-4522 if I may be of further assistance with regard to this matter.

Rice Creek Watershed District 2018
Urban Stormwater Remediation Cost-Share Program
Application Form

Incomplete applications will be returned to the applicant.

I. APPLICANT INFORMATION

Organization (to be named as Grantee): City of New Brighton

Street Address: 803 Old Highway 8 NW

City, State, Zip: New Brighton, MN 55112

II. PROJECT CONTACTS

Project Officer: Craig Schlichting

Telephone: (651) 638-2056

Fax: (651) 638-2044

Email: craig.schlichting@newbrightonmn.gov

Financial Officer: Brenda Davitt

Telephone: (651) 638-2102

Fax: (651) 638-2044

Email: brenda.davitt@newbrightonmn.gov

Tax Status: Local Government

Tax ID#: 9675988

(e.g., local government, non-profit 501(c)(3), private business, etc.)

III. PROJECT INFORMATION

Project Name: Lions Park Stormwater Reuse

Location(s) of Project: New Brighton Lions Park - 600 14th Street NW

City: New Brighton

State: MN

County: Ramsey

Project Start Date: 10/02/2017

Project Completion Date: 06/29/2018

Project Type (check only those that directly apply):

- ☐ Water Quality Treatment Project
- ☐ Runoff Volume Control / Flood Storage Project
- ☐ Peak Runoff Rate Control Project
- ☑ Stormwater Reuse Irrigation Project
- ☐ Other

Is a RCWD Rule C permit from the RCWD required for this project? ☐ YES ☒ NO ☐ UNKNOWN

IV. COST-SHARE REQUEST

RCWD Cost-Share Funds Requested: $ 50,000.00

Local Matching Contributions: $ 50,000.00

State/Federal/Other Funds: $ 150,000.00 Source(s): Metropolitan Council

Total Estimated Project Cost: $ 250,000.00

Would you be willing to accept cost-share funding in an amount less than requested? ☒ YES ☐ NO

V. SIGNATURE OF APPLICANT *(An original signature page must be received with this application)*

I certify that the information contained within this application is true and accurate.

Signature of Project Officer

12/21/2017
Date

Director of Community Assets & Development
Title

VI. Executive Summary

Include a brief Executive Summary (100 words or less) that summarizes the main goals and activities of the project and the expected environmental outcomes that will be achieved. Identification of the total amount of funds being requested along with the required match must be included in the Executive Summary. The summaries will be used in the grant review process and on the RCWD website, for projects that are funded.

The purpose of the project described in this application is to utilize an existing stormwater pond and install a water reuse system to irrigate 5.8 acres of recently constructed athletic fields. The overall goals associated with the proposed project are to limit the use of groundwater for irrigation, provide water quality benefits for nearby Rice Creek and Long Lake, and to provide educational information related to water reuse to park visitors.

The amount of funds requested totals $50,000. This number coincides with offered funding at a level of $10,000 per acre irrigated. The required match of $50,000 will be met which corresponds with the cost-share request found in Section IV of this application. The funding from RCWD will allow for larger underground storage tanks to be installed.

VII. Project Description & Justification

The RCWD has established guidelines for prioritizing projects based on location. Water quality improvement projects should be located to benefit a RCWD Tier I or II lake (see Figure 4.2 in the RCWD's Watershed Management Plan), or a waterbody with an approved Total Maximum Daily Load (TMDL) study. Flood storage and runoff rate control projects should focus on reducing flood peaks in known regional flood hazard and problem areas. Describe the specific watershed management, water quality or quantity need(s) that the project will address and its impact on the target water resource within the District.

- Name the target waterbody benefitting from this project: Rice Creek/Rush Lake/Long Lake
- List and describe the Best Management Practices (BMPs) that will be incorporated into this project, including any stormwater reuse components.

This stormwater reuse project will provide water quality benefits for nearby Rice Creek, Rush Lake and Long Lake. The new stormwater pond outlets to a wetland in Long Lake Park that is connected to Rush Lake which empties into Rice Creek and the north basin of Long Lake, ultimately draining to the Mississippi River. Rice Creek is impaired for both aquatic life and recreation. The new stormwater pond is a NURP pond with a 10:1 safety bench and adequate capacity to remove sediment. Porous pavers were also installed in the adjacent parking lot as part of the overall construction of Lions Park.

- If applicable, describe how the project impacts or protects groundwater resources within the RCWD.

By utilizing stormwater reuse, it is estimated that 60-70 percent of the average annual irrigation demand for the athletic fields will be met, thus reducing the amount of groundwater needed to irrigate.

- Describe how long-term operation and maintenance of the project will be accomplished.

Our preliminary irrigation design includes a pre-filter to remove dirt, debris, and organic matter from the harvested water. This keeps the tank clean resulting in better water quality and less tank maintenance. We also anticipate the inclusion of a UV system to remove ecoli or other bacterial concentrations. Using UV leaves no residual chemicals in the treated water that can affect aquatic life or human interaction. With UV light we would anticipate a maintenance plan to clean and replace bulbs (as a future City stormwater expense). It is also the Cities responsibility to remove sediment from the storm pond.

- If applicable, describe how the project minimizes impervious surface and/or maximizes infiltration.

Past contamination of this area prohibits infiltration. However, the athletic fields utilize filtration by being constructed of a sand/peat mix over a drain tile network. Discharge from the drain tile network will also be recycled within the reuse system.

- Address how the project relates to and supports existing regional planning such as the RCWD Watershed Management Plan, municipal local surface water management plans, and/or others.

This stormwater reuse feature will remove excess pond surface water to fill storage tanks thus reducing the discharge to local waterbodies. Additionally, reuse of stormwater reduces the need for groundwater pumping and unnecessary use of aquifer water.

- List all project partners and their respective roles in implementing and/or supporting the project.

Metropolitan Council
New Brighton Parks, Recreation and Environmental Commission
Rice Creek Watershed District

VIII. Conceptual Design

Provide drawings, maps and/or schematics which graphically illustrate the location and conceptual design of the project. **(Attach separate sheets.)**

IX. Pollutant Reduction Estimates & Other Benefits

Provide a detailed estimate and description of the anticipated pollutant reduction, stormwater rate/volume reduction, groundwater withdrawal reduction, and/or other environmental or natural resource benefits associated with the project. Describe the methods and cite the sources (i.e. P8 model, HydroCAD, MN Stormwater Manual, etc.) used to calculate or estimate the pollutant reductions. **(NOTE: Mandatory for RCWD to consider your proposal!)**

Using the MIDS calculator to evaluate utilizing storm water from the existing pond for park irrigation, the following annual load reductions have been estimated for the nearby receiving surface waters: 1,256 pound of total suspended solids, 6.9 pounds of total phosphorus. Additionally, reuse system will reduce the stormwater runoff volume by 8.5 acre-ft per year.

The irrigation will also reduce groundwater withdrawal from the City's water supply wells, which are currently facing unique challenges related to the long-term impacts from the TCAAP groundwater plume. The City has been treating their water supply to remove TCE related to the TCAAP plume for many years, but in 2015 six city wells were taken out of service while options were being evaluated to address concerns with an emerging contaminant of concern related to the TCAAP plume. A pilot study was completed in 2016 and the City is looking to start construction of an addition to Water Treatment Plant #1 to remove 1,4-Dioxane in the summer of 2017. This situation has added further challenges for the City's water supply, but it would benefit from the stormwater reuse project. Using the MIDS calculator, we have estimated that 60-70 percent of the average annual irrigation demand in the park will be met.

X. Detailed Cost Estimate

Provide a detailed and reasonable budget that lists each item for which funding is being requested. You must also list the required local matching contributions and their sources. **(Attach separate sheets.)**

XI. Evaluation

Describe the strategy for monitoring and/or evaluating the results or effectiveness of the project, including how success will be defined and measured.

To evaluate the effectiveness and success of this project, the installation would include a flow meter or meters to quantify the amount/volume of water being generated from re-use and not coming from our valuable groundwater sources. This data will then be quantified and submitted to the MN DNR Water Conservation Reporting System as part of the Cities annual water appropriation permit.

XII. Education & Demonstration

Demonstrate any potential for education and demonstration and describe what methods will be used to ensure that the purpose and success of the project are made known to the public. **(Applicants must include a public education component into the project.)**

This project location is well suited for public education due to the proximity to Long Lake Regional Park as well as a 25-acre residential development. The park and pond involve a unique setting that offers numerous benefits related to highly visible stormwater reuse demonstration and educational opportunities. Project signage will be created as part of the City's park development to provide educational information on the reuse system and its benefits. The information would also recognize the growing interest of similar systems that are being put into use around the metro area.

XIII. Key Personnel

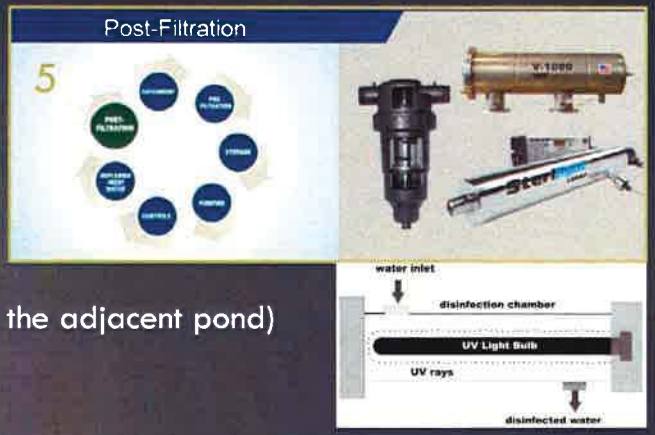
List the lead personnel on the project including any known contractors that will be working on the project. Please include contact information.

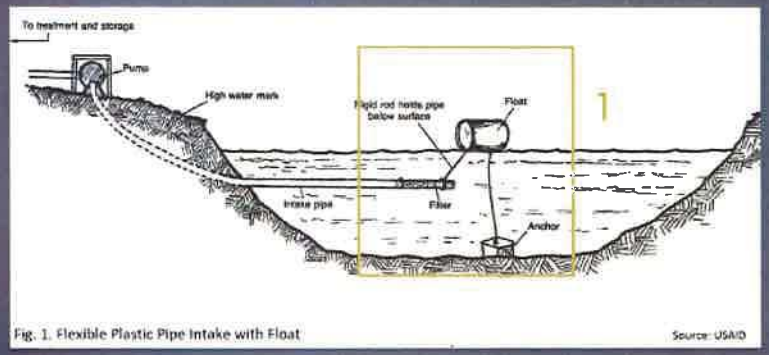
The project is still in the preliminary design phase and contractors have not yet been selected.

Project Specifications

Plans include:

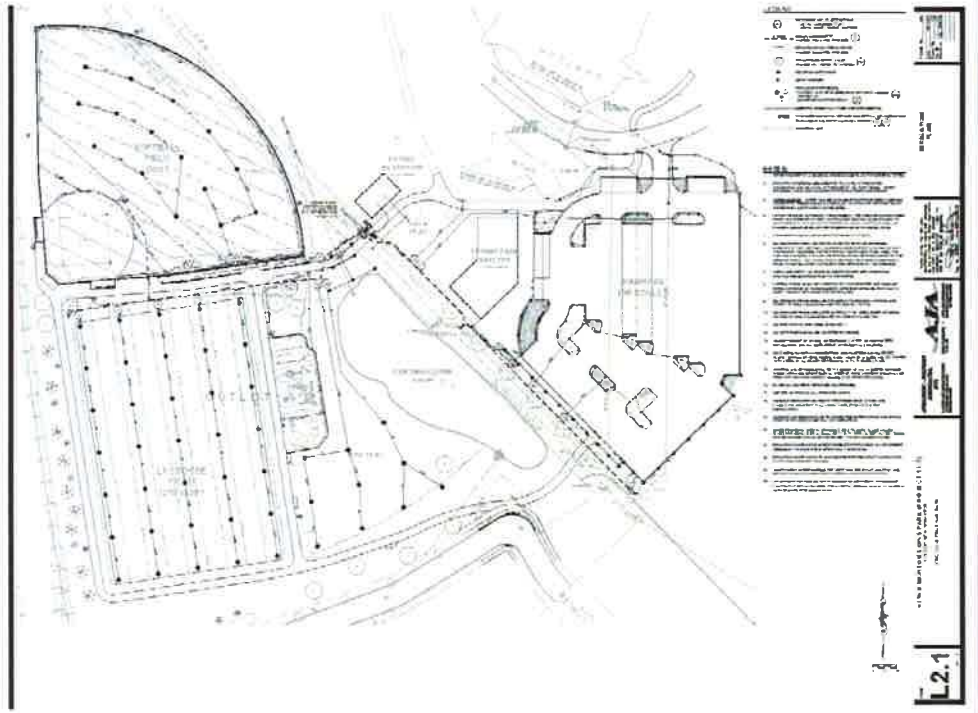
1. A floatable intake (from the pond)
2. A self flushing inlet screen
3. A pump station enclosure
4. An underground cistern for storage of stormwater (routed from the adjacent pond)
5. A UV treatment system
6. An irrigation control cabinet

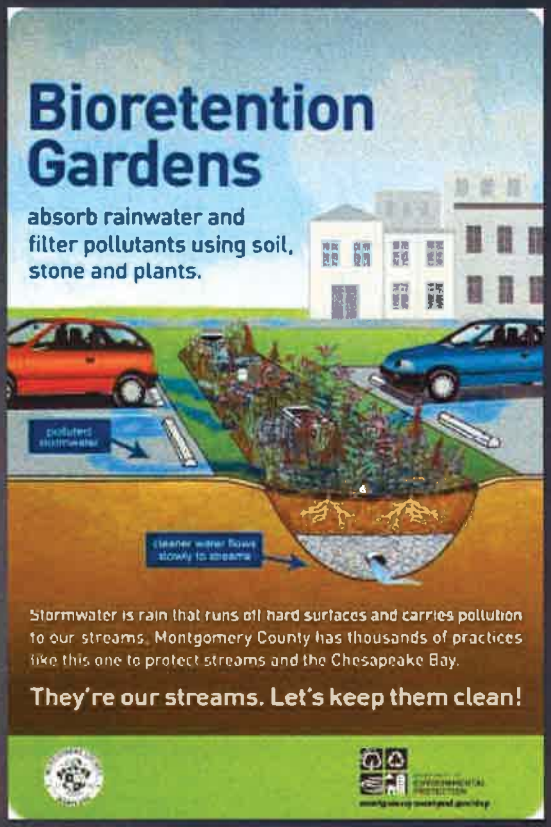




Project Budget

Task	Estimated Cost		
	City	RCWD	Metropolitan Council
Site Investigation	$2,500		--
Plans and Specifications	$2,500		--
Construction			
Education (Publications and Kiosks)	$5,000		--
Underground Storage	--	$50,000	$35,000
Treatment (includes items below)	--		$110,000
Package treatment plant (filtration & UV)			
Hydro-pneumatic tank			
Isolation Valve			
Backflow prevention, RPZ			
Valve Building Structure			
Electrical and Controls			
Delivery and Start-Up			
Piping and Installation	$40,000		$5,000
Total	**$50,000**	**$50,000**	**$150,000**
		$250,000	




Bioretention Gardens
absorb rainwater and filter pollutants using soil, stone and plants.
Stormwater is rain that runs off hard surfaces and carries pollution to our streams. Montgomery County has thousands of practices like this one to protect streams and the Chesapeake Bay.
They're our streams. Let's keep them clean!


Protecting Our Watershed

LEGEND

Symbol	Description
(1 / C2.2)	REFERENCE KEY TO SITE DETAILS DETAIL I.D NUMBER (TOP) DETAIL SHEET NUMBER (BOTTOM)
4" MAIN	IRRIGATION MAINLINE (NUMBER INDICATES PIPE SIZE) (14 / C2.2)
1-1/4"	IRRIGATION PVC LATERAL PIPING (NUMBER INDICATES PIPE SIZE)
(4)	IRRIGATION ELECTRIC VALVE (HUNTER ICV - REFER TO NOTE #20) (11 / C2.2)
	ISOLATION GATE VALVE
Q.C.	QUICK COUPLER
	IRRIGATION TURF HEADS: HUNTER I-40 (6" STAINLESS, DUAL OPPOSING NOZZLE) (12 / C2.2) HUNTER I-20 HUNTER MP ROTATOR SPRAY (13 / C2.2)
	SLEEVING (UNDER ALL PAVED AREAS/CROSSINGS)
C1C2	PROPOSED IRRIGATION SERVICE CONNECTION, WEATHERPROOF ENCLOSURE AND CONTROLLER(S) LOCATION (9 / C2.2) (10 / C2.2)
	PROPERTY LINE

NOTES:

1. REFER TO SHEET C1.4, GRADING AND DRAINAGE PLAN, FOR GENERAL NOTES.
2. IRRIGATION SYSTEM IS DESIGNED FOR 75 (+/-) PSI AT THE WATER CONNECTION AND 55(+/-) PSI AT THE BASE OF ALL TURF HEADS . NOTIFY ENGINEER/LANDSCAPE ARCHITECT IF EXISTING PRESSURE DIFFERS.
3. WATER SOURCE: WATER WILL BE AVAILABLE FROM PROPOSED 4" SERVICE CONNECTION WHERE SHOWN ON THE PLAN. COORDINATE WITH THE UTILITY (WATERMAIN) CONTRACTOR AS REQUIRED.
4. LAYOUT WORK AS ACCURATELY AS POSSIBLE. THE CONTRACTOR MAY MAKE MINOR ADJUSTMENTS TO THE LOCATION AND SPACING AS NECESSARY TO ACCOMMODATE ACTUAL FIELD CONDITIONS. HEAD LOCATIONS SHALL BE FLAGGED AND REVIEWED BY THE ENGINEER PRIOR TO INSTALLATION.
5. COORDINATE INSTALLATION WITH THE WORK OF OTHERS.
6. ALL MATERIALS SHALL BE INSTALLED AS DETAILED ON DRAWINGS, HOWEVER, IF THE CONTRACT DRAWINGS AND/OR SPECIFICATIONS DO NOT THOROUGHLY DESCRIBE THE METHOD OR TECHNIQUES TO BE USED, THE CONTRACTOR SHALL FOLLOW THE INSTALLATION METHODS ISSUED BY THE MANUFACTURER . ALL SUCH LITERATURE MUST BE SUBMITTED 48 HOURS PRIOR TO INSTALLATION FOR REVIEW AND APPROVAL BY THE ENGINEER.
7. CHECK AND VERIFY ALL EXISTING AND PROPOSED SITE CONDITIONS, UTILITIES AND SERVICES PRIOR TO TRENCHING.
8. LATERAL PIPING SHALL BE A MINIMUM OF 12 INCHES DEEP AND MAINLINE PIPING A MINIMUM OF 18 INCHES DEEP. ENGINEER SHALL BE NOTIFIED TO VERIFY TRENCH DEPTHS BEFORE BACKFILLING.
9. ALL MAINLINE PIPING SHALL BE PVC (SDR 21/ CLASS 200). LATERAL LINE PIPING FOR BALL FIELDS SHALL BE PVC (SDR 26 / 160 PSI).
10. ALL MAIN LINE PIPING AND LATERAL PIPE of 1-1/2" AND LARGER AT AREAS OUTSIDE OF BALL FIELDS SHALL BE PVC (SDR 26 / CLASS 160).
11. ALL PIPE WITH NO SIZE LABEL SHALL BE 1".
12. ALL SPRINKLERS SHALL BE AS NOTED ON LEGEND.
13. ADJUST HEADS FOR GRADE, AS NECESSARY, AFTER GRASS HAS BEEN ESTABLISHED AND ALL SETTLEMENT AT HEADS HAS OCCURRED.
14. ALL RISERS, BACKFLOW PREVENTORS AND HOSE BIBBS SHALL BE SET PLUMB. SPRINKLER HEAD RISERS, QUICK COUPLER VALVES AND ALL VALVES WITH STEMS SHALL BE SET PERPENDICULAR TO FINISHED GRADE.
15. CONTROL VALVE WIRES SHALL BE #14 GAUGE U.F.U.L. JACKETED DECODER CABLE APPROVED DIRECT BURIAL. UNDERGROUND CONNECTIONS SHALL BE MADE WITH 3-M WIRE CONNECTORS (DBY), OR APPROVED EQUAL.
16. PLACE ALL VALVES IN APPROVED VALVE BOXES.
17. USE TEFLON TAPE ON ALL THREADED JOINTS.
18. CONDUCT PERFORMANCE TEST IN THE PRESENCE OF OWNER AND LANDSCAPE ARCHITECT FOLLOWING COMPLETION OF SYSTEM INSTALLATION.
19. CONDUCT AND DEMONSTRATE TO OWNER THE WINTERIZATION AND SPRING START-UP PROCESS IN THE FALL OF COMPLETION.
20. ZONES PROVIDING OVER 70 GPM SHALL BE 2" PLASTIC GLOBE VALVES. ZONES PROVIDING OVER 30 SHALL BE 1-1/2" PLASTIC GLOBE VALVES. ZONES PROVIDING LESS THAN 30 GPM SHALL BE 1" PLASTIC GLOBE VALVES.
21. IRRIGATION CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL EQUIPMENT NECESSARY TO MAKE THE SYSTEM FULLY FUNCTIONAL.
22. IRRIGATION CONTRACTOR TO COORDINATE WITH THE UTILITY CONTRACTOR TO PROTECT EXISTING UTILITIES.
23. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXACT LOCATION AND DEPTH OF ELECTRIC LINES PRIOR TO INSTALLATION OF IRRIGATION.
24. LOCATION OF FIELD DRAIN TILE IS SHOWN FOR REFERENCE. COORDINATE LOCATION OF IRRIGATION MAIN AND LATERAL LINES SO AS NOT TO CONFLICT WITH DRAIN TILE/ DRAINAGE ROCK.

0 15 30

Project No. 16062
Date 09/13/2016
Drawn By JRW
Ck. By JRP
Revisions 09/30/2016

IRRIGATION PLAN

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed LANDSCAPE ARCHITECT under the laws of the State of Minnesota.
JAY R. POMOROY
Reg. No. 23543 Date 09/13/2016

ANDERSON - JOHNSON ASSOCIATES, INC.
LANDSCAPE ARCHITECTURE • SITE PLANNING • CIVIL ENGINEERING
7575 GOLDEN VALLEY ROAD • SUITE 200 • MINNEAPOLIS, MN 55427
FAX (763) 544-0531 PH (763) 544-7129

NEW BRIGHTON LIONS PARK (PROJECT 16-5)
CITY OF NEW BRIGHTON
LONG LAKE REGIONAL PARK

Sheet L2.1 of 14

Memorandum

To: Kyle Axtell
Rice Creek Watershed District

From: Garrett Monson, P.E., Greg Bowles, P.E.

Through: Chris Otterness, P.E.

Subject: City of New Brighton – 2018 Urban Stormwater Cost-Share Program Application for Lions Park Stormwater Reuse

Date: January 25, 2018

Project: File 5555-061

By task order 2017-023 dated December 1, 2017, HEI is providing the Rice Creek Watershed District (District) a technical review for the 2018 Urban Stormwater Remediation Cost Share grant applications. The review includes not only evaluating consistency with the goals of the Urban Stormwater Remediation Program, but the technical merits and feasibility of the proposed project and cost for reducing runoff volumes and loads. Based upon our review of the application by the City of New Brighton, we offer the following comments for your use:

- The applicant is proposing to construct a stormwater reuse system to irrigate 5.8 acres within the New Brighton Lions Park within the drainage area to Long Lake, which is a Tier II lake.
- This project includes volume reduction, which is the highest priority BMP category for the District. The applicant is proposing a water reuse system to be used with an existing NURP pond for ball filed irrigation. The City will maintain the BMP.
- The applicant estimated the BMPs would remove 6.9 lbs. of TP annually and 1,256 lbs. of TSS annually.
- Based on the nutrient removal estimates provided by the applicant, the average annual cost is approximately $1,208 per pound of TP and $7 per pound of TSS, based on a 30-year capital life of the BMP.
- The effectiveness of the project would be determined by the quantity of water irrigated from the underground storage tanks.
- The project has moderate/high educational opportunity. The applicant is proposing to add signage in the park to explain the BMP and its potential use around the Metro.

Please call me at 763-493-4522 if I may be of further assistance with regard to this matter.

Rice Creek Watershed District 2018
Urban Stormwater Remediation Cost-Share Program
Application Form

Incomplete applications will be returned to the applicant.

I. APPLICANT INFORMATION

Organization (to be named as Grantee): Roseville, City of

Street Address: 2660 Civic Center Drive

City, State, Zip: Roseville, MN 55113

II. PROJECT CONTACTS

Project Officer: Ryan Johnson
Telephone: (651) 792-7049
Fax: (651) 792-7040
Email: ryan.johnson@cityofroseville.com
Tax Status: Local Government

Financial Officer: Chris MIller
Telephone: (651) 792-7031
Fax: (651) 792-7040
Email: chris.miller@cityofroseville.com
Tax ID#: 41-6007849

(e.g., local government, non-profit 501(c)(3), private business, etc.)

III. PROJECT INFORMATION

Project Name: Evergreen Park Underground Filtration and Reuse Project

Location(s) of Project: Evergreen Park (Fairview Ave & County Rd B)

City: Roseville State: MN County: Ramsey

Project Start Date: 08/01/2018 Project Completion Date: 11/30/2018

Project Type (check only those that directly apply):

- [x] Water Quality Treatment Project
- [x] Runoff Volume Control / Flood Storage Project
- [x] Peak Runoff Rate Control Project
- [x] Stormwater Reuse Irrigation Project
- [ ] Other

Is a RCWD Rule C permit from the RCWD required for this project? [ ] YES [■] NO [ ] UNKNOWN

IV. COST-SHARE REQUEST

RCWD Cost-Share Funds Requested: $ 205,000.00
Local Matching Contributions: $ 205,000.00
State/Federal/Other Funds: $ 300,000.00 Source(s): Met Council
Total Estimated Project Cost: $ 710,000.00

Would you be willing to accept cost-share funding in an amount less than requested? [■] YES [ ] NO

V. SIGNATURE OF APPLICANT *(An original signature page must be received with this application)*

I certify that the information contained within this application is true and accurate.

Signature of Project Officer — Date: 29-Dec-17

Environmental Specialist
Title

VI. Executive Summary

Include a brief Executive Summary (100 words or less) that summarizes the main goals and activities of the project and the expected environmental outcomes that will be achieved. Identification of the total amount of funds being requested along with the required match must be included in the Executive Summary. The summaries will be used in the grant review process and on the RCWD website, for projects that are funded.

The City of Roseville will be installing a one ac-ft underground reuse project that will incorporate water quality, rate control, and volume reduction components. The City will be installing this project at Evergreen Park which is located on Fairview and County Road B, which is on the Fairview Trunk Storm Sewer system. This project will help reduce local flooding issues in an area where the City needs to remove 9 ac-ft of volume. The City received a Met Council grant for $300,000 for the $710,000 project. The City is applying for $205,000, which is 50% of the remaining project amount.

VII. Project Description & Justification

The RCWD has established guidelines for prioritizing projects based on location. Water quality improvement projects should be located to benefit a RCWD Tier I or II lake (see Figure 4.2 in the RCWD's Watershed Management Plan), or a waterbody with an approved Total Maximum Daily Load (TMDL) study. Flood storage and runoff rate control projects should focus on reducing flood peaks in known regional flood hazard and problem areas. Describe the specific watershed management, water quality or quantity need(s) that the project will address and its impact on the target water resource within the District.

- Name the target waterbody benefitting from this project: RCD 4 & Little Lake Johanna
- List and describe the Best Management Practices (BMPs) that will be incorporated into this project, including any stormwater reuse components.

  The project will incorporate a header row (and/or seperate StormTrap vault) to remove gross floatables and sediment from the stormwater. The project will also incorporate a sand filtration bed in the vault to achieve water quality improvements in an area of the City where soils don't allow for infiltration. The concrete vault will detain water until it can be filtered and slowly released back into the trunk system. The Reuse component will water four City baseball fields that are just under 4.5 acres in total size.

  If bids come in favorable in late 2018/early 2019, the City is looking to add in Opti-RTC to maximize the benefit from the system by allowing the City to store additional water that could be used for reuse. The City is also looking into modifying the sand filter with iron shavings to increase phosphorus removal.

- If applicable, describe how the project impacts or protects groundwater resources within the RCWD.

  This project is in heavy soils and infiltration is not feasible, and the City uses potable water for irrigation from the Saint Paul Regional Water Services, so there will be no impact to the groundwater in area.

- Describe how long-term operation and maintenance of the project will be accomplished.

  The maintenance of the underground gallery will be completed by the City. At a minimum, the BMP will be maintained in the spring and fall, with additional inspections in-between to monitor the sediment buildup in the manhole and header row of the gallery. The City will perform additional maintenance as it is needed throughout the year.

- If applicable, describe how the project minimizes impervious surface and/or maximizes infiltration.

  NA. The project will be installed in the green space of a City Park, and infiltration is not feasible due to heavy soils.

- Address how the project relates to and supports existing regional planning such as the RCWD Watershed Management Plan, municipal local surface water management plans, and/or others.

  RCWD's SW Urban Lakes Study identifies several projects for the Little Lake Johanna watershed. While Evergreen Park is not specifically mentioned, there are projects that are adjacent to Fairview Ave. that flow into the same system (pg. 110-123).

  RCWD's Water Management Plan has Little Lake Johanna listed as an impaired water (pg 4-3).

  Little Johanna has been listed on the PCA's 303d list since 2004 for Nutrient/euthrophication biological indicators.

  The City's DRAFT Comprehensive Surface Water Management Plan calls out several issues along the Fairview Trunk Storm Sewer System that this project will help address. Figure 19c highlights some of the area affected by the overtaxed system. The CIP (Table 18) with the CSWMP calls for Trunk Storm Sewer Analysis in 2018 (#7) and Underground Project 1 (#8) that is going to be updated to the Evergreen Park underground reuse project, and the basis for this application.

- List all project partners and their respective roles in implementing and/or supporting the project.

  The City of Roseville will be the lead on the project and will implement all aspects. The City will also perform annual maintenance (at a minimum), and follow up as needed. The Met Council awarded the City a grant for $300,000 for the project, and the City will perform all required reporting activities for the funding.

VIII. Conceptual Design

Provide drawings, maps and/or schematics which graphically illustrate the location and conceptual design of the project. **(Attach separate sheets.)**

IX. Pollutant Reduction Estimates & Other Benefits

Provide a detailed estimate and description of the anticipated pollutant reduction, stormwater rate/volume reduction, groundwater withdrawal reduction, and/or other environmental or natural resource benefits associated with the project. Describe the methods and cite the sources (i.e. P8 model, HydroCAD, MN Stormwater Manual, etc.) used to calculate or estimate the pollutant reductions. **(NOTE: Mandatory for RCWD to consider your proposal!)**

The removals for the 2014 plan that is submitted with this application has a volume reduction of 118,000 CF, 4,055 lbs of sediment, and 11.5 lbs of phosphorus on an annual basis. These numbers were included in a September 2012 memo to the City from our Hydraulic consultant (Hydromethods) who calculated the numbers using WinSLAMM.

The proposed modifications to create a separate vault for sediment and gross floatables, and the inclusion of a filtration component will increase the removal numbers above. The volume reduction should stay the same as it was created using a water budget for irrigating the fields. Long term there is a possibility to increase the storage (through the OPTI-RTC) and work with the Brimhall Elementary to allow for them to use reuse water also. This is a long term plan and hasn't been vetted. It is a great opportunity, though.

Given the data from the MN Stormwater Manual, the mid reduction for the media filter for TP is 50%. The drainage area for this section of the Fairview Trunk System is approximately 95 acres of residential and institutional uses. WinSLAMM estimates that 69lbs of TP annually flow through the system from Roselawn to County Road B. The City estimates that there is an additional 10 lbs of phosphorus that can be removed from a sand filter. This can go up or down depending on the final design (use of iron enhanced sand, final overflow elevations from reause, etc.).

Give the size of the drainage area, and the fact there needs to be 9 ac-ft of storage within this area to improve the storm sewer function, the rate reduction from the 1 ac-ft project will be negligible.

X. Detailed Cost Estimate

Provide a detailed and reasonable budget that lists each item for which funding is being requested. You must also list the required local matching contributions and their sources. **(Attach separate sheets.)**

XI. Evaluation

Describe the strategy for monitoring and/or evaluating the results or effectiveness of the project, including how success will be defined and measured.

The City will inspect the underground storage and reuse system on a monthly basis, and after heavy rainfalls to ensure the system is functioning properly. The City will track the amount of sediment and floatables that are captured by the sump and hood, monitor the post construction use of potable water, and ensure that the filtration system is functioning. All of these components will be the measure of the effectiveness of the system.

Overall, the underground storage is one component within the larger scope of the Fairview trunk storm sewer system. The storage of one ac-ft of stormwater will be an added success in a storm sewer system that is undersized for its current development.

Before the project starts, the City will install a water use to determine pre-construction use for irrigating the ballfields. This number will be compared to the post construction potable water use when the irrigation is being run from the reuse. This will be another measure of success for the project.

XII. Education & Demonstration

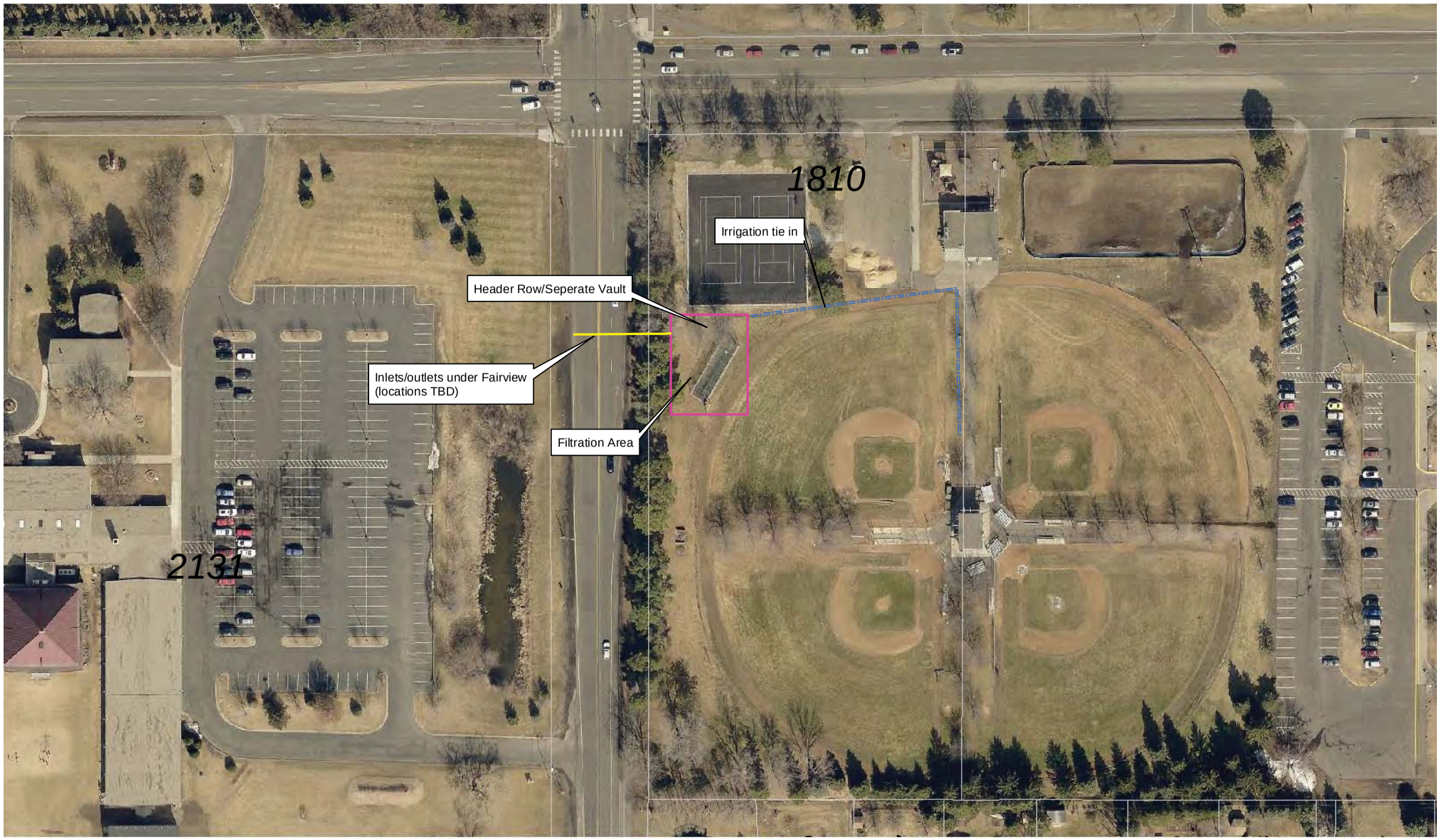
Demonstrate any potential for education and demonstration and describe what methods will be used to ensure that the purpose and success of the project are made known to the public. **(Applicants must include a public education component into the project.)**

The City will put together a one to two page fact sheet, and Engineering Staff will work with its Communication Department to publish an article in the local Roseville News that is mailed out every other month to all City residents. The article (and fact sheet) will show how the system works, why it is important, and how it improves the water quality through the RCD 4 system. The City also has the opportunity to install signage at an appropriate location within the park to educate park-goers about water reuse.

XIII. Key Personnel

List the lead personnel on the project including any known contractors that will be working on the project. Please include contact information.

Ryan Johnson with the City of Roseville will be the lead contact for the project. The City will design, provide installation oversight, inspect and maintain the project. Maintenance Staff will perform the monthly inspections, along with Ryan Johnson. The City will install this project during the summer/fall of 2019 as a stand-alone project. Ryan can be reached at 651-792-7049 and ryan.johnson@cityofroseville.com



ROSEVILLE

Prepared by:
Engineering Department
December 29, 2017

Fairview Trunk Underground
Potential Layout

Data Sources and Contacts:
* Ramsey County GIS Base Map (11/2/15)
* City of Roseville Engineering Department
For further information regarding the contents of this map contact:
City of Roseville, Engineering Department,
2660 Civic Center Drive, Roseville MN

0 40 80 120 160 Feet

mapdoc: Fairview Trunk Underground.mxd
map: Fairview Trunk Underground.pdf

N

CITY OF ROSEVILLE

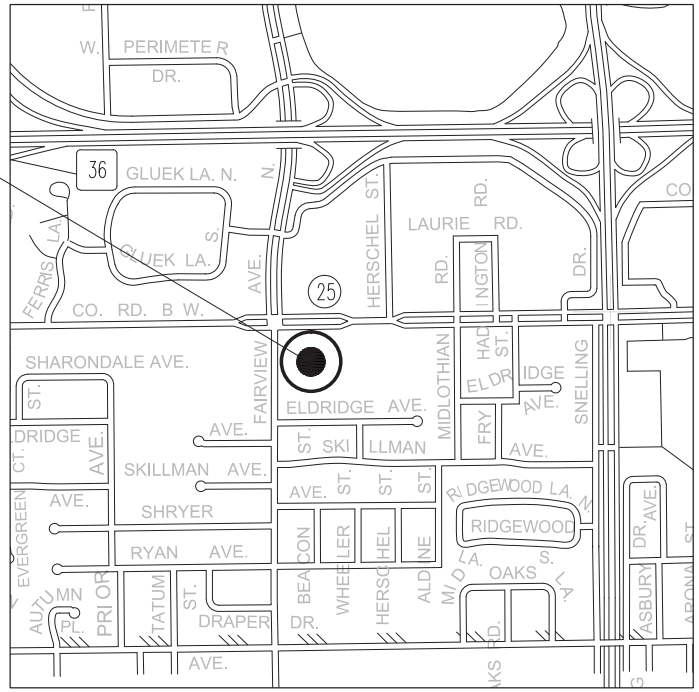
RAMSEY COUNTY, MINNESOTA

PLANS FOR:

EVERGREEN PARK STORMWATER REUSE

CITY PROJECT NO. 14-10

EVERGREEN PARK
1810 COUNTY ROAD B WEST
ROSEVILLE, MN 55113



UTILITY SYMBOLS

POWER POLE LINE
TELEPHONE OR TELEGRAPH POLE LINE
JOINT TELEPHONE AND POWER ON POWER POLES
ON TELEPHONE POLES
ANCHOR
STEEL TOWER
STREET LIGHT
PEDESTAL (TELEPHONE CABLE TERMINAL)
GAS MAIN
WATER MAIN
CONDUIT
TELEPHONE CABLE IN CONDUIT
ELECTRIC CABLE IN CONDUIT
TELEPHONE MANHOLE
ELECTRIC MANHOLE
BURIED TELEPHONE CABLE
BURIED ELECTRIC CABLE
AERIAL TELEPHONE CABLE
SEWER, (SANITARY)
SEWER, (STORM)
SEWER MANHOLE
HANDHOLE

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY

GOVERNING SPECIFICATIONS

THE 2014 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION", SHALL GOVERN.

CITY OF ROSEVILLE STANDARD SPECIFICATION FOR UTILITY AND STREET CONSTRUCTION.

INDEX

THIS PLAN CONTAINS 21 SHEETS

SRF Consulting Group, Inc. — Engineers Planners Designers

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

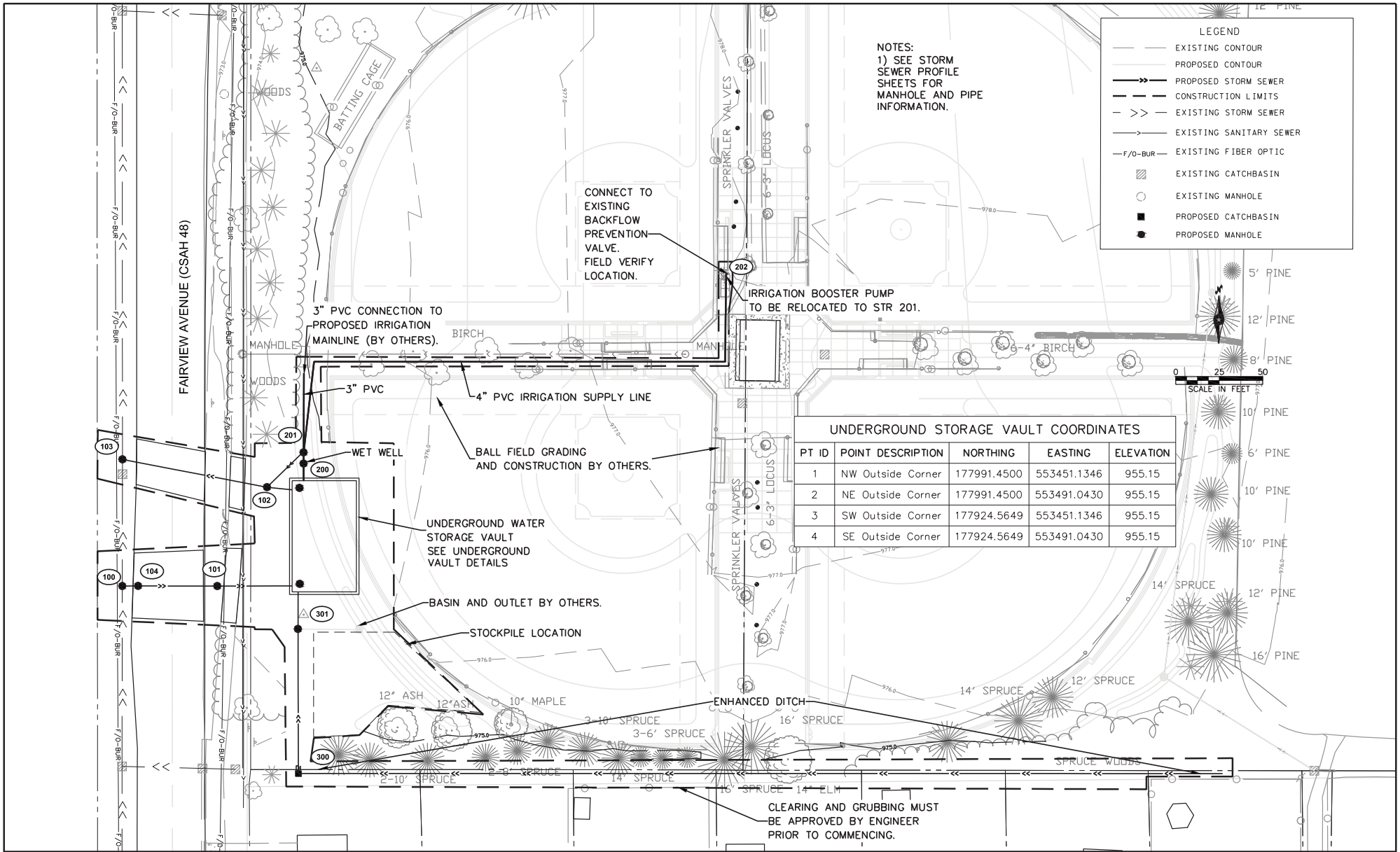
SIGNATURE _____

DATE 1/28/15 LIC. NO. 19596 PRINT NAME DAVID FILIPIAK

RECOMMENDED FOR APPROVAL _____ 20____
CITY ENGINEER, CITY OF ROSEVILLE

THIS PLAN AND/OR SPECIFICATION WAS PREPARED SPECIFICALLY FOR THIS PROJECT, AND ANY RE-USE OF DETAILS OR SPECIFICATIONS ON OTHER PROJECTS IS NOT INTENDED OR AUTHORIZED BY THE DESIGNER. LIABILITY FOR ANY RE-USE ON OTHER PROJECTS IS THE RESPONSIBILITY OF THE PERSON, AGENCY, OR CORPORATION USING PLAN OR SPECIFICATION DATA FROM THIS PROJECT.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO GUIDELINES OF CI/ASCE 38-02. ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".



UNDERGROUND STORAGE VAULT COORDINATES

PT ID	POINT DESCRIPTION	NORTHING	EASTING	ELEVATION
1	NW Outside Corner	177991.4500	553451.1346	955.15
2	NE Outside Corner	177991.4500	553491.0430	955.15
3	SW Outside Corner	177924.5649	553451.1346	955.15
4	SE Outside Corner	177924.5649	553491.0430	955.15

NO	DATE	BY	CKD	APPR

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Print Name: David Filipiak
Date 1/28/2015 License # 19596

DRAWN BY LAB
DESIGNED BY LAB
CHECKED BY DWF
COMM. NO.8438

SRF Consulting Group, Inc.
ENGINEERS PLANNERS DESIGNERS

CITY OF ROSEVILLE
SITE LAYOUT
EVERGREEN PARK STORMWATER REUSE

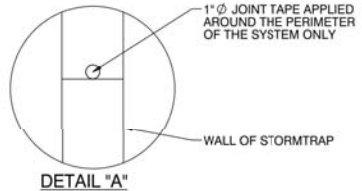
SHEET 4 OF 21

STORMTRAP INSTALLATION SPECIFICATION

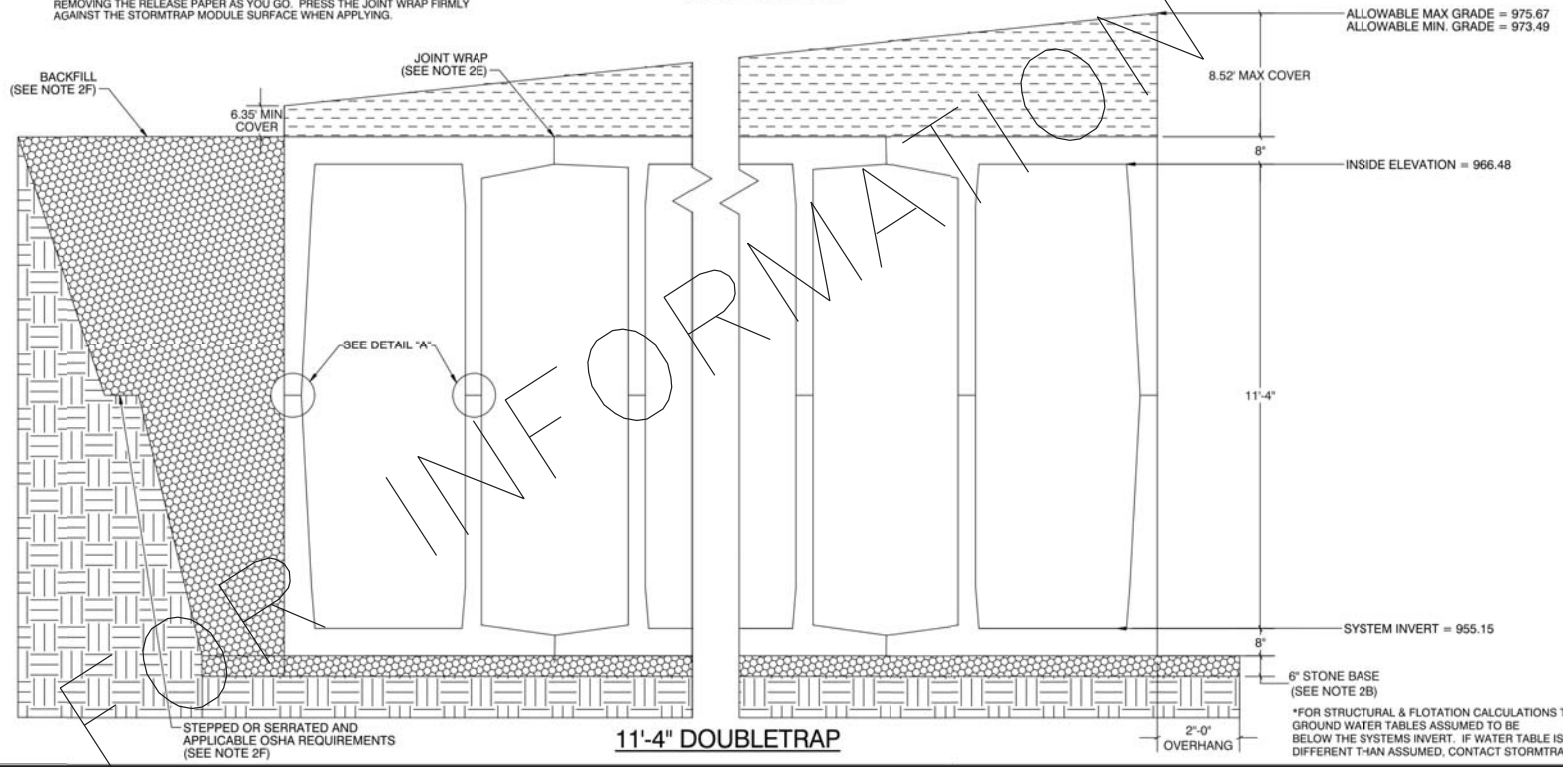
1. STORMTRAP MODULES SHALL BE MANUFACTURED ACCORDING TO SHOP DRAWINGS APPROVED BY THE INSTALLING CONTRACTOR AND ENGINEER. THE SHOP DRAWINGS SHALL INDICATE SIZE AND LOCATION OF ROOF OPENINGS AND INLET/ OUTLET PIPE OPENINGS.
2. STORMTRAP SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C891-09, STANDARD PRACTICE FOR INSTALLATION OF UNDERGROUND PRE-CAST CONCRETE UTILITY STRUCTURES. THE FOLLOWING ADDITIONS AND/OR EXCEPTIONS SHALL APPLY:
   - A. SPECIFICATIONS ON THE ENGINEER'S DRAWINGS SHALL TAKE PRECEDENCE.
   - B. STORMTRAP MODULES SHALL BE PLACED ON A LEVEL PAD OF 3/4" AGGREGATE, THAT EXTENDS 2'-0" PAST THE OUTSIDE OF THE SYSTEM, PER ASTM C891-09 STANDARD PRACTICE FOR INSTALLATION OF UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES.
   - C. THE STORMTRAP MODULES SHALL BE PLACED SUCH THAT THE MAXIMUM SPACE BETWEEN ADJACENT MODULES DOES NOT EXCEED 3/4". IF THE SPACE EXCEEDS 3/4", THE MODULES SHALL BE RESET WITH APPROPRIATE ADJUSTMENT MADE TO LINE AND GRADE TO BRING THE SPACE INTO SPECIFICATION.
   - D. THE PERIMETER HORIZONTAL JOINT OF THE STORMTRAP MODULES SHALL BE SEALED TO THE FOOTINGS WITH PREFORMED MASTIC JOINT SEALER ACCORDING TO ASTM C891-09, 8.8 AND 8.12.
   - E. ALL EXTERIOR AND INTERIOR JOINTS BETWEEN ADJACENT STORMTRAP MODULES SHALL BE SEALED WITH PRE-FORMED, COLD-APPLIED, SELF-ADHERING ELASTOMERIC RESIN BONDED TO A WOVEN HIGHLY PUNCTURE RESISTANT POLYMER WRAP CONFORMING TO ASTM C891-09 AND SHALL BE 0'-8" INTEGRATED PRIMER SEALANT AS APPROVED BY STORMTRAP. THE ADHESIVE EXTERIOR JOINT WRAP SHALL BE INSTALLED ACCORDING TO THE FOLLOWING INSTALLATION INSTRUCTIONS:
     1. USE A BRUSH OR WET CLOTH TO THOROUGHLY CLEAN THE OUTSIDE SURFACE AT THE POINT WHERE THE JOINT WRAP IS TO BE APPLIED.
     2. A RELEASE PAPER PROTECTS THE ADHESIVE SIDE OF THE JOINT WRAP. PLACE THE ADHESIVE TAPE (BUTYL SIDE DOWN) AROUND THE STRUCTURE, REMOVING THE RELEASE PAPER AS YOU GO. PRESS THE JOINT WRAP FIRMLY AGAINST THE STORMTRAP MODULE SURFACE WHEN APPLYING.
   - F. THE FILL PLACED AROUND THE STORMTRAP UNITS MUST BE DEPOSITED ON BOTH SIDES AT THE SAME TIME AND TO APPROXIMATELY THE SAME ELEVATION. AT NO TIME SHALL THE FILL BEHIND ONE SIDE WALL BE MORE THAN 2'-0" HIGHER THAN THE FILL ON THE OPPOSITE SIDE. BACKFILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY OR OTHERWISE SPECIFIED BY ENGINEER. CARE SHALL BE TAKEN TO PREVENT ANY WEDGING ACTION AGAINST THE STRUCTURE, AND ALL SLOPES BOUNDING OR WITHIN THE AREA TO BE BACKFILLED MUST BE STEPPED OR SERRATED TO PREVENT WEDGE ACTION. (REFERENCE ARTICLE 502.10 I.D.O.T. S.S.R.B.C.) CARE SHALL ALSO BE TAKEN AS NOT TO DISRUPT THE JOINT WRAP FROM THE JOINT DURING THE BACKFILL PROCESS. BACKFILL MATERIAL TO CONSIST OF 1/4" TO 3/4" WASHED COARSE AGGREGATE STONE OR APPROVED EQUAL.

STORMTRAP SPECIFICATION

1. TOTAL COVER: MIN. 6.35' MAX. 8.52' CONSULT STORMTRAP FOR ADDITIONAL COVER OPTIONS.
2. CONCRETE CHAMBER DESIGNED FOR AASHTO HS-20 HIGHWAY LOADING. MIN. SOIL PRESSURE 3000 PSF.
3. ALL DIMENSIONS AND SOIL CONDITIONS, INCLUDING BUT NOT LIMITED TO GROUNDWATER AND SOIL BEARING CAPACITY ARE TO BE VERIFIED IN THE FIELD BY OTHERS PRIOR TO STORMTRAP INSTALLATION.
4. FOR STRUCTURAL AND FLOTATION CALCULATIONS THE GROUND WATER TABLE IS ASSUMED TO BE BELOW THE SYSTEMS INVERT. IF WATER TABLE IS DIFFERENT THAN ASSUMED, CONTACT STORMTRAP.
5. FOR STRUCTURAL CALCULATIONS THE SOIL DENSITY IS ASSUMED TO BE 120 PCF.
6. FOR FLOTATION CALCULATIONS THE GROUND WATER TABLE IS ASSUMED TO BE BELOW THE SYSTEMS INVERT. IF WATER TABLE IS DIFFERENT THAN ASSUMED, CONTACT STORMTRAP.
7. STORMTRAP IS NOT WATERTIGHT. CONTACT STORMTRAP FOR WATERTIGHT OPTIONS. WATERTIGHT APPLICATION TO BE PROVIDED BY OTHERS.
8. STORMTRAP STRUCTURAL DESIGN TO BE CONFIRMED UPON FINAL CONFIRMATION OF DESIGN ELEMENTS.



DETAIL "A"
JOINT TAPE INSTALLATION



11'-4" DOUBLETRAP

*FOR STRUCTURAL & FLOTATION CALCULATIONS THE GROUND WATER TABLES ASSUMED TO BE BELOW THE SYSTEMS INVERT. IF WATER TABLE IS DIFFERENT T-HAN ASSUMED, CONTACT STORMTRAP.

STORMTRAP
PRECAST CONCRETE MODULAR STORMWATER MANAGEMENT SYSTEMS
THIS STORMTRAP DESIGN MAY BE COVERED BY 1 OR MORE OF THE FOLLOWING U.S. PATENTS NO. 6,991,402 B2, 7,160,058 B2, 7,344,333 B2
CA. PATENT NO. 2,443,609
2495 WEST BUNGALOW ROAD
MORRIS, IL 60450
P: 815-941-4663
F: 815-416-1100

SRF CONSULTING GROUP
ONE CARLSON PKWY N, STE 150
MINNEAPOLIS, MN 55305
Phone: 763-475-0010
Fax: 763-475-2429

EVERGREEN PARK
ROSEVILLE, MN

DATE: 31-OCT-2014

APPROVED BY:

ISSUED FOR: PRELMINARY

REV.:	DATE:	DESC.	DWG.
1	31-OCT-2014	ISSUED FOR PRELIMINARY	AC

SCALE: NTS

SHEET TITLE: DOUBLETRAP INSTALLATION SPECIFICATIONS

SHEET NUMBER: 1.0

NO	DATE	BY	CKD	APPR

DRAWN BY LAB
DESIGNED BY LAB
CHECKED BY DWF
COMM. NO.8438

SRF Consulting Group, Inc. ENGINEERS PLANNERS DESIGNERS

CITY OF ROSEVILLE
UNDERGROUND VAULT DETAILS
EVERGREEN PARK STORMWATER REUSE

SHEET 14 OF 21

RECOMMENDED ACCESS OPENING SPECIFICATION

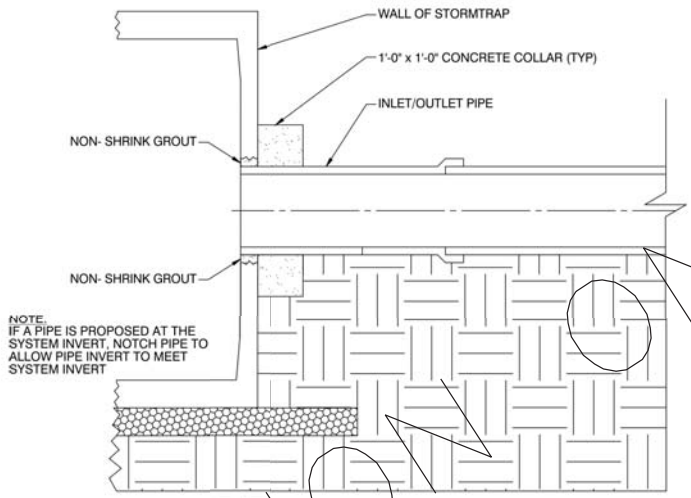
1. A TYPICAL ACCESS OPENING FOR THE STORMTRAP SYSTEM ARE 2'-0" IN DIAMETER. ACCESS OPENINGS LARGER THAN 2'-0" IN DIAMETER NEED TO BE APPROVED BY STORMTRAP. ALL OPENINGS MUST RETAIN AT LEAST 1'-0" OF CLEARANCE IN ALL DIRECTIONS FROM THE EDGE OF THE STORMTRAP UNITS.
2. PLASTIC COATED STEEL STEPS PRODUCED BY M.A. INDUSTRIES PART #PS3-PFC (SEE DETAIL TO THE RIGHT) ARE PROVIDED INSIDE ANY UNIT WHERE DEEMED NECESSARY. THE HIGHEST STEP IN THE UNIT IS TO BE PLACED A DISTANCE OF 1'-0" FROM THE INSIDE EDGE OF THE STORMTRAP UNITS. ALL ENSUING STEPS SHALL BE PLACED WITH A MAXIMUM DISTANCE OF 1'-4" BETWEEN THEM. STEPS MAY BE MOVED OR ALTERED TO AVOID OPENINGS OR OTHER IRREGULARITIES IN THE UNIT.
3. STORMTRAP LIFTING INSERTS MAY BE RELOCATED TO COINCIDE WITH THE ACCESS OPENING OR THE CENTER OF GRAVITY OF THE UNIT AS NEEDED.
4. STORMTRAP ACCESS OPENINGS MAY BE RELOCATED TO AVOID INTERFERENCE WITH INLET AND/OR OUTLET PIPE OPENINGS SO PLACEMENT OF STEPS IS ATTAINABLE.
5. ACCESS OPENINGS SHOULD BE LOCATED IN ORDER MEET THE APPROPRIATE MUNICIPAL REQUIREMENTS. STORMTRAP RECOMMENDS AT LEAST ONE ACCESS OPENING PER SYSTEM FOR ACCESS AND INSPECTION.
6. USE PRECAST ADJUSTING RINGS AS NEEDED TO MEET GRADE. STORMTRAP RECOMMENDS FOR COVER OVER 2' TO USE PRECAST BARREL OR CONE SECTIONS. (BY OTHERS)

RECOMMENDED PIPE OPENING SPECIFICATION

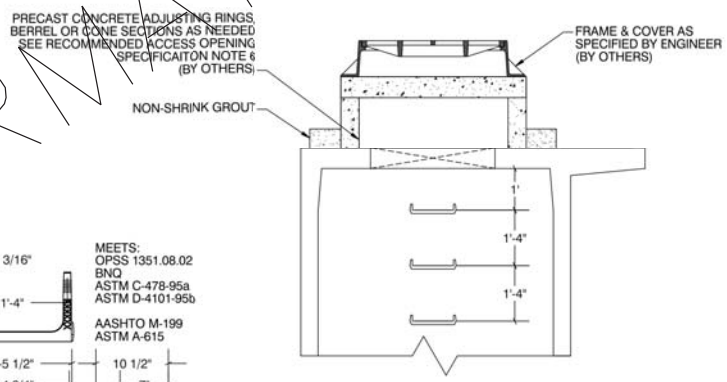
1. MINIMUM EDGE DISTANCE FOR AN OPENING ON THE OUTSIDE WALL SHALL BE NO LESS THAN 1'-0".
2. MAXIMUM OPENING SIZE TO BE DETERMINED BY UNIT HEIGHT. PREFERRED OPENING SIZE Ø36" OR LESS. ANY OPENING NEEDED THAT DOES NOT FIT THIS CRITERIA SHALL BE BROUGHT TO THE ATTENTION OF STORMTRAP FOR REVIEW.
3. CONNECTING PIPES SHALL BE INSTALLED WITH A 1'-0" CONCRETE COLLAR, AND A AGGREGATE CRADLE FOR AT LEAST ONE PIPE LENGTH, AS SHOWN. A STRUCTURAL GRADE CONCRETE OR GROUT WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI SHALL BE USED.
4. THE ANNULAR SPACE BETWEEN THE PIPE AND THE HOLE SHALL BE FILLED WITH NON-SHRINK GROUT.

RECOMMENDED PIPE INSTALLATION INSTRUCTIONS

1. CLEAN AND LIGHTLY LUBRICATE ALL OF PIPE TO BE INSERTED INTO STORMTRAP.
2. IF PIPE IS CUT, CARE SHOULD BE TAKEN TO ALLOW NO SHARP EDGES. BEVEL AND LUBRICATE LEAD END OF PIPE.
3. ALIGN CENTER OF PIPE TO CORRECT ELEVATION AND INSERT INTO OPENING.



FOUNDATION PIPE CONNECTION



RISER / STAIR DETAIL

STAIR DETAIL

STORMTRAP
PRECAST CONCRETE MODULAR STORMWATER MANAGEMENT SYSTEMS
THIS STORMTRAP DESIGN MAY BE COVERED BY 1 OR MORE OF THE FOLLOWING U.S. PATENTS: NO. 6,751,402 B2; 7,160,058 B2; 7,344,333 B2
CA. PATENT NO. 2,441,609
2495 WEST BUNGALOW ROAD
MORRIS, IL 60450
P: 815-941-4663
F: 815-416-1100

SRF CONSULTING GROUP
ONE CARLSON PKWY N, STE 150
MINNEAPOLIS, MN 55305
Phone: 763-475-0010
Fax: 763-475-2429

EVERGREEN PARK
ROSEVILLE, MN

DATE: 31-OCT-2014

APPROVED BY:

ISSUED FOR: PRELMINARY

REV.:	DATE:	DESC.	DWG.
1	31-OCT-2014	ISSUED FOR PRELIMINARY	AC

SCALE: NTS

SHEET TITLE: RECOMMENDED DOUBLELETRAP INSTALLATION SPECIFICATIONS

SHEET NUMBER: 2.0

NO	DATE	BY	CKD	APPR

DRAWN BY LAB
DESIGNED BY LAB
CHECKED BY DWF
COMM. NO.8438

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CITY OF ROSEVILLE
UNDERGROUND VAULT DETAILS
EVERGREEN PARK STORMWATER REUSE

SHEET 15 OF 21

BILL OF MATERIALS

QTY.	UNIT TYPE	DESCRIPTION	TOP WEIGHT	BASE WEIGHT
12	I	11'-4" DOUBLETRAP	19126	18924
0	II	11'-4" DOUBLETRAP	21988	21786
10	III	11'-4" DOUBLETRAP	18794	18693
2	IV	11'-4" DOUBLETRAP	20225	20124
0	VII	11'-4" DOUBLETRAP	0	0
2	SPIV	11'-4" DOUBLETRAP	VARIES	
4	PANEL	8' THICK WALL PANELS	8176#	
6	JOINTWRAP	150' PER ROLL		
32	JOINTTAPE	14.5' PER ROLL		

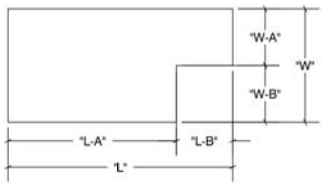
FOUNDATION DETAIL
SEE SHEET 1.0

DESIGN CRITERIA
ALLOWABLE MAX GRADE = 975.67
ALLOWABLE MIN GRADE = 973.49
INSIDE HEIGHT ELEVATION = 966.48
SYSTEM INVERT = 955.15
STORMTRAP VOLUME = 29,770.69 C.F. / 0.68 A.F.

NOTES:
1. DIMENSION OF STORMTRAP SYSTEM ALLOW FOR A 3/4" GAP BETWEEN EACH UNIT.
2. ALL DIMENSIONS TO BE VERIFIED IN THE FIELD BY OTHERS.
3. SEE SHEET 2 FOR INSTALLATION SPECIFICATIONS.

LAYOUT DETAIL

SYSTEM DIMENSIONS
L= 74 FT - 10.75 IN
W = 38 FT - 9 IN
L-A = 0
L-B = 0
W-A = 0
W-B = 0



STORMTRAP
PRECAST CONCRETE MODULAR STORMWATER MANAGEMENT SYSTEMS
THIS STORMTRAP DESIGN MAY BE COVERED BY 1 OR MORE OF THE FOLLOWING U.S. PATENTS: NO. 6,991,402 B2 7,160,058 B2 7,344,333 B2 U.S. PATENT NO. 2,443,689
2495 WEST BUNGALOW ROAD
MORRIS, IL 60450
P: 815-941-4663
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ONE CARLSON PKWY N, STE 150
MINNEAPOLIS, MN 55305
Phone: 763-475-0010
Fax: 763-475-2429

EVERGREEN PARK
ROSEVILLE, MN

DATE: 31-OCT-2014
APPROVED BY:
ISSUED FOR: PRELMINARY

REV.:	DATE:	DESC.	DWG.
1	31-OCT-2014	ISSUED FOR PRELIMINARY	AC

SCALE: NTS
SHEET TITLE: LAYOUT DETAIL
SHEET NUMBER: 3.0

NO	DATE	BY	CKD	APPR

DRAWN BY LAB
DESIGNED BY LAB
CHECKED BY DWF
COMM. NO.8438

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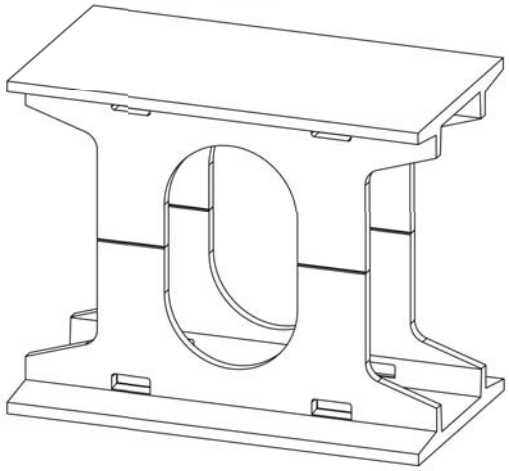
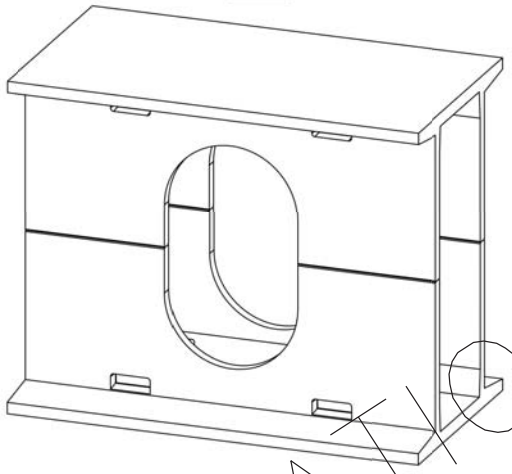
CITY OF ROSEVILLE
UNDERGROUND VAULT DETAILS
EVERGREEN PARK STORMWATER REUSE

SHEET 16 OF 21

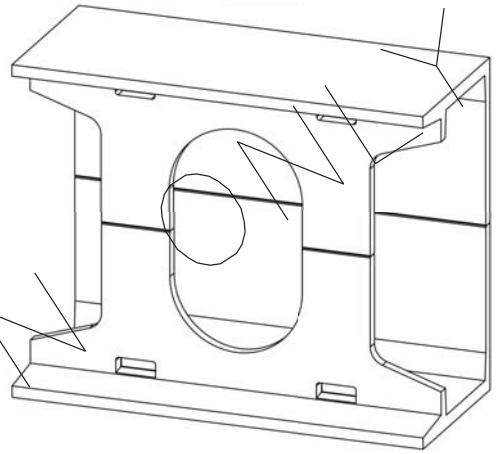
TYPE I



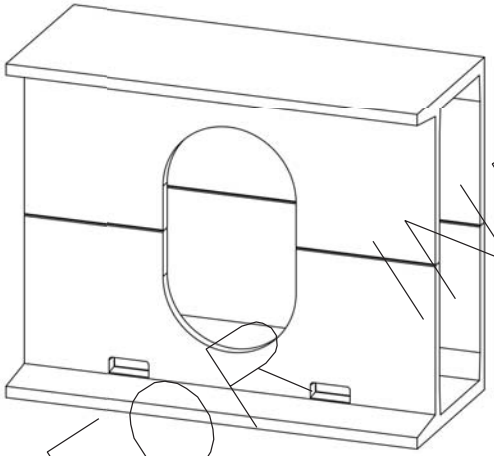
TYPE II



TYPE III



TYPE IV



TYPE VII

TYPE II PANEL

TYPE IV PANEL

TYPE VII PANEL

NOTES:

1. OPENING LOCATIONS VARY ON UNIT HEIGHT AND LENGTHS.
2. SP - INDICATES A UNIT WITH MODIFICATIONS.
3. P - INDICATES A UNIT WITH A PANEL ATTACHEMENT.
4. POCKET WINDOW OPENINGS ARE OPTIONAL.

StormTrap
PRECAST CONCRETE MODULAR STORMWATER MANAGEMENT SYSTEMS
THIS STORMWATER DESIGN MAY BE COVERED BY 1 OR MORE OF THE FOLLOWING U.S. PATENTS: NO. 5,991,462 B2, 7,160,038 B2, 7,344,333 B2
C.A. PATENT NO. 2,443,609
2495 WEST BUNGALOW ROAD
MORRIS, IL 60450
P: 815-941-4663
F: 815-416-1100

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Fax: 763-475-2429

EVERGREEN PARK
ROSEVILLE, MN

DATE: 31-OCT-2014

APPROVED BY:

ISSUED FOR: PRELMINARY

REV.:	DATE:	DESC.	DWG.
1	31-OCT-2014	ISSUED FOR PRELIMINARY	AC

SCALE: NTS

SHEET TITLE: 11'-4" DOUBLETRAP UNIT TYPES

SHEET NUMBER: 4.0

NO	DATE	BY	CKD	APPR

DRAWN BY LAB
DESIGNED BY LAB
CHECKED BY DWF
COMM. NO.8438

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CITY OF ROSEVILLE
UNDERGROUND VAULT DETAILS
EVERGREEN PARK STORMWATER REUSE

SHEET 17 OF 21

NOTES:

(A) RUBBER "O" RING GASKETS ON ALL MANHOLE JOINTS. ALL OUTSIDE JOINTS SHALL HAVE A 6" WIDE STRIP OF BUTYL-RESIN SEALANT PLACED AROUND EACH JOINT. ALL LIFT-HOLES TO BE PLUGGED WITH APPROVED MORTAR AND SHALL BE COVERED ON THE OUTSIDE WITH 6" WIDE STRIP OF BUTYL-RESIN SEALANT.

(B) WATER STOP GASKET OR BOOT

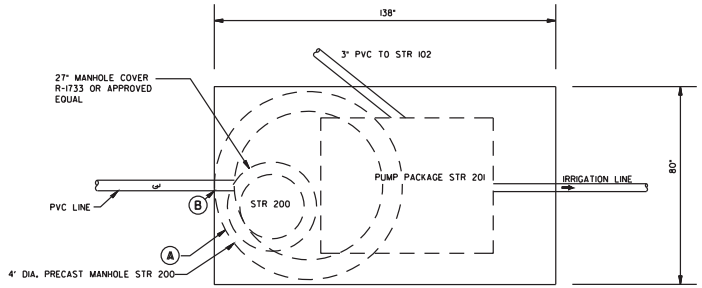
(C) 4"x4"x3/8" GALVANIZED STEEL ANGLE MOUNTED TO OUTSIDE OF MANHOLE WITH 5/8 " EXPANDABLE CONCRETE ANCHOR. 3 PLACES PER JOINT (120° ANGLE). ALL JOINTS. VERTICAL SPACING BETWEEN ANGLES ACROSS JOINT SHALL BE A MIN. OF 24".

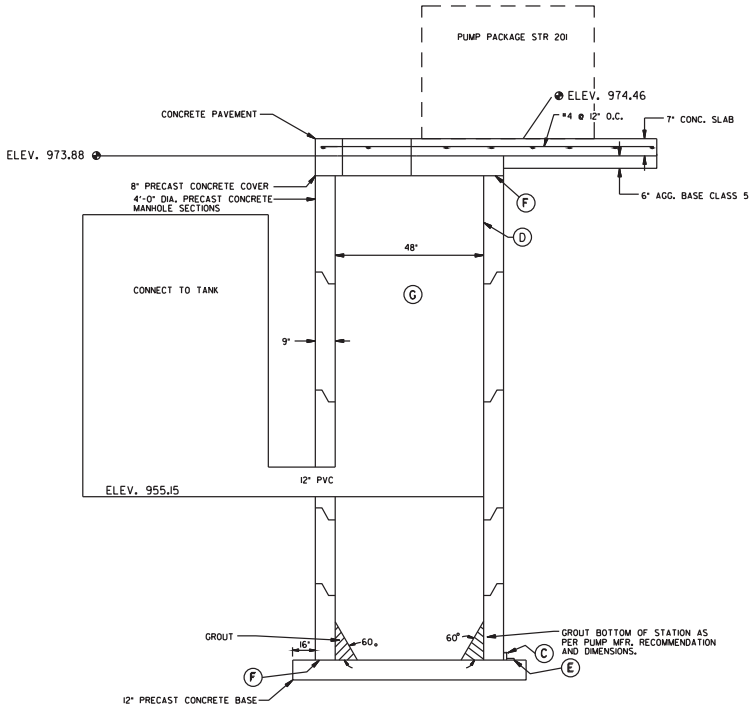
(D) APPLY PROTECTIVE COATING ON INSIDE OF THE BASE, BARREL AND COVER SECTIONS IN ACCORDANCE WITH THE LIFT STATION SPECIFICATIONS.

(E) 5/8 " DIA. GALVANIZED STEEL ANCHORS CAST IN BASE SLAB 3 PLACES AROUND BASE (120° ANGLE).

(F) APPLY 2 ROWS OF KENT SEAL #2 OR EQUAL.

(G) SEE NEXT SHEET FOR PUMP CONFIGURATION DETAIL.





STATION DATA	
PUMP CAPACITY (gpm)	120
PUMP HEAD (ft)	23
MOTOR SPEED	SEE NEXT SHEET
MOTOR HORSEPOWER	SEE NEXT SHEET
ELECTRIC SERVICE	3 PHASE - 208 VOLTS
DISCONNECT SIZE	200 AMP

STORMWATER REUSE WET WELL AND LIFT STATION DETAILS

NO	DATE	BY	CKD	APPR

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Print Name: David Filipiak
Date 1/28/2015 License # 19596

DRAWN BY LAB
DESIGNED BY LAB
CHECKED BY DWF
COMM. NO.8438

SRF Consulting Group, Inc. ENGINEERS PLANNERS DESIGNERS

CITY OF ROSEVILLE
PUMP STATION DETAILS
EVERGREEN PARK STORMWATER REUSE

SHEET 18 OF 21

PUMP STATION SPECIFICATIONS:
NAME: *EVERGREEN PARK*
STATION MODEL: SHST-1-(?K)-15V/(10)V-208-3-120-88
STATION TOTAL PERFORMANCE: 120 GPM @ 88 PSI
PUMP HORSEPOWER:
PUMP NO.1: 15 HP (3600RPM)
PUMP NO. 2: 10 HP (EXISTING BERKELY B2TPMS)
MIN SUGGESTED CIRCUIT BREAKER: 200 AMP
POWER REQUIREMENTS: 208 V, 60 HZ, 3 PHZ, 102 FLA

DESCRIPTION OF OPERATION:

PUMP WILL START VIA PRESSURE DROP SENSED IN WATER MAINLINE AND REGULATE A CONSTANT PRESSURE AT VARIABLE FLOW RATE. PUMP WILL RETIRE BASED UPON AN ADJUSTABLE MINIMUM WATER DEMAND (FLOW) AND SUSTAINED REGULATE PRESSURE.

WATER WILL BE DRAWN OUT OF MANHOLE. ONCE USER ADJUSTABLE LEVEL SET POINT IS SATISFIED THE AUTOMATIC VALVE WILL SWITCH TO CITY WATER AND THE PUMP WILL SHUT DOWN. VALVE WILL ALSO BE ENGAGED WHENEVER PUMP IS DISABLED VIA ALARM OR IN THE OFF POSITION. A MANUAL OVER RIDE BUTTON WILL ALSO BE LOCATED ON THE OPERATOR INTERFACE. VALVE WILL SWITCH BACK TO TANK WATER WHEN LEVEL RISES ABOVE USER ADJUSTABLE SET POINT. AUTOMATIC SWITCH TO CITY WATER UPON A POWER FAILURE IS AN AVAILABLE OPTION, SEE QUOTE FOR INCLUSION.

PUMP SYSTEM WILL TOTALIZE ALL WATER PUMPED AND ALL CITY MAKE UP WATER USED.

AUTOMATIC DISCHARGE FILTRATION SHALL BE FLUSHED UPON (3) INPUTS. DIFFERENTIAL PRESSURE, TOTAL GALLONS PUMPED, AND TIMED INTERVAL WHICHEVER OCCURS FIRST. FILTER SHALL ALSO HAVE ALARM AFTER (3) FLUSH CYCLES AND PRESSURE DIFFERENTIAL IS NOT RESTORED TO CLEAN SCREEN.

OWNER RESPONSIBLE FOR CITY WATER METER, BACK FLOW PREVENTOR AND ANY OTHER REGULATING DEVICES THAT MAY BE REQUIRED. OWNER RESPONSIBLE FOR VERIFYING CITY WATER CAPACITY MUST SUPPLY A MIN 120 GPM @ 63 PSI TO RAINWATER CONTROL SKID, AND NOT EXCEED 125PSI.

THE EXISTING BERKELEY BOOSTER PUMP WILL BE RELOCATED IN THE NEW PUMP STATION ENCLOSURE AND WILL BE CONTROLLED BY THE NEW PUMP STATION CONTROLS.

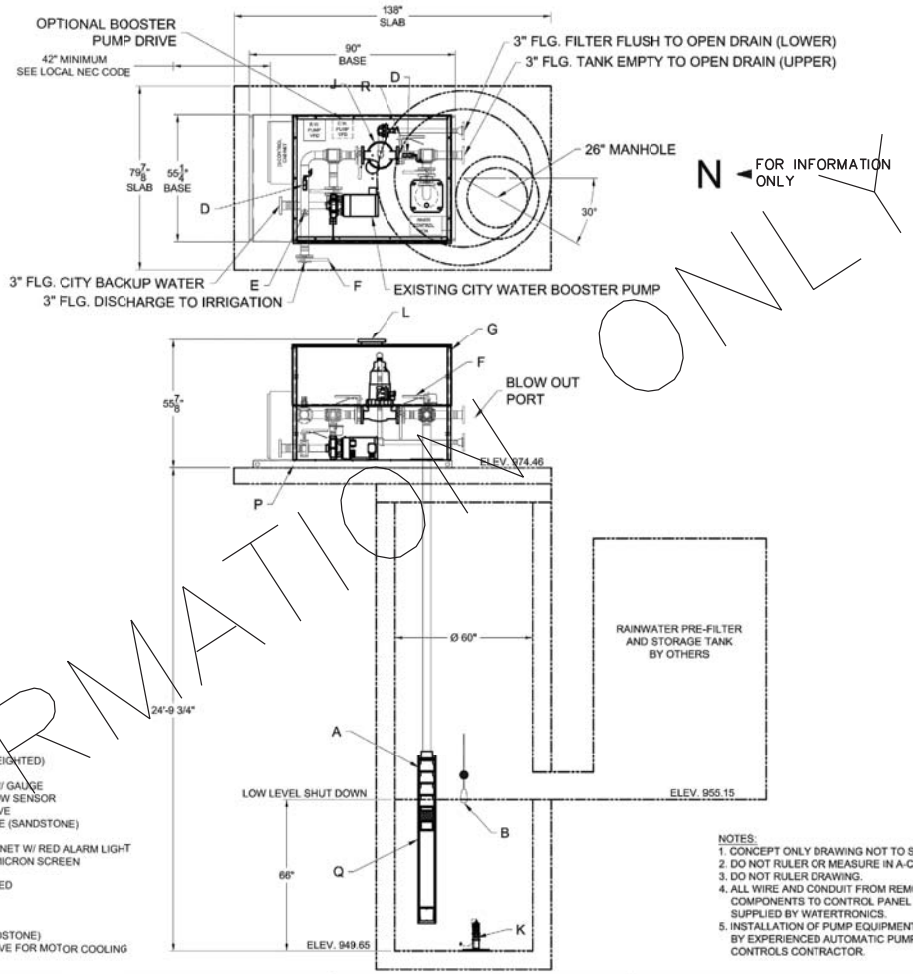
AN H.O.A. SELECTOR SWITCH WILL BE LOCATED ON THE MAIN CONTROL PANEL DEAD FRONT TO OPERATE THE TANK EMPTY 3-WAY VALVE FOR WINTERIZATION OF THE STORAGE TANK.

SYSTEM SHALL HAVE THE FOLLOWING ALARMS AT MINIMUM
-HIGH DISCHARGE PRESSURE
-LOW DISCHARGE PRESSURE
-VFD FAULT
-LOW LOW LEVEL SHUT DOWN (HARD FAULT)
-LOW LEVEL ALARM (SOFT FAULT)
-FILTER ALARM
-PIPE FILL ALARM (SYSTEM CAN NOT PRESSURIZE)
-LOSS OF PHASE OR PHASE REVERSAL
-HIGH VOLTAGE
-LOW VOLTAGE
-CONTROL POWER ALARM

CONTROL PANEL TO INCLUDE:
-COLOR TOUCHSCREEN OPERATOR INTERFACE
-FILTER CONTROLS AND DISPLAY
-FLOW SENSOR DISPLAY AND TOTALIZERS
-PSI DISPLAY AND SET POINTS
-AUTO RE-ENABLING OF PUMP BASED UPON WATER AVAILABILITY
-PUMP RUNNING STATUS & RUN-TIME HRS
-LEVEL CONTROLS AND DISPLAY IN "INCHES" & "GALLONS"
-USER ABILITY TO ADJUST ALL SYSTEM PARAMETERS
-VFD PRESSURE REGULATION FOR ENERGY EFFICIENCY
-BRANCH CIRCUIT PROTECTION
-U.L. 508 LISTED CONTROL PANEL ASSEMBLY
-PROGRAMABLE PLC "programable logic controller"
-NON-FUSABLE MAIN DISCONNECT
-HOA (hand, off, auto) SWITCH FOR PUMP
-SERIAL MODBUS PLC CAPABILITY

WIRE SCHEDULE
LEVEL SENSOR: 18 AWG 2 COND., SHIELDED (500 FT MAX)
LEVEL FLOAT: 14 AWG, 2 CONDUCTOR
MOTOR: 10 AWG, 3 CONDUCTOR PLUS GROUND

STATION COMPONENTS:
A 15 HP PUMP AND MOTOR
B LOW LEVEL FLOAT (SELF WEIGHTED)
C PUMP ISOLATION VALE
D PRESSURE TRANSDUCER W/ GAUGE
E PUMP / BACKUP WATER FLOW SENSOR
F DISCHARGE ISOLATION VALVE
G PAINTED STEEL ENCLOSURE (SANDSTONE)
H CHECK VALVE
I DEAD FRONT CONTROL CABINET W/ RED ALARM LIGHT
J AUTOMATIC FILTER W/ 300 MICRON SCREEN
K LEVEL TRANSDUCER
L 240 CFM FAN, HOOD MOUNTED
M N/A
N N/A
O INTAKE DROP PIPE
P PAINTED STEEL BASE (SANDSTONE)
Q HDPE FLOW INDUCER SLEEVE FOR MOTOR COOLING
R FILTER ISOLATION VALVE



NOTES:
1. CONCEPT ONLY DRAWING NOT TO SCALE.
2. DO NOT RULER OR MEASURE IN A-CAD SPACE.
3. DO NOT RULER DRAWING.
4. ALL WIRE AND CONDUIT FROM REMOTE COMPONENTS TO CONTROL PANEL NOT SUPPLIED BY WATERTRONICS.
5. INSTALLATION OF PUMP EQUIPMENT SHALL BE BY EXPERIENCED AUTOMATIC PUMP AND CONTROLS CONTRACTOR.

NO.	DATE	BY	DESCRIPTION
7			
6			
5			
4			
3	01/29/15	GDS	MOVED STATION OVER WET WELL
2	01/26/15	GDS	ADDED PUMP REMOVAL NOTES
1	01/13/15	GDS	UPDATED FOR BIDDING

DRAWN BY: GDS DATE: 01/12/15
CHECKED BY: . DATE: .

TITLE: EVERGREEN PARK
SHSTV-1-(?K)-15/(10)-230-1-120-88

WATERTRONICS
A LINDSAY COMPANY

SCALE: NTS | SHEET 1 OF 1 SHEETS
JOB NO.: . | DRAWING NO. PRSH10625

NO	DATE	BY	CKD	APPR

DRAWN BY LAB
DESIGNED BY LAB
CHECKED BY DWF
COMM. NO.8438

SRF Consulting Group, Inc.
ENGINEERS PLANNERS DESIGNERS

CITY OF ROSEVILLE
PUMP STATION DETAILS
EVERGREEN PARK STORMWATER REUSE

SHEET 19 OF 21

Fairview Trunk Underground Stormwater Project				Engineers Estimate	
Line No.	Description	Units	Quantity	Unit Price	Total Price
1	MOBILIZATION	LS	1	$24,000.00	$24,000.00
2	CLEARING	ACRE	0.5	$6,620.00	$3,310.00
3	GRUBBING	ACRE	0.5	$2,210.00	$1,105.00
4	REMOVE BITUMINOUS PAVEMENT	S Y	300	$6.45	$1,935.00
5	REMOVE BITUMINOUS PATHWAY	S Y	635	$11.10	$7,048.50
6	SAWING BITUMINOUS PAVEMENT	L F	200	$4.40	$880.00
7	SUBSOILING	ACRE	0.1	$6,650.00	$665.00
8	STREET SWEEPER (WITH PICKUP BROOM)	HOUR	20	$196.50	$3,930.00
9	AGGREGATE BASE (CV) CLASS 5	C Y	100	$25.50	$2,550.00
10	BITUMINOUS MATERIAL FOR TACK COAT	GAL	30	$6.05	$181.50
11	TYPE SPWEA240B WEARING COURSE MIX PATHWAY	TON	13	$135.00	$1,755.00
12	TYPE SPWEB340B WEARING COURSE MIX	TON	117	$135.00	$15,795.00
13	12" PVC PIPE SDR 11	L F	10	$110.00	$1,100.00
14	24" RC PIPE SEWER CLASS III	L F	155	$59.75	$9,261.25
15	24" RC PIPE SEWER CLASS V	L F	43	$97.75	$4,203.25
16	12" HDPE PIPE SEWER	L F	104	$43.50	$4,524.00
17	24" GATE VALVE	EA	1	$28,120.00	$28,120.00
18	3" PVC PIPE SDR 21	L F	55	$7.40	$407.00
19	4" PVC PIPE SDR 21	L F	368	$5.60	$2,060.80
20	CONST DRAINAGE STRUCTURE DESIGN F	L F	14	$235.50	$3,297.00
21	CONST DRAINAGE STRUCTURE DES 48-4020	L F	77	$292.00	$22,484.00
22	CONST DRAINAGE STRUCTURE DES 60-4020	L F	11	$317.50	$3,492.50
23	CONST DRAINAGE STRUCTURE DES 72-4020	L F	11	$753.00	$8,283.00
24	CONSTRUCT SAFL BAFFLE	EACH	1	$6,180.00	$6,180.00
25	MANHOLE CASTING R-1733B	EACH	10	$380.50	$3,805.00
26	7" CONCRETE WALK-REINFORCED	S F	77	$30.50	$2,348.50
27	TRAFFIC CONTROL	LS	1	$3,800.00	$3,800.00
28	SALVAGE AND REINSTALL SIGN	EACH	1	$1,400.00	$1,400.00
29	TREE PROTECTION	EACH	13	$193.00	$2,509.00
30	SILT FENCE, TYPE MACHINE SLICED	L F	110	$4.40	$484.00
31	STORM DRAIN INLET PROTECTION	EACH	7	$237.00	$1,659.00
32	SEDIMENT CONTROL LOG TYPE COMPOST	L F	215	$4.40	$946.00
33	TEMPORARY ROCK CONSTRUCTION ENTRANCE	EACH	1	$2,920.00	$2,920.00
34	SEED MIXTURE 22-111	LB	2.1	$132.50	$278.25
35	SODDING TYPE MINERAL	S Y	1850	$4.80	$8,880.00
36	MULCH MATERIAL TYPE 1	TON	0.14	$1,100.00	$154.00
37	4" SOLID LINE WHITE-PAINT	L F	140	$3.85	$539.00
38	4" DOUBLE SOLID LINE YELLOW-PAINT	L F	70	$4.40	$308.00
39	UNDERGROUND WATER STORAGE VAULT (STORM TRAP)	LS	1	$358,401.45	$358,401.45
40	REUSE/PUMP CONTROLS STATION	LS	1	$105,000.00	$105,000.00
41	OPTI-RTC	LS	1	$60,000.00	$60,000.00
					$710,000.00

Memorandum

To: Kyle Axtell
Rice Creek Watershed District

From: Garrett Monson, P.E., Greg Bowles, P.E.

Through: Chris Otterness, P.E.

Subject: City of Roseville – 2018 Urban Stormwater Cost-Share Program Application for Evergreen Park Underground Filtration and Reuse Project

Date: January 25, 2018

Project: File 5555-061

By task order 2017-023 dated December 1, 2017, HEI is providing the Rice Creek Watershed District (District) a technical review for the 2018 Urban Stormwater Remediation Cost Share grant applications. The review includes not only evaluating consistency with the goals of the Urban Stormwater Remediation Program, but the technical merits and feasibility of the proposed project and cost for reducing runoff volumes and loads. Based upon our review of the application by the City of Roseville, we offer the following comments for your use:

- The applicant is proposing to construct an underground filtration and stormwater reuse system to irrigate 4.5 acres within Evergreen Park along the Fairview Trunk System within the drainage area to Little Johanna Lake, which is a Tier I lake and in the SW Urban Lakes Study.
- This project includes volume reduction, which is the highest priority BMP category for the District. The applicant is proposing a water reuse system to be used for ballfield irrigation and flood storage. The City will maintain the BMP.
- The applicant estimated the BMPs would remove 11.5 lbs. of TP annually and 4,055 lbs. of TSS annually.
- Based on the nutrient removal estimates provided by the applicant, the average annual cost is approximately $2,058 per pound of TP and $5.84 per pound of TSS, based on a 30-year capital life of the BMP.
- The effectiveness of the project would be determined by the quantity of water irrigated from the underground storage tanks and the amount of sediment and floatables removed from the pretreatment feature.
- The project has high educational opportunity. The applicant is proposing to use signage in the park to explain the BMP and publish an article in a local publication.

Please call me at 763-493-4522 if I may be of further assistance with regard to this matter.

Rice Creek Watershed District 2018
Urban Stormwater Remediation Cost-Share Program
Application Form

Incomplete applications will be returned to the applicant.

I. APPLICANT INFORMATION

Organization (to be named as Grantee): City of Saint Anthony

Street Address: 3301 Silver Lake Road

City, State, Zip: St. Anthony, MN 55418

II. PROJECT CONTACTS

Project Officer: Jay Hartman

Telephone: (612) 782-3314

Fax:

Email: jay.hartman@savmn.com

Tax Status: Local Government

Financial Officer: Shelly Rueckart

Telephone: (612) 782-3316

Fax:

Email: shelly.rueckert@savmn.com

Tax ID#: Local Government

(e.g., local government, non-profit 501(c)(3), private business, etc.)

III. PROJECT INFORMATION

Project Name: Central Park Splash Pad Irrigation

Location(s) of Project: Central Park

City: St. Anthony Village State: MN County: Hennepin/Ramsey

Project Start Date: 03/01/2018 Project Completion Date: 11/01/2018

Project Type (check only those that directly apply):

- ☐ Water Quality Treatment Project
- ☑ Runoff Volume Control / Flood Storage Project
- ☐ Peak Runoff Rate Control Project
- ☑ Stormwater Reuse Irrigation Project
- ☑ Other

Is a RCWD Rule C permit from the RCWD required for this project? ☐ YES ☒ NO ☐ UNKNOWN

IV. COST-SHARE REQUEST

RCWD Cost-Share Funds Requested: $ 50,000.00

Local Matching Contributions: $ 120,000.00

State/Federal/Other Funds: $ 0.00 Source(s):

Total Estimated Project Cost: $ 170,000.00

Would you be willing to accept cost-share funding in an amount less than requested? ☒ YES ☐ NO

V. SIGNATURE OF APPLICANT *(An original signature page must be received with this application)*

I certify that the information contained within this application is true and accurate.

[signature] DCA

Signature of Project Officer

12-29-2017

Date

Jay Hartman - Director of Public Works

Title

VI. Executive Summary

Include a brief Executive Summary (100 words or less) that summarizes the main goals and activities of the project and the expected environmental outcomes that will be achieved. Identification of the total amount of funds being requested along with the required match must be included in the Executive Summary. The summaries will be used in the grant review process and on the RCWD website, for projects that are funded.

In St. Anthony, the Central Park Splash pad is located near the Water Reuse Facility, where stormwater is treated and used to irrigate over 20 acres of Central Park, St. Anthony High School and City Hall campuses. The project proposes to make a new connection from the splash pad to the water reuse facility by constructing a lift station and approximately 800 feet of storm sewer forcemain. The proposed connection has the potential to eliminate 2.4 million gallons of potable water used for Central Park irrigation. The cost of this project is $170,000 dollars. The City is requesting for the maximum funding of $50,000 from Rice Creek Watershed District.

VII. Project Description & Justification

The RCWD has established guidelines for prioritizing projects based on location. Water quality improvement projects should be located to benefit a RCWD Tier I or II lake (see Figure 4.2 in the RCWD's Watershed Management Plan), or a waterbody with an approved Total Maximum Daily Load (TMDL) study. Flood storage and runoff rate control projects should focus on reducing flood peaks in known regional flood hazard and problem areas. Describe the specific watershed management, water quality or quantity need(s) that the project will address and its impact on the target water resource within the District.

- Name the target waterbody benefitting from this project: Mirror Lake/Prarie DuChain/Jordan Aquifers
- List and describe the Best Management Practices (BMPs) that will be incorporated into this project, including any stormwater reuse components.

The goal of the project is to reuse the wasted water from the splash pad as irrigation. The Central Park splash pad uses approximately 6.9 million gallons of water annually. The splash pad equipment consists of a series of tipping buckets and four water jets. The current splash pad flow rate is 166 gallons per minute with a cycle time of four minutes. The existing irrigation demand of Central Park is approximately 7.0 million gallons annually, with 2.4 million gallons coming from potable water. By implementing this water reuse connection, the irrigation system will not use potable water, and instead use the discharge from the splash pad, reusing 34% of the wasted water from the splash pad. This will save the City 2.4 million gallons of potable water. An additional irrigation zone of several acres is also planned, increasing demand for reuse water.

- If applicable, describe how the project impacts or protects groundwater resources within the RCWD.

The proposed connection of the splash pad to the water reuse system will protect groundwater resources within the RCWD. The City of St. Anthony Village will conserve their drinking water sources by reusing the wasted water from the splash pad eliminating the need to use potable water for irrigation in Central Park. This project will prevent the use of 2.4 million gallons of potable water for irrigation of Central Park. This reduction on potable demand also reduces the energy demand necessary to treat the 2.4 million gallons of potable water used for irrigation. The groundwater in St. Anthony requires three treatment process due to the plume of the TCAAP contamination in the aquifer, allowing a large reduction of energy and saving groundwater.

- Describe how long-term operation and maintenance of the project will be accomplished.

The lift station will be inspected every fall to ensure proper steps are complete to keep the pump maintained for winter. The stormwater discharge point will be inspected annually to ensure there is no clogging of the pipes. The St. Anthony Water Reuse system has a operation and maintenance plan already in place and is inspected on a regular basis.

- If applicable, describe how the project minimizes impervious surface and/or maximizes infiltration.

The discharge of the Central Park splash pad currently drains into existing storm sewer and is sent further downstream to where it discharges into Mirror Lake. The new connection to the City's water reuse tank will allow the splash pad discharge to be sent to the reuse tank and then implemented into the irrigation system of Central Park. The irrigation system discharges water onto approximately 20 acres inside the park, school, and City hall campuses' lawn. The infiltration of the irrigation system allows plants and vegetation to grow and adds visual aesthetics to Central Park. Overflow is rare for the reuse tank, but overflow does drains south via storm sewer to the Mississippi River.

- Address how the project relates to and supports existing regional planning such as the RCWD Watershed Management Plan, municipal local surface water management plans, and/or others.

This project supports the City of St. Anthony's water reuse system and helps reduce stormwater discharge, and allows for infiltration to occur by the irrigation of Central Park. The RCWD Watershed Management Plan states to discuss projects that that reduce runoff volume by developing volume control requirements of the district. Some of these methods include water reuse through irrigation systems and regional infiltration facilities. The proposed connection will be eliminating runoff volume into Mirror Lake, and creating it as a reuse irrigation system.

- List all project partners and their respective roles in implementing and/or supporting the project.

The City of St. Anthony will be the main project sponsor and be the project manager of the project.
Rice Creek Watershed with be a project sponsor and be a support in the project.

VIII. Conceptual Design

Provide drawings, maps and/or schematics which graphically illustrate the location and conceptual design of the project. **(Attach separate sheets.)**

IX. Pollutant Reduction Estimates & Other Benefits

Provide a detailed estimate and description of the anticipated pollutant reduction, stormwater rate/volume reduction, groundwater withdrawal reduction, and/or other environmental or natural resource benefits associated with the project. Describe the methods and cite the sources (i.e. P8 model, HydroCAD, MN Stormwater Manual, etc.) used to calculate or estimate the pollutant reductions. **(NOTE: Mandatory for RCWD to consider your proposal!)**

Pollutant Reduction:
The groundwater that is used for irrigation comes from the city's potable water system. This system has to be filtered three times due to the contamination of TCAP in the aquifer. This project reduces plume of TCAP contamination of the Prarie DuChain/Jordan Aquifers by restricting drawing down the aquifer.

Stormwater Volume Reduction:
The irrigation demand of Central Park is currently 7.0 million gallons annually, and the average potable water augmentation from 2011 to 2015 was 2.4 million gallons per year. The Central Park Splash Pad currently uses approximately 6.9 million gallons of water annually and discharges into storm sewer. The new connection will reduce the stormwater volume entering into the stormwater sewer system. The volume was calculated based on hours of operation of the splash pad and the highest amount of water used per cycle of the splash pad quoted from the manufacturer. Discharge of the splash pad will no longer be going to Mirror Lake, and instead be sent to the reuse tank, which overflows south to West Mississippi Watershed.

Groundwater Withdrawal Reduction:
As stated above, the discharge from the splash pad will eliminate the 2.4 million potable water use for irrigation in Central Park. This relates to 34% of the water used in the splash pad is available for use in irrigation. The city of St. Anthony can save 2.4 million gallons per year of their groundwater withdrawal. This is estimated by the information gathered by the St. Anthony's water meters per year.

X. Detailed Cost Estimate

Provide a detailed and reasonable budget that lists each item for which funding is being requested. You must also list the required local matching contributions and their sources. **(Attach separate sheets.)**

XI. Evaluation

Describe the strategy for monitoring and/or evaluating the results or effectiveness of the project, including how success will be defined and measured.

There will be a couple of evaluations of the project results during construction and after.
•The input of potable water into the water reuse system will be monitored to see how successful the splash pad discharge is in elimination the 2.4 million gallons of potable water used for the reuse system. If the reuse system eliminates all potable water use for the reuse system then the project will be called highly successful in its main goal.
•The impact of a park user is another aspect for the effectiveness of the project. The new connection will be directionally drilled to have less of an impact in the park, however access will be prohibited few days during construction of the project. The City wants minimal impact to be a priority for the project during construction. This will be measured by the amount of residential complaints from the construction crew and the amount of days that the construction will be out there disrupting park influence. The park will be successful if both of these aspects together are below 15.
•If the project is not delayed or takes longer than what is projected it will be considered a success.
•If the project is on-budget when compared to the probable cost, it will be considered a success.

XII. Education & Demonstration

Demonstrate any potential for education and demonstration and describe what methods will be used to ensure that the purpose and success of the project are made known to the public. **(Applicants must include a public education component into the project.)**

While the system itself will be below ground, many residents are aware of the Water Reuse System in St. Anthony. The splash pad has a high consumer experience and is operating for 12 hours of the day, which provides high visibility and educational value. An interpretive sign will be installed by the splash pad to educate users on the new discharge system and the Water Reuse System. There will be graphics displaying the system and demonstrating how the water discharged from the splash pad will ultimately be used for irrigation in Central Park. The sign will publicize the value and benefits that stormwater can provide to the City and the Rice Creek Watershed District.

XIII. Key Personnel

List the lead personnel on the project including any known contractors that will be working on the project. Please include contact information.

WSB as the City Engineer has designed the project to be bid with the Cities 2018 Street and Utility Project. Below is a list of key personnel for the project,

Jay Hartman, Public Works Director, Phone: (612) 782-3314 Email: jay.hartman@savmn.com
Todd Hubmer, City Engineer, Phone: (763) 287-7182 Email: THubmer@wsbeng.com

Opinion of Probable Cost

WSB Project: Central Park Splash Pad Irrigation
Project Location: City of St. Anthony Village — City of St. Anthony (CST)
City Project Number: — Rice Creek Watershed District(RCWD)
WSB Project Number: 02170-430

Item Number	Description	Unit	Quantity	Unit Cost	Estimated Cost	Contributor	Sources
1	MOBILIZATION	LS	1	$7,500.00	$7,500.00	CST	City Budget
3	SALVAGE AND REINSTALL LANDSCAPE	EA	1	$1,500.00	$1,500.00	CST	City Budget
3	LIFT STATION AND PUMP	LS	1	$50,000.00	$50,000.00	RCWD	--
4	ELECTRICAL SERVICE	LS	1	$5,000.00	$5,000.00	CST	City Budget
5	4" HDPE PIPE SEWER (DIRECTIONALLY DRILLED)	LF	300	$65.00	$19,500.00	CST	City Budget
6	4" HDPE PIPE SEWER (DIRECTIONALLY DRILLED)	LF	700	$45.00	$31,500.00	CST	City Budget
7	CONNECT TO EXISTING STORM SEWER	EA	3	$750.00	$2,250.00	CST	City Budget
8	EROSION CONTROL	LS	1	$750.00	$750.00	CST	City Budget
				Subtotal	$118,000.00		
				+25% Contingency	$29,500.00		
				Subtotal	$147,500.00		
				+15% Indirect Costs	$22,200.00		
				Total Splash Pad Irrigation Costs	**$169,700.00**		
				Total Costs from RCWD	**$50,000.00**		
				Total Costs from CST	**$119,700.00**		

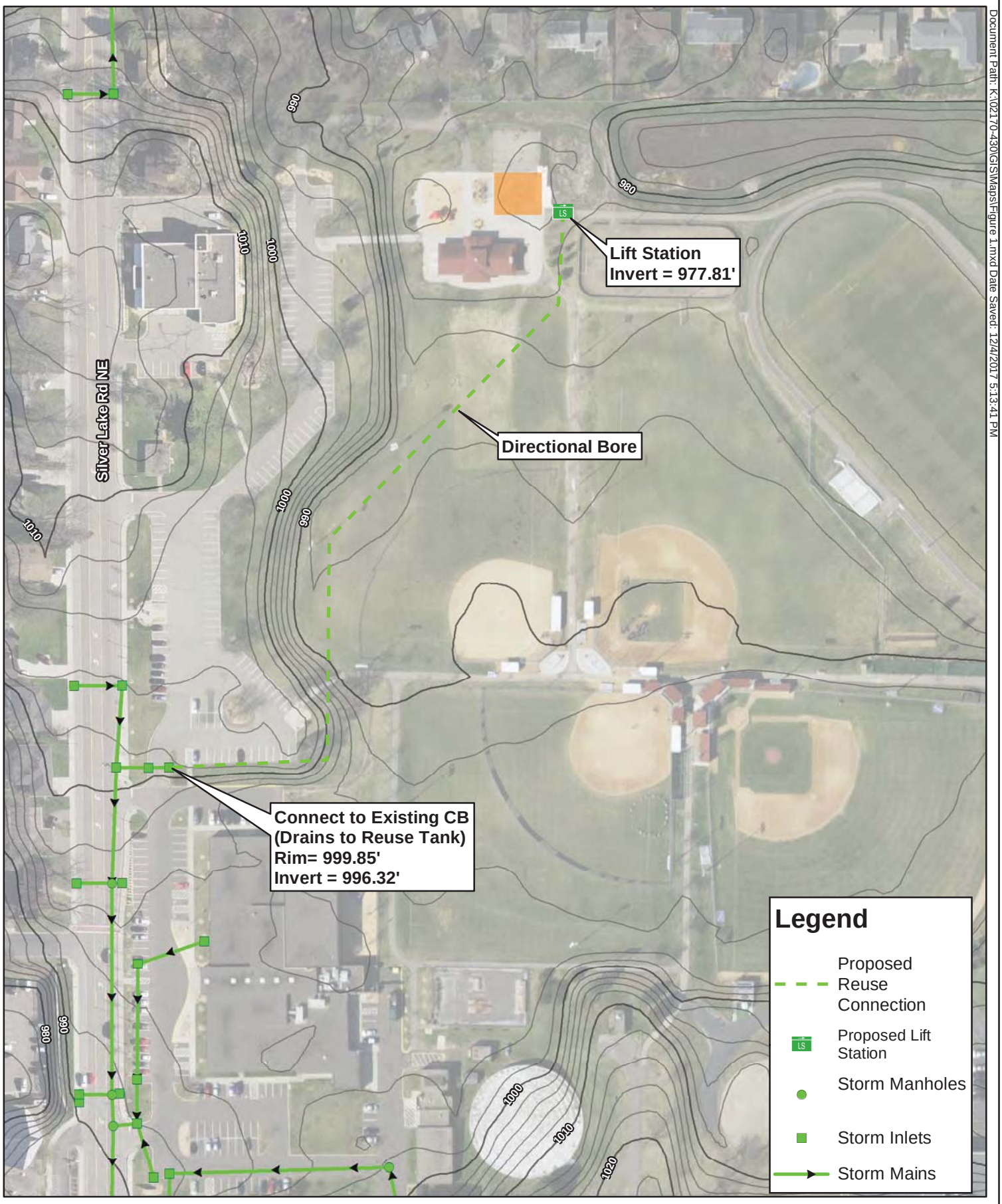


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Figure 1 - Central Park
Proposed Splash Pad Connection
to Reuse Tank
City of St. Anthony Village

N

0 150 Feet
1 inch = 150 feet

Saint Anthony Village

WSB

WSB PROJECT NO.: 010507-000

DESIGN BY: KAK
CHECK BY: JGH
PLAN BY: THC
SCALE: AS SHOWN

REVISIONS

NO.	DATE	DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

WILLIAM ALMS, P.E.
DATE: 12/12/2017 LIC. NO. 54301

2018 STREET AND UTILITY IMPROVEMENT PROJECT

ST. ANTHONY VILLAGE, MINNESOTA

FORCEMAIN GENERAL LAYOUT

SHEET 82 OF 86

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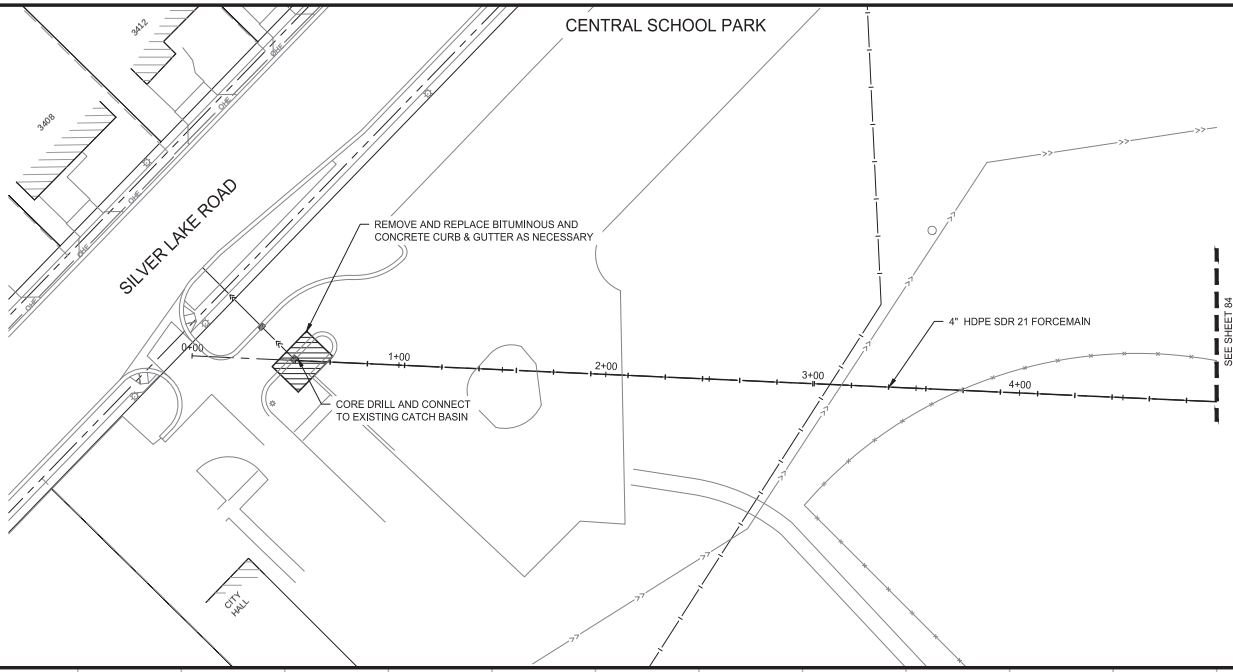
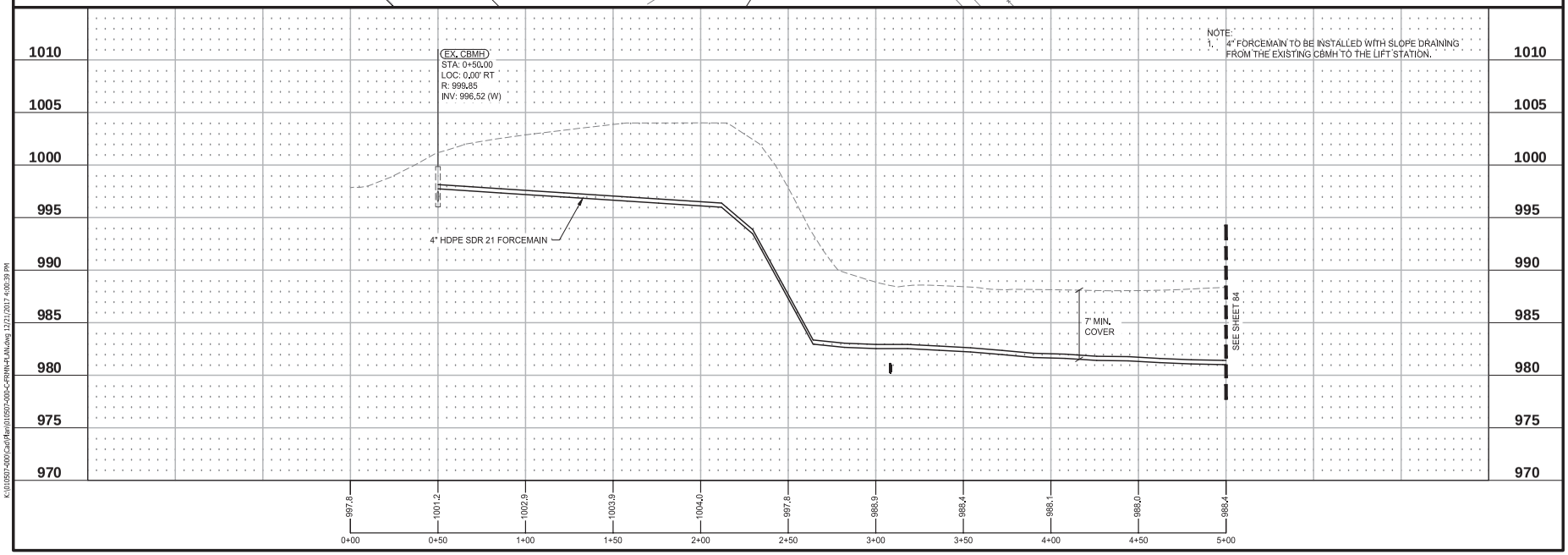
CENTRAL PARK

SILVER LAKE ROAD

34TH AVENUE NE





Saint Anthony Village

WSB

WSB PROJECT NO.: 010507-000

SCALE: AS SHOWN
DESIGN BY: KAK
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WILLIAM ALMS, PE
DATE: 12/12/2017
LIC. NO. 54301

2018 STREET AND UTILITY IMPROVEMENT PROJECT

ST. ANTHONY VILLAGE, MINNESOTA

FORCEMAIN CONSTRUCTION PLAN

SHEET 83 OF 86

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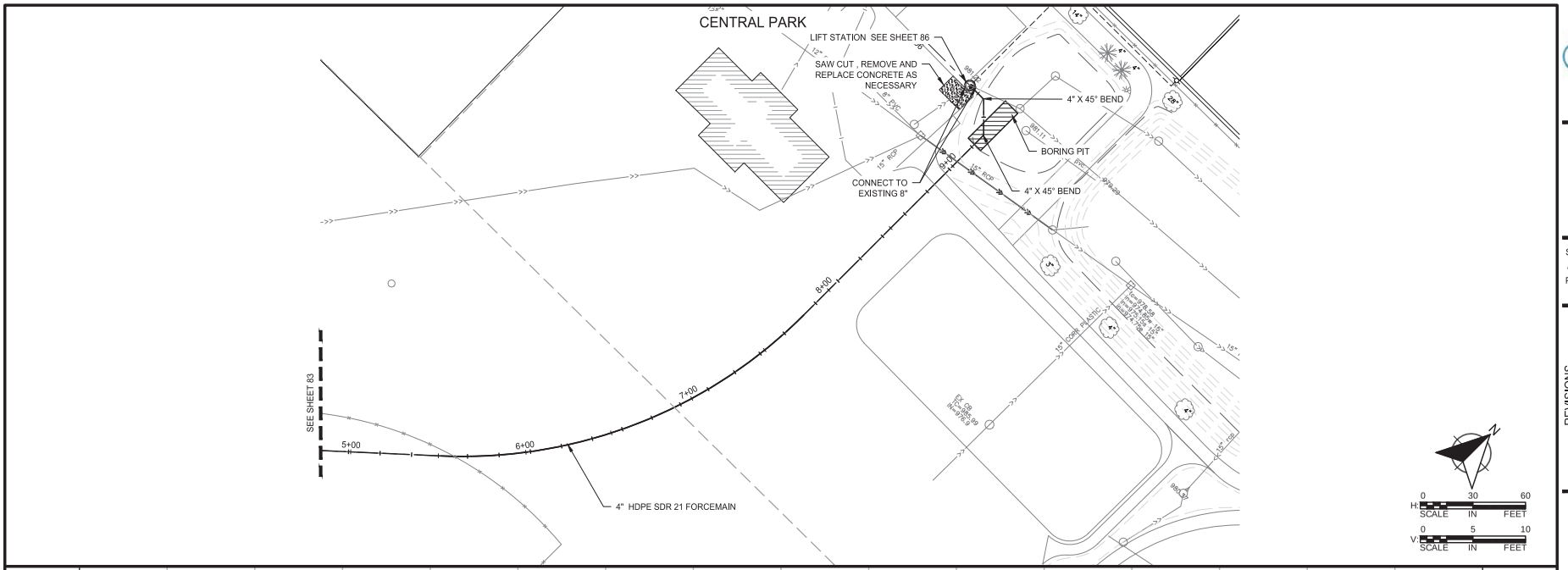

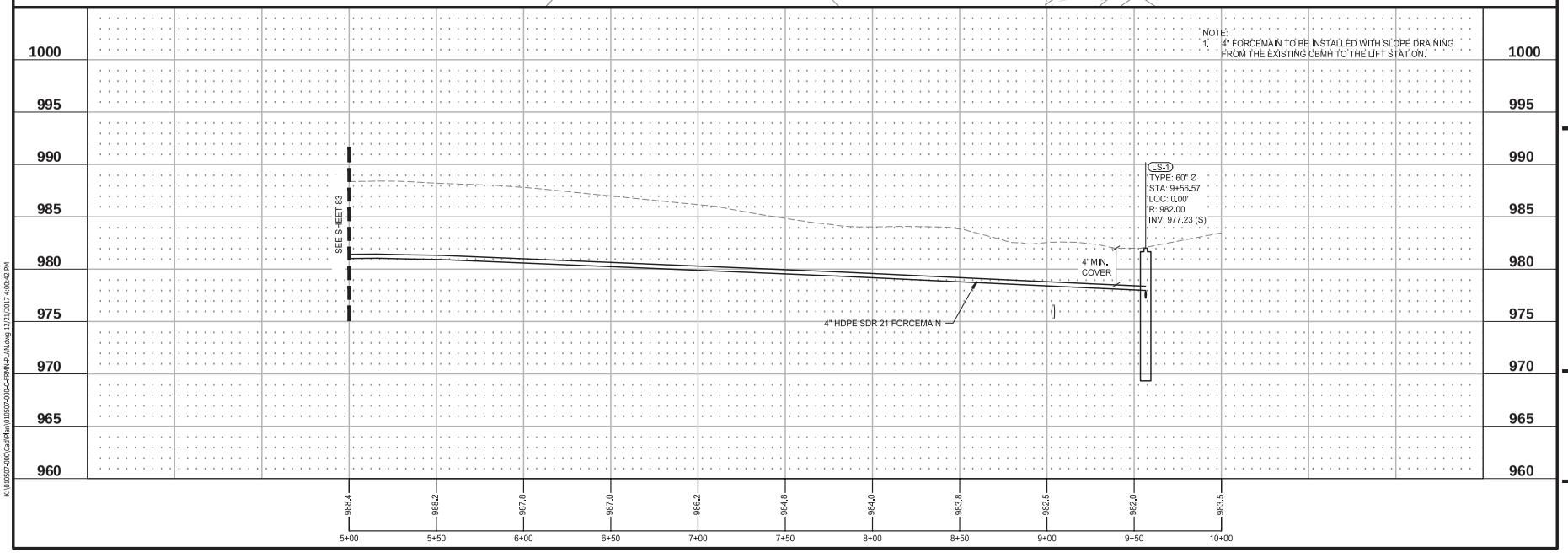

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Saint Anthony Village

WSB

WSB PROJECT NO.: 010507-000

SCALE:	DESIGN BY:
AS SHOWN	KAK
PLAN BY:	CHECK BY:
THC	JGH

REVISIONS

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WILLIAM ALMS, P.E.

DATE: 12/12/2017 LIC. NO. 54301

2018 STREET AND UTILITY IMPROVEMENT PROJECT

ST. ANTHONY VILLAGE, MINNESOTA

FORCEMAIN CONSTRUCTION PLAN

SHEET 84 OF 86

Saint Anthony Village

WSB

WSB PROJECT NO.: 010507-000

SCALE: AS SHOWN

DESIGN BY: KAK

CHECK BY: JGH

PLAN BY: THC

REVISIONS

NO.	DATE	DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

WILLIAM ALMS, P.E.

DATE: 12/12/2017 LIC. NO. 43031

2018 STREET AND UTILITY IMPROVEMENT PROJECT

ST. ANTHONY VILLAGE, MINNESOTA

FORCEMAIN SITE PLAN

SHEET 85 OF 86

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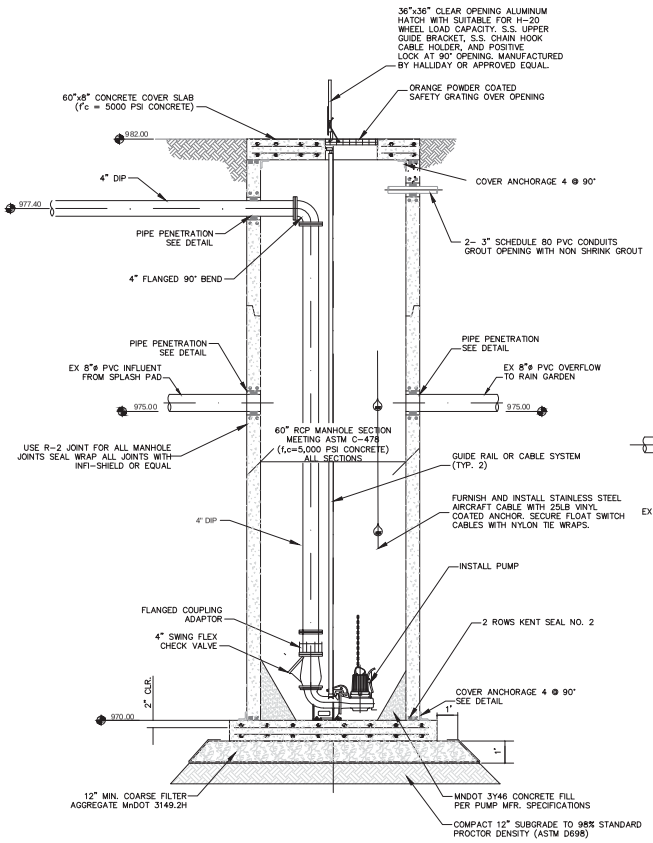

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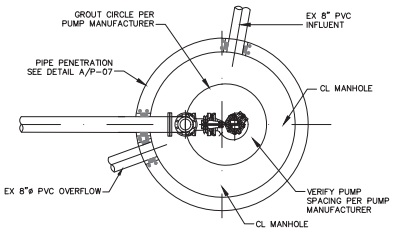

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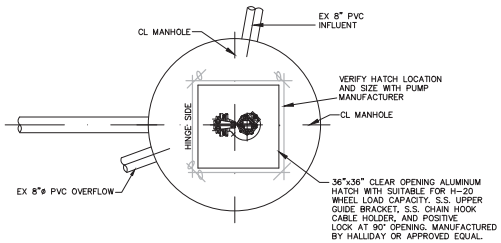
NOT TO SCALE



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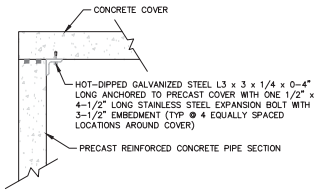
NOT TO SCALE



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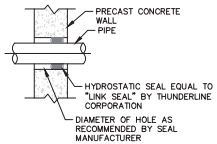

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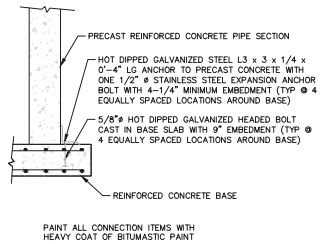

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BASE ANCHOR DETAIL
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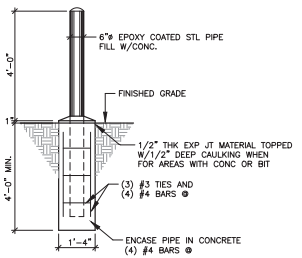

BOLLARD DETAIL
NOT TO SCALE

Saint Anthony Village

WSB

WSB PROJECT NO.: 010507-000

SCALE:	DESIGN BY:
AS SHOWN	KAK
PLAN BY:	CHECK BY:
THC	JGH

REVISIONS

NO.	DATE	DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

WILLIAM ALMS, P.E.

DATE: 12/12/2017 LIC. NO. 54301

2018 STREET AND UTILITY IMPROVEMENT PROJECT

ST. ANTHONY VILLAGE, MINNESOTA

WATER RE- USE LIFT STATION DETAILS

SHEET 86 OF 86

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Memorandum

To: Kyle Axtell
Rice Creek Watershed District

From: Garrett Monson, P.E., Greg Bowles, P.E.

Through: Chris Otterness, P.E.

Subject: City of Saint Anthony – 2018 Urban Stormwater Cost-Share Program Application for Central Park Splash Pad Irrigation

Date: January 25, 2018

Project: File 5555-061

By task order 2017-023 dated December 1, 2017, HEI is providing the Rice Creek Watershed District (District) a technical review for the 2018 Urban Stormwater Remediation Cost Share grant applications. The review includes not only evaluating consistency with the goals of the Urban Stormwater Remediation Program, but the technical merits and feasibility of the proposed project and cost for reducing runoff volumes and loads. Based upon our review of the application by the City of Saint Anthony, we offer the following comments for your use:

- The applicant is proposing to connect wastewater from a splash pad to a stormwater reuse system to irrigate over 20 acres within Central Park within the drainage area to Mirror Pond which ultimately drains to Long Lake, which is a Tier II lake.
- This project does include volume reduction, which is the highest priority BMP category for the District. However, the reduced volume is from potable water used to fill the splash pad and not stormwater, thus the applicant will be reducing reliance upon groundwater for irrigation and expand public education in the park. The City will maintain the pump system.
- The applicant estimated the project would reduce the need for 2.4 million gallons of groundwater to supplement irrigation demand.
- The effectiveness of the project would be determined by the quantity of water irrigated from the underground storage tanks.
- The project has moderate/high educational opportunity. The applicant is proposing signage in the park to explain the how the splash pad now supports the existing water reuse BMP.

Please call me at 763-493-4522 if I may be of further assistance with regard to this matter.

Rice Creek Watershed District 2018
Urban Stormwater Remediation Cost-Share Program
Application Form

Incomplete applications will be returned to the applicant.

I. APPLICANT INFORMATION

Organization (to be named as Grantee): City of Shoreview

Street Address: 4600 Victoria St N

City, State, Zip: Shoreview, MN 55126

II. PROJECT CONTACTS

Project Officer: Tom Wesolowski, City Engineer

Telephone: (651) 490-4652

Fax: (651) 490-4696

Email: twesolowski@shoreviewmn.gov

Financial Officer: Fred Espe, Finance Director

Telephone: (651) 490-4622

Fax: (651) 490-4696

Email: fespe@shoreviewmn.gov

Tax Status: local government

Tax ID#: 41-6008808

(e.g., local government, non-profit 501(c)(3), private business, etc.)

III. PROJECT INFORMATION

Project Name: Shoreview Rice Creek Fields Stormwater Reuse

Location(s) of Project: Rice Creek Fields- Shoreview City Park

City: Shoreview State: MN County: Ramsey

Project Start Date: 03/01/2018 Project Completion Date: 07/31/2018

Project Type (check only those that directly apply):

- ☐ Water Quality Treatment Project
- ☐ Runoff Volume Control / Flood Storage Project
- ☐ Peak Runoff Rate Control Project
- ☑ Stormwater Reuse Irrigation Project
- ☐ Other

Is a RCWD Rule C permit from the RCWD required for this project? ☐ YES ☒ NO ☐ UNKNOWN

IV. COST-SHARE REQUEST

RCWD Cost-Share Funds Requested: $ 50,000.00

Local Matching Contributions: $ 125,000.00

State/Federal/Other Funds: $ 150,000.00 Source(s): Metropolitan Council- Stormwater Grant Program

Total Estimated Project Cost: $ 325,000.00

Would you be willing to accept cost-share funding in an amount less than requested? ☒ YES ☐ NO

V. SIGNATURE OF APPLICANT *(An original signature page must be received with this application)*

I certify that the information contained within this application is true and accurate.

Signature of Project Officer

12/20/17
Date

City Engineer
Title

VI. Executive Summary

Include a brief Executive Summary (100 words or less) that summarizes the main goals and activities of the project and the expected environmental outcomes that will be achieved. Identification of the total amount of funds being requested along with the required match must be included in the Executive Summary. The summaries will be used in the grant review process and on the RCWD website, for projects that are funded.

Rice Creek Fields are high-quality fast-pitch fields that attract athletes from around the country. On average, more than 6.0 million gallons of water are applied to the fields each year. This project proposes to retrofit the irrigation system to use water from a nearby stormwater pond rather than potable water, conserving millions of gallons of groundwater annually. This would reduce aquifer demands in an area deemed to be in need of focused, comprehensive water management. Shoreview is requesting a cost share of $50,000, and plans to contribute $125,000. Additional funding of $150,000 was awarded by the Metropolitan Council for this project.

VII. Project Description & Justification

The RCWD has established guidelines for prioritizing projects based on location. Water quality improvement projects should be located to benefit a RCWD Tier I or II lake (see Figure 4.2 in the RCWD's Watershed Management Plan), or a waterbody with an approved Total Maximum Daily Load (TMDL) study. Flood storage and runoff rate control projects should focus on reducing flood peaks in known regional flood hazard and problem areas. Describe the specific watershed management, water quality or quantity need(s) that the project will address and its impact on the target water resource within the District.

- Name the target waterbody benefitting from this project: Rice Creek & Long Lake
- List and describe the Best Management Practices (BMPs) that will be incorporated into this project, including any stormwater reuse components.

This project proposes a stormwater reuse irrigation system that would use water from an overbuilt stormwater pond south of Rice Creek Fields to irrigate the high-quality fast-pitch fields located in the Anoka Sand Plains. Currently, the Rice Creek Fields irrigate using an average of 6.0 million gallons of potable water a year. This project provides the City with an opportunity to reduce summer water demand on groundwater resources. 11.48 acres will be irrigated by this project.

- If applicable, describe how the project impacts or protects groundwater resources within the RCWD.

This project proposes to retrofit the irrigation system at Rice Creek Fields to use water from a nearby stormwater pond rather than potable water, thereby conserving an average of 6.0 million gallons of groundwater annually in the North and East Metro Groundwater Management Area. Using stormwater for irrigation reduces the demands put on the aquifer in an area the Department of Natural Resources has deemed to be in need of proactive water management.

- Describe how long-term operation and maintenance of the project will be accomplished.

The City will own and maintain all aspects of the project including the stormwater intake, the filter and UV units, pumps, controls and valves. The system will be operated according to a plan that will be agreed upon during project construction. Additionally, prior to each irrigation season the storage area is to be tested for water quality and the results compared to the MPCA guidelines. The intake filter will significantly reduce turbidity and TSS, and the pumping station is equipped with a chlorides probe that will automatically switch the station off if chloride levels are high.

- If applicable, describe how the project minimizes impervious surface and/or maximizes infiltration.

This project does not directly impact impervious surfaces at Rice Creek Fields as it is not proposing to change impervious surface ratios in the project area. The project is also not directly maximizing infiltration, but it is using stormwater collected in a storm pond to irrigate high-quality turf grass in a high-traffic City park. This re-use of storm water increases infiltration by spreading the water over a larger area of land.

- Address how the project relates to and supports existing regional planning such as the RCWD Watershed Management Plan, municipal local surface water management plans, and/or others.

This project is highlighted in Shoreview's 2018 Surface Water Management Plan update, in the Capital Improvement Plan, and in the Rice Creek Watershed District's Watershed Management Plan update. The project also meets the parameters of the Metropolitan Council's Stormwater Grant Program.

- List all project partners and their respective roles in implementing and/or supporting the project.

City of Shoreview- managing the project and overseeing consultant work
WSB Engineering- design and construction consultants for the project
Rice Creek Watershed District- funding partners and project collaborators
Metropolitan Council- funding partners through their Stormwater Grant Program

VIII. Conceptual Design

Provide drawings, maps and/or schematics which graphically illustrate the location and conceptual design of the project. **(Attach separate sheets.)**

IX. Pollutant Reduction Estimates & Other Benefits

Provide a detailed estimate and description of the anticipated pollutant reduction, stormwater rate/volume reduction, groundwater withdrawal reduction, and/or other environmental or natural resource benefits associated with the project. Describe the methods and cite the sources (i.e. P8 model, HydroCAD, MN Stormwater Manual, etc.) used to calculate or estimate the pollutant reductions. **(NOTE: Mandatory for RCWD to consider your proposal!)**

In addition to conserving an average of 6.0 million gallons of potable water a year, the project will have the additional benefit of removing phosphorus from the watershed, ultimately improving water quality in Rice Creek and Long Lake, which are listed as impaired by the Minnesota Pollution Control Agency for aquatic life and nutrients, respectively. A P8 model produced in 2017 estimated that 45 pounds of total phosphorus enter the pond each year, a significant portion of which will be removed by this project.

Using estimates for the volumes of runoff, irrigation, and discharge, together with average pollutant concentrations and removal rates from the Minnesota Stormwater Manual MIDS Calculator, it is estimated that the City can divert approximately 5.8 pounds of total phosphorus per year from Rice Creek that otherwise would have entered through discharge from the stormwater pond.

X. Detailed Cost Estimate

Provide a detailed and reasonable budget that lists each item for which funding is being requested. You must also list the required local matching contributions and their sources. **(Attach separate sheets.)**

XI. Evaluation

Describe the strategy for monitoring and/or evaluating the results or effectiveness of the project, including how success will be defined and measured.

The City will evaluate the effectiveness of the project by observing the reduction in the use of potable water being used for irrigation. While the system will be set up to allow, if necessary, the use of potable water during low water or high chloride periods at the pond, the default will be to reuse stormwater for the irrigation of Rice Creek Fields. The flows will be metered and data collected for comparison against pre-project conditions.

XII. Education & Demonstration

Demonstrate any potential for education and demonstration and describe what methods will be used to ensure that the purpose and success of the project are made known to the public. **(Applicants must include a public education component into the project.)**

The project offers an exceptional opportunity for public eduction due to the high volume of foot traffic through the fields in the summer. It is estimated that over 60,000 people visit the fields each summer. The City will erect several permanent educational signs to teach users about the benefits of water reuse and conservation. Upon completion, the City will offer tours to residents and interested parties to showcase the project.

XIII. Key Personnel

List the lead personnel on the project including any known contractors that will be working on the project. Please include contact information.

Tom Wesolowski, City Engineer, City of Shoreview, MN (651-490-4652) twesolowski@shoreviewmn.gov
Ellen Brenna, Natural Resources Specialist, City of Shoreview, MN (651-490-4665) ebrenna@shoreviewmn.gov
Lauren Sampedro, Water Resource Specialist, Rice Creek Watershed District (763-398-3078) lsampedro@ricecreek.org
Richard Parr, Senior Project Manager, WSB & Associates (651-286-8457) RParr@wsbeng.com

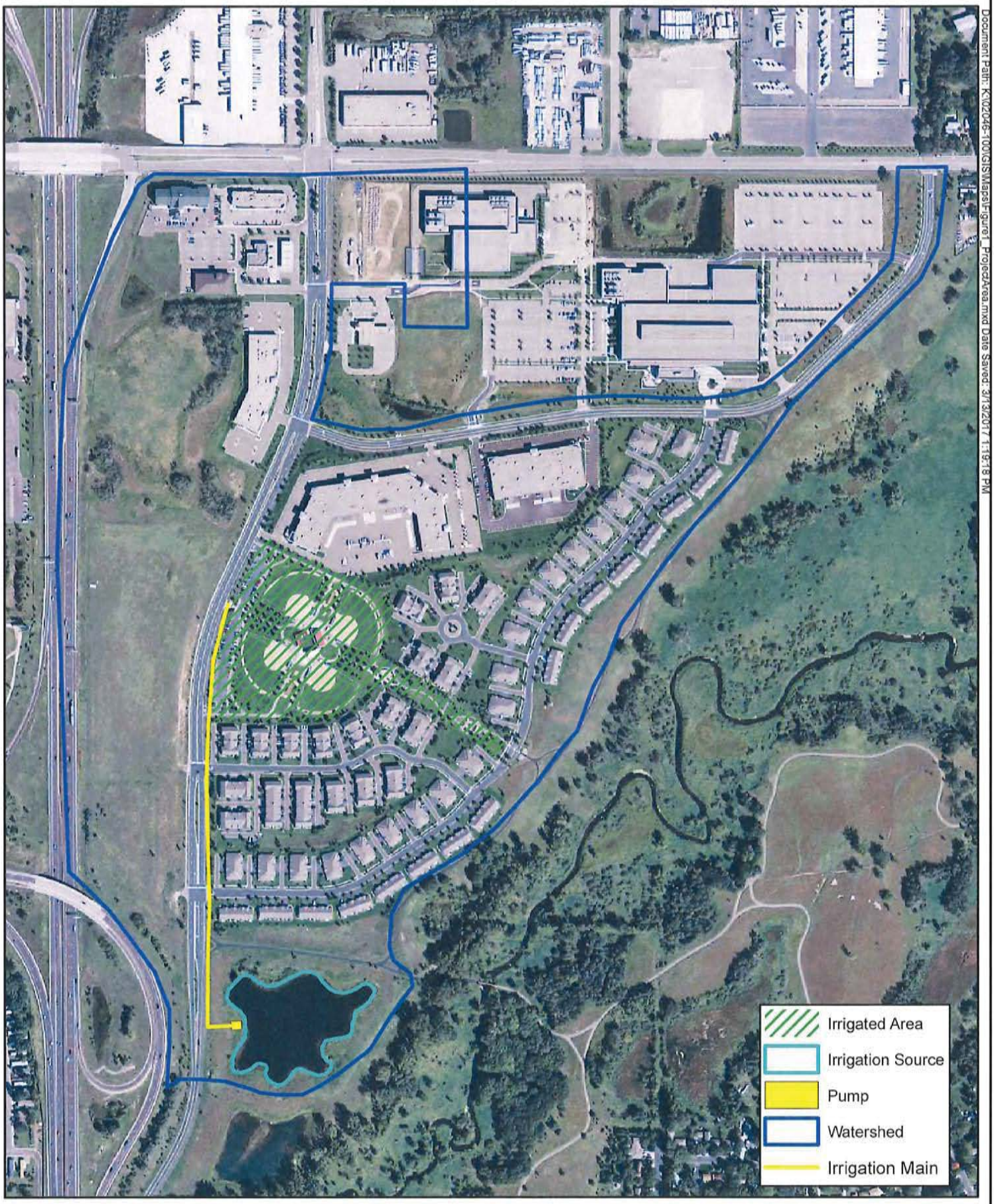


Figure 1 - Stormwater Irrigation System

Rice Creek Park Stormwater Reuse
City of Shoreview

Rice Creek Fields Stormwater Irrigation
Estimated Costs
City of Shoreview, MN

Task	Estimated Cost
Feasibility Total	**$14,500**
Pumping System, Forcemain Distribution, and Irrigation Retrofit	$235,000
Educational Signing	$7,500
Mobilization, Erosion Control, and Site Restoration	$23,500
Construction Subtotal	**$266,000**
10% Contingency	$26,600
Construction Total	**$292,600**
20% Indirect	$58,520
Total	$365,600

Memorandum

To: Kyle Axtell
Rice Creek Watershed District

From: Garrett Monson, P.E., Greg Bowles, P.E.

Through: Chris Otterness, P.E.

Subject: City of Shoreview – 2018 Urban Stormwater Cost-Share Program Application for Rice Creek Fields Stormwater Reuse

Date: January 25, 2018

Project: File 5555-061

By task order 2017-023 dated December 1, 2017, HEI is providing the Rice Creek Watershed District (District) a technical review for the 2018 Urban Stormwater Remediation Cost Share grant applications. The review includes not only evaluating consistency with the goals of the Urban Stormwater Remediation Program, but the technical merits and feasibility of the proposed project and cost for reducing runoff volumes and loads. Based upon our review of the application by the City of Shoreview, we offer the following comments for your use:

- The applicant is proposing to construct a stormwater reuse system to irrigate 11.48 acres within the Rice Creek Fields ball park within the drainage area to Long Lake, which is a Tier II lake.
- This project includes volume reduction, which is the highest priority BMP category for the District. The applicant is proposing a water reuse system to be used with an existing NURP pond for ball filed irrigation. The City will maintain the BMP.
- The applicant estimated the BMPs would remove at least an additional 5.8 lbs. of TP annually.
- Based on the nutrient removal estimates provided by the applicant, the average annual cost is approximately $1,868 per pound of TP, based on a 30-year capital life of the BMP.
- The effectiveness of the project would be determined by the reduction in quantity of potable water used to irrigate the ball fields.
- The project has moderate/high educational opportunity. The applicant is proposing signage in the park to explain the BMP and will provide tours to the community.

Please call me at 763-493-4522 if I may be of further assistance with regard to this matter.

Rice Creek Watershed District 2018
Urban Stormwater Remediation Cost-Share Program
Application Form

Incomplete applications will be returned to the applicant.

I. APPLICANT INFORMATION

Organization (to be named as Grantee): White Bear Township

Street Address: 1281 Hammond Road

City, State, Zip: White Bear Township, MN 55110

II. PROJECT CONTACTS

Project Officer: Dale Reed
Telephone: (651) 747-2777
Fax:
Email: dale.reed@whitebeartownship.org
Tax Status: local government

Financial Officer: Tom Kelly
Telephone: (651) 747-2760
Fax:
Email: tom.kelly@whitebeartownship.org
Tax ID#: 41-6005642

(e.g., local government, non-profit 501(c)(3), private business, etc.)

III. PROJECT INFORMATION

Project Name: Outfall Improvements to Bald Eagle Lake

Location(s) of Project: Bald Eagle Lake at Park Avenue and St. Anthony Avenue

City: White Bear Township State: MN County: Ramsey

Project Start Date: 05/01/2018 Project Completion Date: 10/01/2018

Project Type (check only those that directly apply):

- [x] Water Quality Treatment Project
- [ ] Runoff Volume Control / Flood Storage Project
- [ ] Peak Runoff Rate Control Project
- [ ] Stormwater Reuse Irrigation Project
- [ ] Other

Is a RCWD Rule C permit from the RCWD required for this project? [ ] YES [ ] NO [■] UNKNOWN

IV. COST-SHARE REQUEST

RCWD Cost-Share Funds Requested: $ 37,000.00

Local Matching Contributions: $ 37,000.00

State/Federal/Other Funds: $ 0.00 Source(s):

Total Estimated Project Cost: $ 74,000.00

Would you be willing to accept cost-share funding in an amount less than requested? [■] YES [ ] NO

V. SIGNATURE OF APPLICANT *(An original signature page must be received with this application)*

I certify that the information contained within this application is true and accurate.

Signature of Project Officer

12/19/2017
Date

Public Works Director
Title

VI. Executive Summary

Include a brief Executive Summary (100 words or less) that summarizes the main goals and activities of the project and the expected environmental outcomes that will be achieved. Identification of the total amount of funds being requested along with the required match must be included in the Executive Summary. The summaries will be used in the grant review process and on the RCWD website, for projects that are funded.

Bald Eagle Lake is impaired for nutrients and has a TMDL in place. The improvements will help White Bear Township work toward meeting the designated Waste Load Allocation.

The project would involve installing sumped manholes with SAFL Baffles to capture sediment and debris at Park Avenue and St. Anthony Avenue at Bald Eagle Lake before entering the lake. The project would include stabilizing the outfall discharge with riprap.

White Bear Township is requesting $37,000 out of a total project cost of $74,000.

VII. Project Description & Justification

The RCWD has established guidelines for prioritizing projects based on location. Water quality improvement projects should be located to benefit a RCWD Tier I or II lake (see Figure 4.2 in the RCWD's Watershed Management Plan), or a waterbody with an approved Total Maximum Daily Load (TMDL) study. Flood storage and runoff rate control projects should focus on reducing flood peaks in known regional flood hazard and problem areas. Describe the specific watershed management, water quality or quantity need(s) that the project will address and its impact on the target water resource within the District.

- Name the target waterbody benefitting from this project: Bald Eagle Lake
- List and describe the Best Management Practices (BMPs) that will be incorporated into this project, including any stormwater reuse components.

As summarized in the Bald Eagle Subwatershed: Urban Stormwater Retrofit Analysis report in June 2016, Bald Eagle Lake was classified as impaired by the DNR in 2002 for nutrients and eutrophication. The state standards for the lake are 40ug/L for phosphorus, and greater than 1.4m for secchi depth transparency. The Bald Eagle Lake Nutrient TMDL reports that during the years of 1990-2007, the average phosphorus has been 76 ug/L and the average secchi depth has been 1.7m. To help reduce nutrients and solids entering the lake, a SAFL Baffle will be installed at two locations to capture sediment and debris before entering the lake. The project would also include shoreline stabilization of the outfall discharge with riprap.

- If applicable, describe how the project impacts or protects groundwater resources within the RCWD.

N/A

- Describe how long-term operation and maintenance of the project will be accomplished.

White Bear Township will maintain the SAFL baffles and will remove debris 1-3 times a year, as necessary.

- If applicable, describe how the project minimizes impervious surface and/or maximizes infiltration.

N/A

- Address how the project relates to and supports existing regional planning such as the RCWD Watershed Management Plan, municipal local surface water management plans, and/or others.

This project would implement the BMPs outlined for these two outfalls and a shoreline restoration outlined in the South Bald Eagle Lake Subwatershed Assessment. They are recommendation IDs 5-3, 6-4, and 6-5 in the assessment.

- List all project partners and their respective roles in implementing and/or supporting the project.

Ramsey County Conservation District for education materials and recommendations for the signs posted at each location.

RCWD for continued water quality monitoring of Bald Eagle Lake to help evaluate the success of the project.

VIII. Conceptual Design

Provide drawings, maps and/or schematics which graphically illustrate the location and conceptual design of the project. **(Attach separate sheets.)**

IX. Pollutant Reduction Estimates & Other Benefits

Provide a detailed estimate and description of the anticipated pollutant reduction, stormwater rate/volume reduction, groundwater withdrawal reduction, and/or other environmental or natural resource benefits associated with the project. Describe the methods and cite the sources (i.e. P8 model, HydroCAD, MN Stormwater Manual, etc.) used to calculate or estimate the pollutant reductions. **(NOTE: Mandatory for RCWD to consider your proposal!)**

The Park Avenue SAFL baffle is estimated to reduce Total Phosphorus (TP) by 0.79 lb/yr and Total Suspended Solids (TSS) by 319 lb/yr according to the Bald Eagle Lake Subwatershed Assessment prepared by Ramsey Conservation District using the WinSLAMM model. A SHSAM model estimates TSS removal to be 1,467 lb/yr for a 66" structure and 1,893 lb/yr for a 84" structure.

The St. Anthony SAFL baffle and shoreline restoration is estimated to reduce TP by 0.73 and 2.21 lb/yr and TSS by 301 and 2,760 lb/yr, respectively, according to the Bald Eagle Lake Subwatershed Assessment prepared by Ramsey Conservation District using the WinSLAMM model. A SHSAM model estimates TSS removal to be 1,265 lb/yr for a 66" structure and 1,598 lb/yr for a 84" structure.

X. Detailed Cost Estimate

Provide a detailed and reasonable budget that lists each item for which funding is being requested. You must also list the required local matching contributions and their sources. **(Attach separate sheets.)**

XI. Evaluation

Describe the strategy for monitoring and/or evaluating the results or effectiveness of the project, including how success will be defined and measured.

Monitor Secchi disk depth for water clarity. White Bear Township will be responsible for the long-term maintenance and will estimate the TSS removal annually based on of volume removed when the sumps are vacuumed and cleaned out.

XII. Education & Demonstration

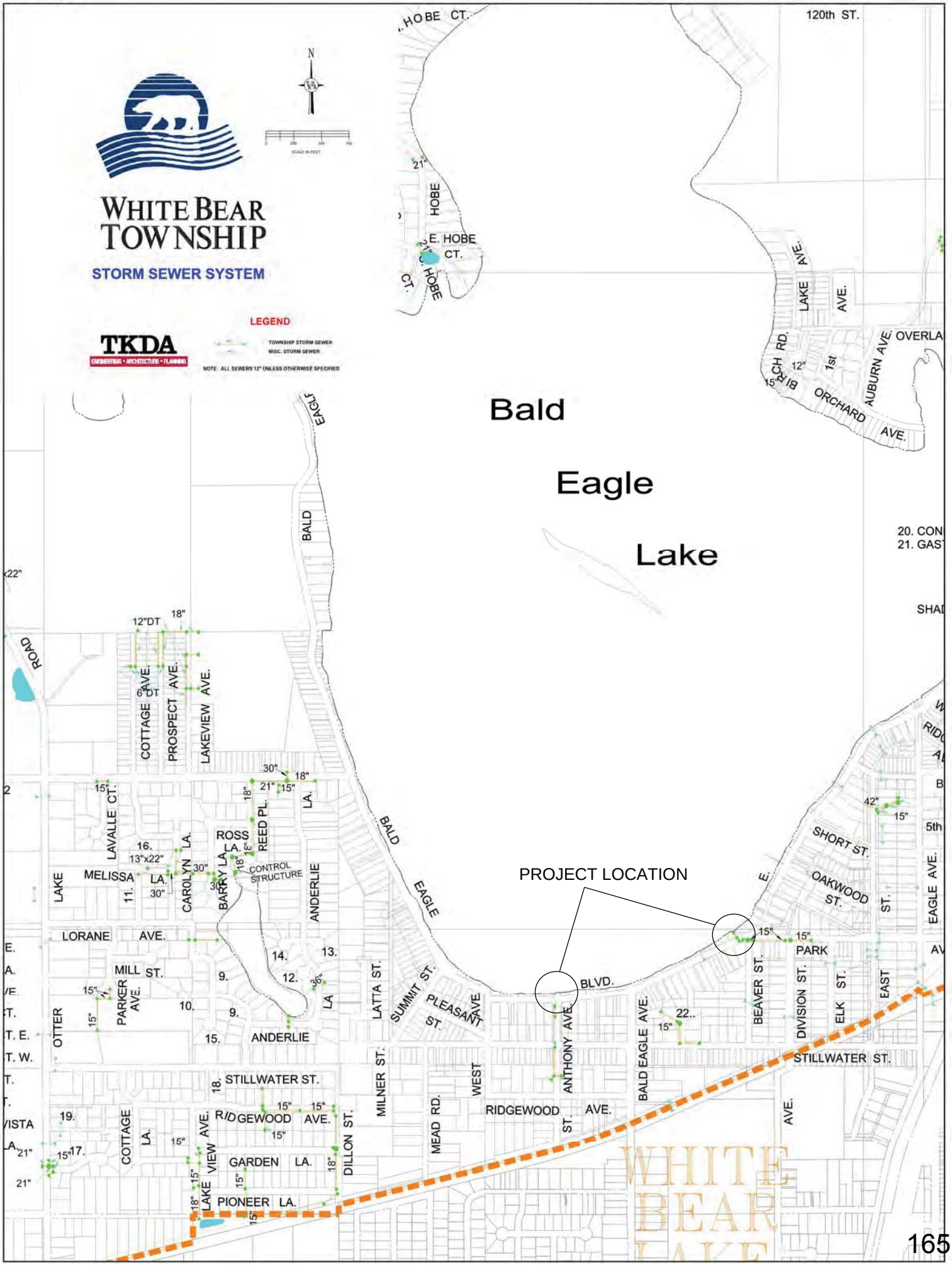
Demonstrate any potential for education and demonstration and describe what methods will be used to ensure that the purpose and success of the project are made known to the public. **(Applicants must include a public education component into the project.)**

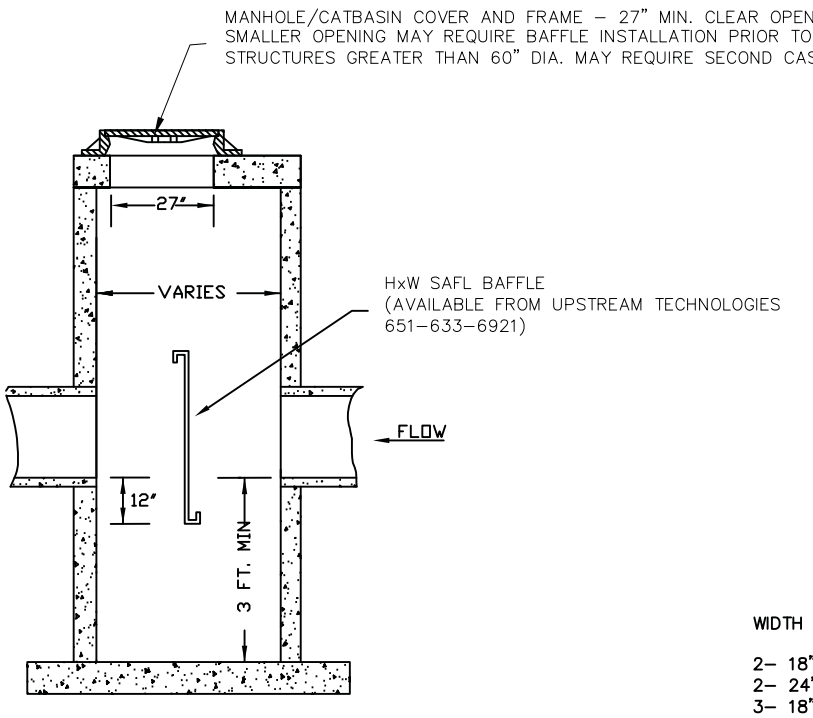
Education materials will be posted on the White Bear Township website, topics will include, erosion control and phosphorus and sediment transport to surface waters. Signs will be posted at each site outlining the benefits of the improvements.

XIII. Key Personnel

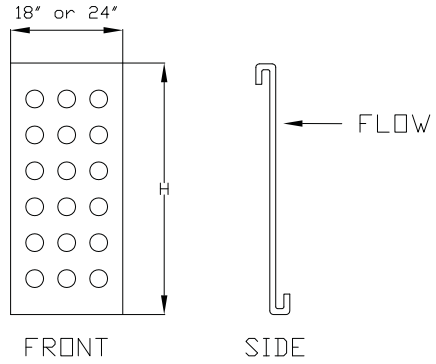
List the lead personnel on the project including any known contractors that will be working on the project. Please include contact information.

Dale Reed, White Bear Township, Public Works Director, 651-747-2777
Jim Studenski, TKDA, White Bear Township Engineer, 651-292-4503
Leigh Severson, TKDA, Project Engineer, 651-726-7945


WHITE BEAR TOWNSHIP
STORM SEWER SYSTEM
TKDA
LEGEND
TOWNSHIP STORM SEWER
MISC. STORM SEWER
NOTE: ALL SEWERS 12" UNLESS OTHERWISE SPECIFIED
N
SCALE IN FEET
Bald
Eagle
Lake
PROJECT LOCATION
120th ST.
E. HOBE CT.
HOBE CT.
LAKE AVE.
AUBURN AVE.
ORCHARD AVE.
EAGLE
BALD
ROAD
COTTAGE AVE.
PROSPECT AVE.
LAKEVIEW AVE.
LAVALLE CT.
ROSS LA.
REED PL.
CAROLYN LA.
BARRY LA.
CONTROL STRUCTURE
ANDERLIE
MELISSA LA.
LAKE
LORANE AVE.
MILL ST.
PARKER AVE.
OTTER
ANDERLIE
LATTA ST.
SUMMIT ST.
PLEASANT AVE
BLVD.
PARK
SHORT ST.
OAKWOOD ST.
EAGLE AVE.
BEAVER ST.
DIVISION ST.
ELK ST.
EAST
STILLWATER ST.
ANTHONY AVE.
BALD EAGLE AVE.
MILNER ST.
WEST
MEAD RD.
RIDGEWOOD AVE.
DILLON ST.
GARDEN LA.
PIONEER LA.
LAKE VIEW AVE.
COTTAGE LA.



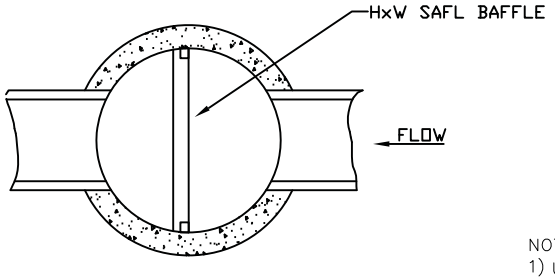
SAFL BAFFLE INSTALLATION
Detail



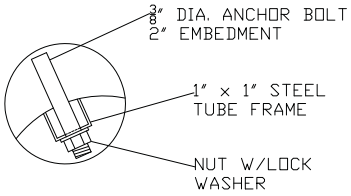
WIDTH ADJUSTMENT FOR PANEL SIZES

2– 18" PANELS	32"MIN	36"MAX	4"TOTAL
2– 24" PANELS	44"MIN	48"MAX	4"TOTAL
3– 18" PANELS	46"MIN	54"MAX	8"TOTAL
3– 24" PANELS	64"MIN	72"MAX	8"TOTAL

SAFL BAFFLE PANEL
Detail



SAFL BAFFLE INSTALLATION
Plan



SAFL BAFFLE ATTACHMENT BOLT
Detail

NOTES:

1) UPSTREAM TECHNOLOGIES INC. IS THE EXCLUSIVE LICENSEE OF THE SAFL BAFFLE

2) CONTRACTOR MUST VERIFY LOCATION OF CASTING AND STEPS PRIOR TO INSTALLATION OF STRUCTURE.

3) CONTRACTOR STRUCTURES GREATER THAN 72" REQUIRE SECOND CASTING FOR MAINTENANCE

4) THIS GENERIC DETAIL DOES NOT ENCOMPASS THE SIZING, FIT, AND APPLICABILITY OF THE SAFL BAFFLE FOR THIS SPECIFIC PROJECT. IT IS THE ULTIMATE RESPONSIBILITY OF THE DESIGN ENGINEER TO ASSURE THAT THE DESIGN IS IN COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS. THE SAFL BAFFLE IS PATENT PENDING TECHNOLOGY OF THE UNIVERSITY OF MINNESOTA AND UPSTREAM TECHNOLOGIES, INC. NEITHER THE UNIVERSITY OF MINNESOTA NOR UPSTREAM TECHNOLOGIES APPROVES PLANS, SIZING, OR SYSTEM DESIGNS.

THROUGH PIPE CONFIGURATION

SAFL BAFFLE STANDARD DETAIL
UPSTREAM TECHNOLOGIES
NEW BRIGHTON, MN
651-633-6921

Upstream Technologies

BALD EAGLE LAKE OUTFALL IMPROVEMENTS
WHITE BEAR TOWNSHIP
ENGINEER'S PRELIMINARY ESTIMATE OF COST

STORM SEWER IMPROVEMENTS

2	EA	STRUCTURE & SAFL BAFFLE	$	25,000
4	EA	CASTING	$	3,600
32	LF	REMOVE & DISPOSE OF EXISTING PIPE	$	3,520
2	EA	REMOVE EXISTING FLARED END SECTION	$	2,000
2	EA	INSTALL FLARED END SECTION	$	5,500
2	LS	OUTFALL STABILIZATION	$	4,350
30	CY	DITCH EXCAVATION / MATERIAL REMOVAL	$	450
2	LS	SITE RESTORATION	$	7,500
2	EA	MOBILIZATION	$	5,000
CONSTRUCTION COST			$	56,920
+10% CONTINGENCIES			$	5,692
SUBTOTAL WITH CONTINGENCIES			$	62,612
+20% ENGINEERING, LEGAL, FISCAL, AND ADMINISTRATION			$	11,384
SUBTOTAL WITH +20% ENGINEERING, LEGAL, FISCAL, AND ADMINISTRATION			$	73,996

TOTAL ESTIMATED PROJECT COST	**$**	**74,000**
RCWD COST-SHARE FUNDS REQUESTED	**$**	**37,000**

The estimated costs are according to average prices received on similar projects in other areas. The actual costs for this project will be determined through a bidding process and can vary with market conditions at the time of the bid.

Memorandum

To: Kyle Axtell
Rice Creek Watershed District

From: Garrett Monson, P.E., Greg Bowles, P.E.

Through: Chris Otterness, P.E.

Subject: White Bear Township – 2018 Urban Stormwater Cost-Share Program Application for Outfall Improvements to Bald Eagle Lake

Date: January 25, 2018

Project: File 5555-061

By task order 2017-023 dated December 1, 2017, HEI is providing the Rice Creek Watershed District (District) a technical review for the 2018 Urban Stormwater Remediation Cost Share grant applications. The review includes not only evaluating consistency with the goals of the Urban Stormwater Remediation Program, but the technical merits and feasibility of the proposed project and cost for reducing runoff volumes and loads. Based upon our review of the application by the White Bear Township, we offer the following comments for your use:

- The applicant is proposing to construct two SAFL Baffle BMPs and stabilize the shoreline at two outfalls into Bald Eagle Lake, which is a Tier I lake.
- This project does not include volume reduction, which is the highest priority BMP category for the District. The applicant is proposing a SAFL Baffles mounted in sump manholes. These are BMPs that are typically recommended as pre-treatment by the District, but they are providing treatment in a previous untreated area. The City will maintain the BMPs.
- The applicant estimated the BMPs would remove 3.7 lbs. of TP annually and 3,380 lbs. of TSS annually.
- Based on the nutrient removal estimates provided by the applicant, the average annual cost is approximately $661 per pound of TP and $1 per pound of TSS, based on a 30-year capital life of the BMP.
- The effectiveness of the project would be determined by the sediment removed during maintenance of the BMPs.
- The project has moderate educational opportunity. The applicant is proposing signage near the BMP and publishing information on the Township website.

Please call me at 763-493-4522 if I may be of further assistance with regard to this matter.

4:10 Update on Hansen Park Project.

MEMORANDUM
Rice Creek Watershed District

Date: February 7, 2018
To: RCWD Board of Managers
From: Kyle Axtell, RCWD Water Resource Specialist
Subject: Hansen Park Comprehensive Water Management Project
Construction Progress & Change Order No. 5 Update

Construction Progress

Staff is very excited to report that all pond dredging and mass grading activities at Hansen Park are complete. The stockpile area has been temporarily overfilled by two vertical feet to accommodate anticipated shrinkage that will occur as the material settles through the spring and summer. This is consistent with the practice employed last year. Rachel Contracting still needs to visit the site in late summer or early fall 2018 and regrade the area to achieve final plan grades.

The western trail has been raised with Class V gravel to plan grades and will not be paved until late 2018, when the final site grading occurs. The south footbridge and trail approaches have been raised consistent with previous discussions to eliminate flooding during the 2-year and 10-year flood events. We anticipate that the entire park will be reopened to pedestrian traffic in the spring of 2018 after snow melts and the site is observed to be fully stabilized. Vegetation management will continue through 2018 under this contract. Water levels in the pond will be returned to normal and the iron-enhanced sand filter will begin operation around August or September 2018.

For now, the contractor has been working to remove equipment and other items from the project site. They will return in April for spring cleanup and stabilization efforts and to address punch-list items compiled by staff and the project engineer. The project will be completed this fall.

Change Order No. 5 Update

At its December 13, 2017 regular meeting, the Board approved increasing the project's construction contingency from 7.5% to 12.5% due to anticipated costs being contemplated in Change Order No. 5. This Change Order has been processed now that final dredge quantities are known and staff is thrilled to report that the budgetary concerns we discussed at that time did not come to fruition. Leaving the pond dewatered through 2018 had extremely beneficial effects on both the weight and quantity of the dredge material onsite, likely due to dewatering, settlement and decomposition that occurred during the last year.

The total cost of Change Order No. 5 was only $13,620.92 (as opposed to our original estimate of $149,000), bringing the total cumulative amount of all change orders to $111,497.87, well within the Board's original 7.5% approval ($207,635) in Resolution 2016-14.

Attachments: Executed Hansen Park Change Order #5