

Minnehaha Creek Watershed District

REQUEST FOR BOARD ACTION

MEETING DATE: December 8, 2016

ITEM TYPE: Action Consent Discussion

TITLE: Authorization of Cost Share Funding – 2016 Fall Non-Homeowner Projects

RESOLUTION NUMBER: 16-083

PREPARED BY: Telly Mamayek

E-MAIL: tmamayek@minnehahacreek.org

TELEPHONE: (952) 641-4508

REVIEWED BY: Administrator Counsel Program Mgr: Telly Mamayek
 Board Committee Engineer Other

WORKSHOP ACTION:

<input checked="" type="checkbox"/> Advance to Board mtg. Consent Agenda	<input type="checkbox"/> Advance to Board mtg. Consent Agenda with changes
<input type="checkbox"/> Advance to Board mtg. for more discussion	<input type="checkbox"/> Refer to a future workshop (date): _____
<input type="checkbox"/> Return to staff for additional work	<input type="checkbox"/> Refer to taskforce or committee (date): _____
<input type="checkbox"/> No further action requested.	<input type="checkbox"/> Advance to CAC mtg. for recommendation

PURPOSE or ACTION REQUESTED:

- 1) After the required public hearing and in consideration of any comments received, order cost-share project funding for projects in Edina and Mound;
- 2) Authorize the administrator to execute and sign a cost-share funding and maintenance agreement for each of the six projects listed in the attached document, not to exceed \$191,566, contingent on staff approval of a project design that is mutually agreed upon by the grant recipients and District staff and signage requirements.

PROJECT/PROGRAM LOCATION:

District Wide

PROJECT TIMELINE:

Spring/Summer 2017

PROJECT/PROGRAM COST:

Fund name and number:	Cost Share Grant Program (4005)
Current grant budget:	\$436,597.59
Amount approved in 2016 to date:	\$163,402.41
Requested amount of funding:	Funding of the approved portion of documented costs of each of the six projects listed in the attached document, not to exceed a total of \$191,566.

SUMMARY:

The new cost share grant application schedule the Board approved in January provides a spring and a fall deadline for non-homeowner projects and a June deadline for homeowner projects. This allows us to compare like-projects to each other, and prioritize funding on the projects that have the greatest value. By the fall non-homeowner deadline on September 26, 2016, staff received 7 cost share applications. One of the applicants withdrew his application, leaving three community engagement projects and three green infrastructure projects at a total project cost of \$353,534.

The six applications underwent a thorough review process before advancing to the CAC. They were reviewed by Education-Communications staff, an inter-departmental team including planning, project and land management, permitting and education staff, the District engineer and a CAC subcommittee. On November 9, 2016, the CAC recommended funding for six of the projects as presented, and changed the recommendation on 1 community engagement project and 1 green infrastructure project.

In the attached memo, you will find a summary of each of the proposals and their respective funding recommendations. An evaluation scoresheet and plan for each project are also attached.

Two projects were applied for by cities within the watershed. In accordance with state law and adopted Board policy (Resolution 13-023), a public hearing is required for certain cost share projects involving capital construction. The Edina and Mound projects described in the memo involve the construction elements of a project that require each municipality to undertake long term maintenance responsibilities, which triggers the public hearing requirement. The funding recommendation for the Mound project exceeds \$50,000, which also triggers the public hearing requirement. Prior to the consideration of funding these two projects (along with the other four), there will be a public hearing and presentation for the two city projects, per the Board adopted public hearing procedure and Minnesota Statutes section 103B.251.

EDUCATION VALUE:

Staff sees the installation of stormwater best management practices as a powerful avenue to provide citizen engagement and advocacy opportunities where cities and/or its citizens become participants in and advocates for stormwater management and clean water. Staff also sees them as a way to educate the public on actions that can be taken on an individual citizen scale to improve stormwater management, enhance natural resources and green infrastructure, expand the knowledge base of water resources management, and provide educational opportunities through demonstrative projects within the watershed. Through partnering on these projects, we are gaining stormwater management and investment from public and private property owners on land that we otherwise would not be able to implement projects on alone.

The following is a summary of each project's education and outreach plans.

City of Edina:

- The vegetated swale will be a visible demonstration of stormwater management
- Local residents participated in the process of selecting the plants
- Residents will be empowered to keep their own runoff on their property and infiltrate it through stormwater BMP's

City of Mound:

- A path providing access to the BMP and restored shoreline
- Educational signage next to the BMP and shoreline
- Educational materials at city hall

Big Island Inc:

- High visibility area with a lot of boat traffic
- Signage will be installed that's visible to passing boats
- Presentations on a nearby dock
- Presentations to local civic and government groups
- Media coverage by local newspapers and TV stations will be sought

Greensboro Condos:

- Two Master Water Stewards are leading the project as their capstone and are spearheading the outreach
- A local school has developed curriculum to educate students on stormwater runoff (funded by a Cynthia Krieg grant)
- Media will be invited to a planting day where the school students will participate
- An article will be placed in the DNR Spotlight newsletter
- Social media campaign, YouTube videos, Master Water Steward website updates
- Educational signage will be installed on the property
- BMP will be a visible demonstration in a high traffic area

Standish Ericsson Alley Retrofit:

- Educational signage
- Local school groups will be monitoring the progress of the pavers and learning about stormwater management
- A dedicated page on the Metro Blooms website will track the project's progress
- Results will be shared on social media and in newsletters
- Results will be reported to the City of Minneapolis in an effort to encourage policy change

Uptown Housing Cooperative:

- Two open houses with neighborhood association
- Joint event with First Universalist Church
- Class at Shir Tikvah Synagogue
- Outreach to other multi-housing associations
- Two Master Water Stewards who live in the building will do outreach
- The two raingardens by the front entrance and the corner facing the street will be visible demonstrations of stormwater management
- Signage

For all projects, permanent educational signage would be installed near the project sites on the grantee's property indicating the contribution of funds from the District and also directing people to the MCWD website. District staff will utilize the projects in outreach to highlight the work the District is helping fund in the community.

WATER QUALITY IMPROVEMENT:

The District Engineer has analyzed all of the proposed projects to identify the water quality improvement of each of these projects.

The following table shows the pollutant reductions we can see from each of the projects:

Total number of projects approved: 6
 Total number of BMPs and shorelines installed: up to 10
 Total cost for construction of these BMPs: \$353,434
 Total MCWD cost share funding contribution: \$191,566
 Annual Volume reduction: 46,940 cf
 Annual Total Suspended Solids reduction: 2,175 lbs
 Annual Phosphorus reduction: 9.3 lbs

City of Edina	NC	135	0.4	\$31,838	\$15,919.00
City of Mound	NC	1,326	6.1	\$115,560	\$80,235.00
Big Island Inc	0	NC	NC	\$46,092	\$23,900.00
Greensboro Condominiums	NC	55	0.2	\$33,224	\$24,918.00
Standish Ericsson Alley Retrofit	46,125	391	0.9	\$98,150	\$40,000.00
Uptown Housing Cooperative	815	268	1.7	\$28,670	\$6,594.00

Totals: 46,940 2,175 9.3 \$353,534.00 **\$191,566.00**

*NC = No calculations were provided

STAFF RECOMMENDATION

The individual applicants listed in the attached document have applied for funding for their projects from the Cost Share grant fund, contingent on a signed grant and maintenance agreement that includes a landscape design plan that is mutually agreed upon by the Cost Share recipients and District staff and provision for signage.

Staff recommends funding the projects listed in the attached document at the above amount.

ATTACHMENTS:

1. Memo-12-5-16-Cost Share Fall 2016
2. Project Plans and Evaluations-Cost Share Fall 2016

RESOLUTION

RESOLUTION NUMBER: 16-083

TITLE: Authorization of Cost Share Funding – 2016 Fall Non-Homeowner Projects

WHEREAS, the Cost Share Program was established by the MCWD to provide funding to property owners to design and install best management practices that will provide educational value as well as reduce the volume and increase the quality of stormwater flowing offsite; and

WHEREAS, each of the fall 2016 applicants has submitted a proposal for cost-share funding for the construction of stormwater best management practices,

WHEREAS, the MCWD 2016 budget includes funds for the Cost Share Program which has \$436,597.59 currently available; and

WHEREAS, the proposals were reviewed by the Citizens Advisory Committee (CAC) on November 9, 2016, and the CAC has recommended approving the proposals and funding in the amounts requested; and

WHEREAS, in accordance with Minnesota Statutes section 103B.251 and MCWD Board Resolution 13-023, the District must conduct a public hearing for cost-share projects with construction elements that require a municipality to undertake long term maintenance and the City of Edina and City of Mound must undertake long-term maintenance for their respective projects as described in the materials attached to the resolution; and

WHEREAS, in accordance with Minnesota Statutes section 103B.251 and MCWD Board Resolution 13-023, the District must conduct a public hearing for cost-share projects that exceed \$50,000 in funding and the City of Mound's funding recommendation is \$80,235; and

WHEREAS, in accordance with Minnesota Statutes §103B.251, subdivision 3, the MCWD held a noticed public hearing on approval of funding for the Edina and Mound projects on December 8, 2016, at which time all interested parties had the opportunity to speak for and against the Project; and

WHEREAS, no comments from the public were offered;

WHEREAS, the Board of Managers finds that each of the Edina and Mound projects will be conducive to public health and promote the general welfare, and is in compliance with Minnesota Statutes §§103B.205 to 103B.255 and the MCWD's Comprehensive Water Resources Management Plan adopted pursuant to §103B.231;

WHEREAS, a summary of approved 2016 Fall Non-Homeowner Cost Share projects and funding amounts was included in the December 8, 2016 Board of Managers meeting packet information; and

WHEREAS, MCWD staff has reviewed the proposals and the CAC's comments and recommendations, and finds the proposals to be consistent with the goals of the Cost Share Program and recommends funding the approved portion of the documented costs of each of the six projects listed in the attached document, not to exceed \$191,566, contingent on a signed grant and maintenance

agreement that includes a project design plan that is mutually agreed upon by the applicant and District staff in each case and signage requirements, and

NOW, THEREFORE, BE IT RESOLVED that the Minnehaha Creek Watershed District Board of Managers that pursuant to Minnesota Statutes section 103B.251 and the MCWD plan, the MCWD Board of Managers orders the Edina cost-share project with a total estimated cost-share contribution from MCWD of \$15,919 and the Mound cost-share project with a total estimated cost-share contribution from the MCWD of \$80,235, and;

NOW, THEREFORE, BE IT FURTHER RESOLVED, that the MCWD Board of Managers authorizes the administrator to sign, on advice and consent of counsel, a cost-share funding and maintenance agreement with each applicant for documented costs not exceed in each case as follows:

City of Edina	\$15,919
City of Mound	\$80,235
Big Island Inc.	\$23,900
Greensboro Condominiums	\$24,918
Standish Ericsson Alley Retrofit	\$40,000
Uptown Housing Cooperative	\$ 6,594

contingent on staff approval of a final project design and signage.

Resolution Number 16-083 was moved by Manager _____, seconded by Manager _____.
Motion to adopt the resolution ___ ayes, ___ nays, ___ abstentions. Date: _____.

Secretary Date: _____



MEMORANDUM

DATE: December 5, 2016

TO: MCWD Board of Managers

FROM: Telly Mamayek, Director of Communications and Education

RE: Authorization of Cost Share Funding – 2016 Fall Non-Homeowner Projects

The MCWD administers a Cost Share program to provide incentive for interested parties to construct projects that will improve water quality. Part of the process in approving projects to receive funding is to have the applications reviewed by the Citizens Advisory Committee (CAC).

BUDGET UPDATE

Cost Share 2016 Budget:	\$600,000
Amount Approved to date in 2016:	\$163,402.41
December Cost Share Requested Amount:	\$191,566

COST SHARE APPLICATIONS

The new cost share grant application schedule the Board approved in January provides a spring and a fall deadline for non-homeowner projects and a June deadline for homeowner projects. This allows us to compare like-projects to each other, and prioritize funding on the projects that have the greatest value. We received 7 cost share applications by the fall deadline, however, 1 applicant withdrew his application leaving 3 community engagement projects and 3 green infrastructure projects requesting a total of \$261,824 in funding.

The newly adopted program schedule includes a thorough review process. That process was amended, somewhat, for the fall funding round by the departure of the Cost Share Grant Administrator in September. The review process for the fall round included an evaluation of each project by staff and the District engineer and by a CAC/staff subcommittee (made of planning, project and land management, permitting and education/communications staff) that provided recommendations to the CAC. The CAC reviewed and recommended funding 6 projects, changing the staff recommendation on three of them (Big Island, Inc., Greensboro Condominiums, Standish Ericsson Alley Retrofit).

In this memo, you will find a summary of each of the proposals received to be considered for Board funding approval, and the current funding recommendation. You will also find attached the packet materials with each project evaluation scoresheet and the main project plans.

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Green Infrastructure Projects

Project #1 – West 54th Street reconstruction – City of Edina

The City of Edina proposes to pave a gravel road and filter street runoff into Minnehaha Creek with a vegetated swale that serves as a demonstration to residents. The project proposes to treat approximately 14,375 sf of impervious surface through a new filtration swale measuring 8 feet wide by 260 feet long, removing 0.4 pounds of phosphorus per year. The filtration swale will treat runoff from nearby houses and the newly paved road and will help with drainage and flooding concerns. The project will also consist of converting gravel roads to paved roads in hopes to reduce TSS and sediment deposits to the adjacent section of Minnehaha Creek.

The project location complements an Arden Park project location where the District has been actively partnering with the City on stormwater management. The swale will provide protection to a high value resource (Minnehaha Creek) and is located downstream of the Minnehaha Creek focal geography.

No specific outreach is planned with this project. The applicant states that the project serves as a demonstration of an attractive BMP that can beautify the landscape. It is adjacent to Minnehaha Creek and is visible from the walking/bike paths across the creek from the project.

The total project cost is \$31,838. CAC endorses Staff and CAC subcommittee 50% funding recommendation, not to exceed \$15,919.

Project #2 – Carlson Park – City of Mound

The City of Mound is proposing a large stormwater diversion project at Carlson Park. The project proposes to treat approximately 141,600 sf of impervious surface from an 11.6-acre drainage area and remove 6.1 lbs of phosphorus per year. The project will take an existing outfall and re-route it to a series of bio-retention areas and an iron-enhanced sand filter before discharging the treated runoff to Seton Lake in Lake Minnetonka. The project will also include tree and shrub planting with approximately 185ft of shoreline restoration. This project provides treatment for a high value resource – Lake Minnetonka – and serves as a demonstration of a restored shoreline to lakeshore property owners.

The project proposes mostly passive outreach consisting of signage and a trail to provide access in a high visibility area in a park with public boat slips. The City also plans to have brochures and information at its City Hall.

The total project cost minus the contingency is \$106,980. CAC endorses Staff and CAC Subcommittee 75% funding recommendation of the total project cost (\$115,560) minus the contingency (\$8,580), not to exceed \$80,235.

Project #3 – Big Island, Inc. – 520 Big Island, Orono

The 302A business corporation, Big Island, Inc., is proposing to continue adjacent Big Island restoration efforts completed by MCWD. The latest project proposes 140ft of shoreline stabilization. The stabilization will consist of boulder toe, Class III Riprap, herbaceous plug plantings, shrubs, and tree plantings. The stabilization will reduce erosion and will benefit water quality by reducing TSS and

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phosphorus loads to Lake Minnetonka. This project complements other MCWD projects on Big Island, and is a demonstration of a high value BMP that protects a high value resource – Lake Minnetonka. This project is in a high visibility area with a lot of boat traffic; they plan to install signage and seek media coverage. Presentations on a nearby dock are also planned in addition to presentations to local civic and government groups.

The total project cost is \$46,092. The Staff and CAC Subcommittee recommended 50% funding of the non-riprap portion of the project, not to exceed \$10,546. The CAC recommends 50 % funding of the total project not to exceed \$23,900.

Community Engagement Projects

Project #4 – Greensboro Condominiums – Louisiana & Franklin Ave., St. Louis Park

The non-profit, condo association of Greensboro Condominiums in St. Louis Park is proposing the construction of a cistern and a raingarden to treat approximately 8,500 square feet of roof and sidewalk runoff. The raingarden will capture runoff from the sidewalk and bus stop at the intersection of Louisiana and Franklin, while the cistern will collect runoff from the building roofs for re-use in irrigation. The project will remove about 0.2 lbs of phosphorus per year.

Two Master Water Stewards, who are using this project as their capstone project, have designed the stormwater BMPs to be located on a highly visible corner to expand the project’s outreach. Partnerships have been identified, and a 5th grade class has already visited the site, and will continue through the construction process to learn from this demonstration to implement something similar at their school. There is educational signage proposed at the most visible corner of the site, near the bus stop and walking path. Other outreach techniques are outlined in the materials, including a direct partnership with the DNR. Additionally, the site drains to Minnehaha Creek, which is a high value resource which is an impaired water body.

The total project cost is \$33,224. The Staff and CAC Subcommittee recommended 50% funding, not to exceed \$16,336.56. The CAC recommends 75% funding, not to exceed \$24,918.

Project #5 – Standish Ericsson Alley Retrofit, 3800-block 21st Ave. S., Minneapolis

A group of five homeowners are working with Metro Blooms to implement pervious pavement and an associated monitoring system in a privately-owned Minneapolis alleyway (spanning 10 residential properties) located in the Hiawatha subwatershed. The pervious alleyway will be one of the first in the SENA neighborhood. This project aims to reduce flooding by retro-fitting an alleyway with permeable pavement and a stormwater monitoring system. The monitoring plan was developed by the U of M’s St. Anthony Falls Laboratory and partially funded by Hennepin County. The project, which will capture runoff from 19,143 square feet of impervious surface and remove 0.9 lbs of phosphorus per year, area drains to Lake Hiawatha, which is an impaired waterbody. It complements other District initiatives in the area including the Nokomis Blooming Alleys, work with the newly established Friends of Lake Hiawatha, and the District’s work in the Minnehaha Creek focal geography.

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For education and outreach, the plan highlights that a sign will be installed on one of the properties closest to the street with the target audience – pedestrian traffic. Monitoring results will be shared with the City of Minneapolis. They will also be shared with partners and on the metroblooms.org website and social media, and newsletter. Other education and outreach activities include tours to interested groups and outreach to local school groups.

The total project cost is \$98,150. The Staff and CAC Subcommittee recommended 75% funding of the requested amount (\$40,000), not to exceed \$30,000. The CAC recommends 41% funding of the total project cost, not to exceed \$40,000.

Project #6 – Uptown Housing Cooperative – 3540 James Ave. S., Minneapolis

The non-profit, condo association of the Uptown Housing Cooperative in Minneapolis is proposing the construction of six raingardens to treat approximately 17,200 square feet of roof runoff. The project location is directly uphill from Lake Calhoun and in the same neighborhood as St. Mary’s Greek Orthodox Church, where another District-funded BMPs are located.

For education and outreach, the association is planning two open houses with the neighborhood association, a joint event with First Universalist church, a class at Shir Tikvah Synagogue, outreach to other multi-housing associations, and signage. Two Master Water Stewards will assist with the outreach.

The total project cost is \$28,670. The CAC endorses the Staff and CAC subcommittee 50% funding recommendation for 3 of the 6 raingardens. Recommended funding is roughly 23% of the total project cost, not to exceed \$6,594.

OVERVIEW

The following table is an overview of the projects, the requested funding, and the staff suggested funding.

Project Name	Evaluation Score (/100)	Project Cost	Recommended Funding	Suggested Funding	Project Type
1. City of Edina	74	\$ 31,838	\$ 15,919	50%	Green Infrastructure
2. City of Mound	81	\$ 115,560	\$ 80,235	75% (69%)	
3. Big Island Inc.	78	\$ 46,092	\$ 23,900	50%	
4. Greensboro Condos	82	\$ 33,224	\$ 24,918	75%	Community Engagement
5. Standish Ericsson Alley	82	\$ 98,150	\$ 40,000	75% (41%)	
6. Uptown Housing Coop	71	\$ 28,670	\$ 6,594	50% (23%)	
<i>Totals</i>		\$ 353,534	\$191,566	53%	

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**Cost Share Grant Evaluation Form
Green Infrastructure Grant**

Name of Reviewer: Telly Mamayek and Erik Megow (Wenck)
Date Reviewed: 10-24-16
CAC-Staff Subcommittee Review: 11-1-16

Applicant: City of Edina

Project: West 54th Street reconstruction, Edina

Total Project Budget: \$31,838.48

Requested Funding: 50%

Green Infrastructure Grant: project must result in greater water quality/natural resource improvements.

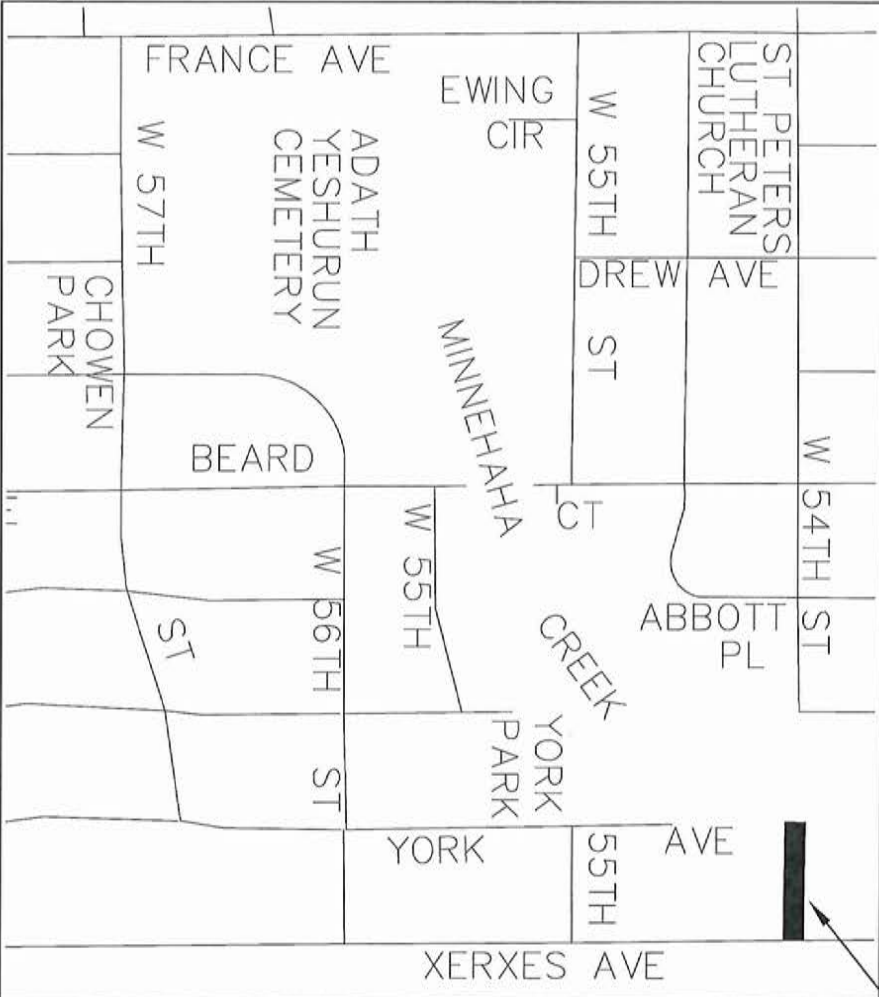
Organization Type: Local government unit		
Are the Goals of Project Clearly Outlined? Yes. To pave a gravel road and filter street runoff into Minnehaha Creek with a vegetated swale that serves as a demonstration to residents.		
Past History: Has the applicant applied before? Yes, but not for this specific project. Received District cost-share funding in the spring of 2016 for an unrelated projects.		
<i>Project Design (70pts)</i>		
Notes: This project proposes to treat approximately 14,375 sf of impervious surface through a new filtration swale measuring 8 feet wide by 260 feet long. The filtration swale will treat houses and newly paved road and will help with drainage and flooding concerns. The project will also consist of converting gravel roads to paved roads in hopes to reduce TSS and sediment deposits to the adjacent section of Minnehaha Creek.	33/45	Water Resource Improvement to MCWD
	3/5	Innovative Design
	5/5	Budget Detail
	13/15	Maintenance Plan
Project Design Total:		54/70
<i>Education & Outreach (15 pts)</i>		
Notes: No specific outreach is planned with this project. It simply serves as a demonstration of an attractive BMP that can beautify the landscape. It is adjacent to Minnehaha Creek and is visible from the walking/bike paths across the creek from the project.	0/10	Outreach Techniques
	5/5	Visibility of Demonstration
Education and Outreach Total:		5/15
<i>Water Resource Prioritization (15 pts)</i>		
Notes: Complements Arden Park project where the District has been actively partnering with the city on stormwater management, protects a high value resource (Minnehaha Creek) by capturing and filtering street runoff, is downstream of the Minnehaha Creek focal geography.	15/15	Alignment with District Priorities
Water Resource Prioritization Total:		15 /15
Total:		74/100



CITY OF EDINA, MINNESOTA

CHOWEN PARK D NEIGHBORHOOD ROADWAY IMPROVEMENTS

CONSTRUCTION PLAN FOR: ROADWAY AND UTILITY RECONSTRUCTION
LOCATED ON: WEST 54TH STREET



PROJECT
LOCATION

GOVERNING SPECIFICATIONS

THE 2016 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADWAY CONSTRUCTION SHALL BE APPLIED TO THIS PROJECT. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MANUTOD) AND PART VI, TRAFFIC MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS QUALITY LEVEL B ACCORDING TO THE GUIDELINES FOR THE QUALITY STANDARD SPECIFICATIONS FOR THE COLLECTION AND COLLECTION OF EXISTING SUBSURFACE UTILITY DATA.



PROJECT LOCATION
COUNTY: HENNEPIN



INDEX	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	EXISTING CONDITIONS
3	PROPOSED IMPROVEMENTS
4	ORANGE AREAS

THIS PLAN CONTAINS 4 SHEETS

LOCAL AGENCY SIGNATURES

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

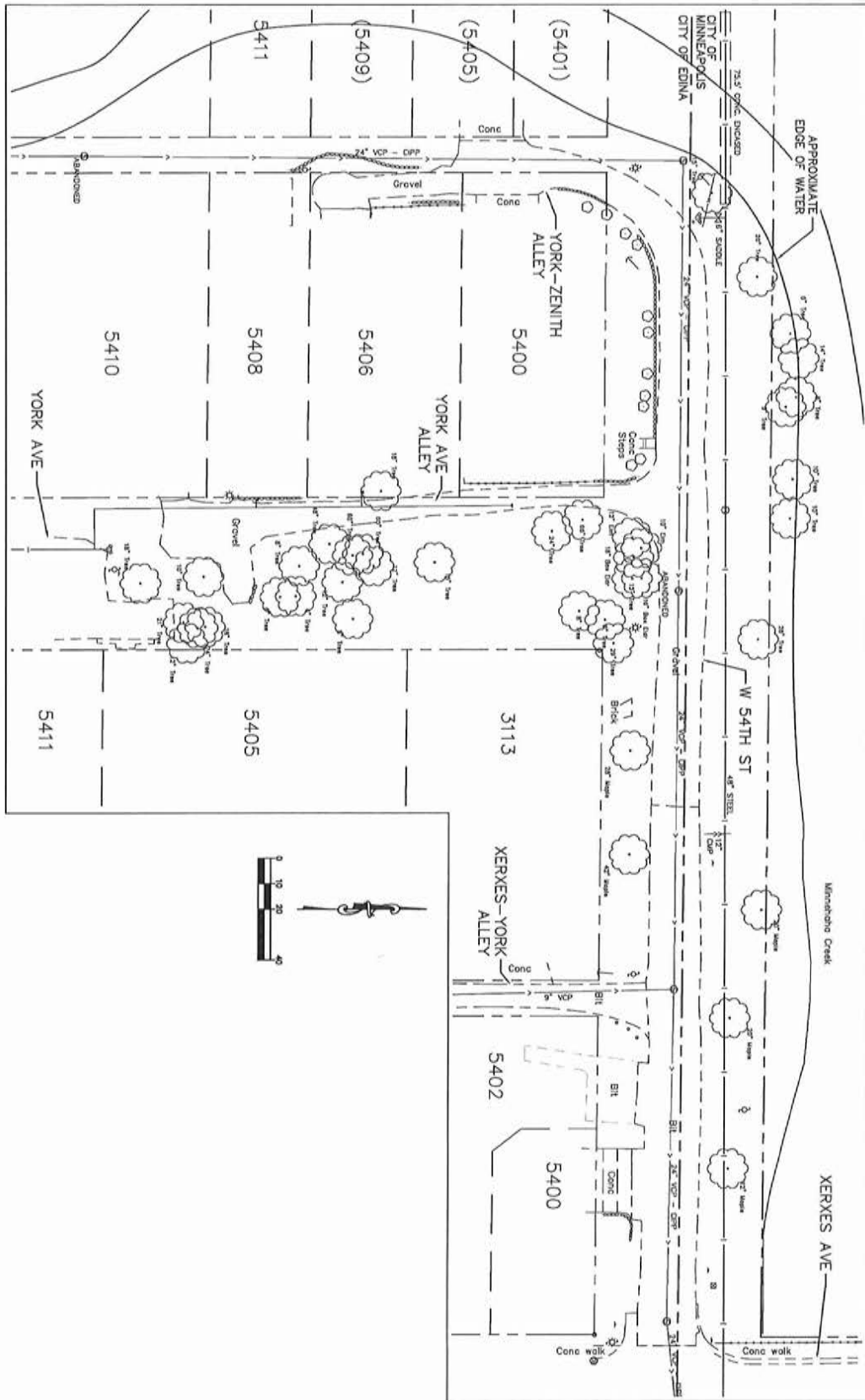
DATE: _____ LICENSE NO. _____

SIGNATURE: _____ PRINTED NAME: _____

APPROVED: CITY ENGINEER DATE: _____

EDINA IMP. NO. BA-439

EDINA CONTRACT NO. ENG 16-XX



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

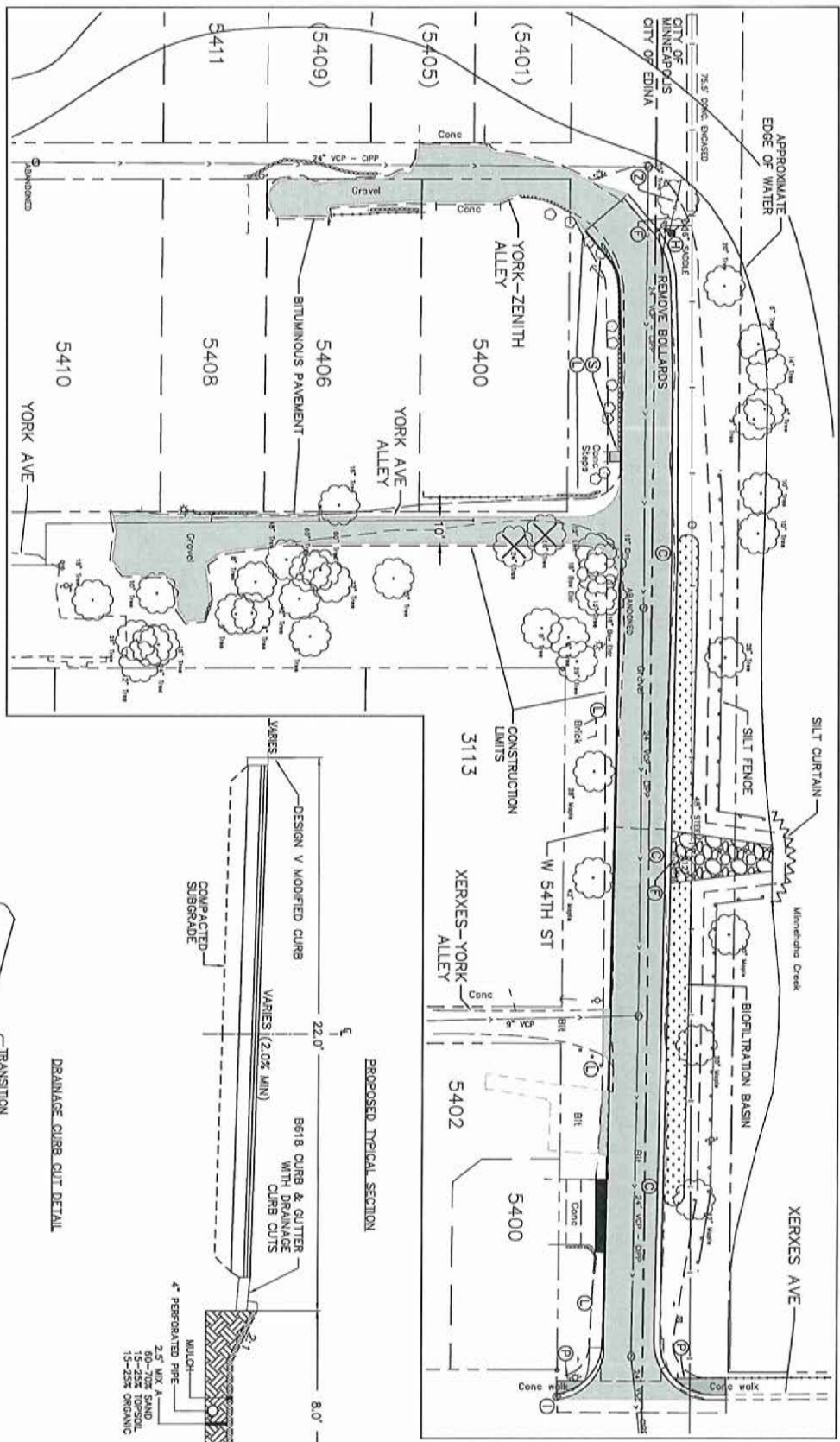
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 APPROVED BY: [blank]
 CENTER LINE: W 54TH ST
 SHEET: 2 OF 4

CHOWEN PARK D NEIGHBORHOOD ROADWAY IMPROVEMENTS

CITY OF EDINA
 7450 METRO BOULEVARD
 EDINA, MN 55439-3037
 TEL: 952-826-0371
 FAX: 952-826-0392

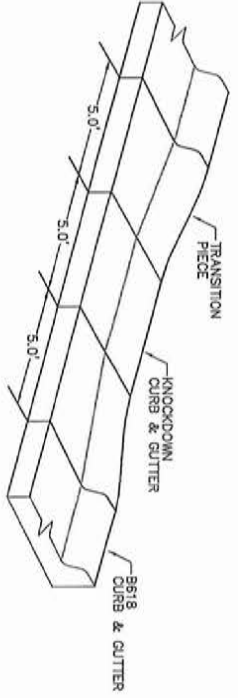
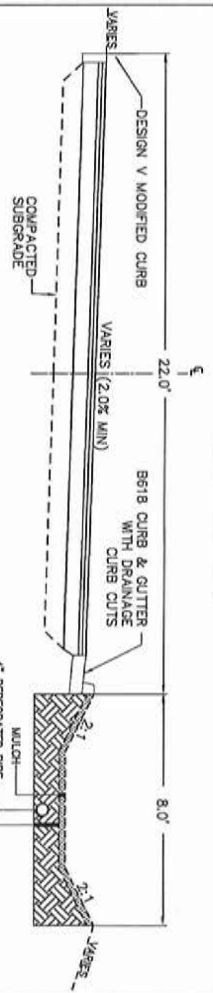
WEST 54TH STREET EXISTING CONDITIONS

NO.	DATE	BY	REMARKS



- ② DRAINAGE CURB CUT
- ③ REMOVE STORM SEWER PIPE
- ④ RELOCATE HYDRANT (BY OTHERS)
- ① INLET PROTECTION
- ① LANDSCAPE MATERIALS (SPECIAL)
- ② PEDESTRIAN CURB RAMP WITH TRUNCATED DOWES
- ③ SALVAGE AND INSTALL STONE RETAINING WALL
- ⑦ ABANDON STORM SEWER PIPE

LIMITS OF CONSTRUCTION SHALL BE DETERMINED AND MARKED IN THE FIELD BY THE ENGINEER.
 REMOVE/RECONSTRUCT DRIVEWAYS, WALKS, AND STEPS NECESSARY TO MATCH PROPOSED CONSTRUCTION, UNLESS DIRECTED OTHERWISE BY THE ENGINEER.



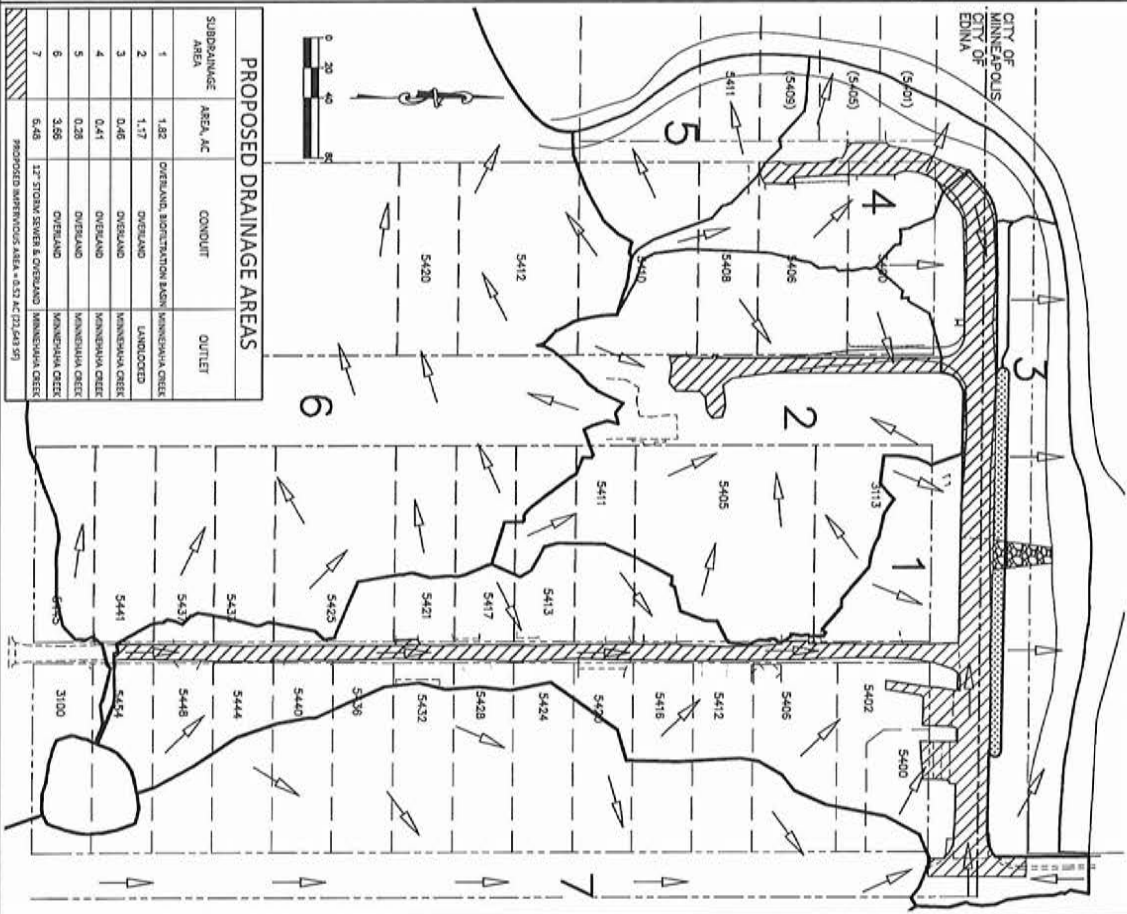
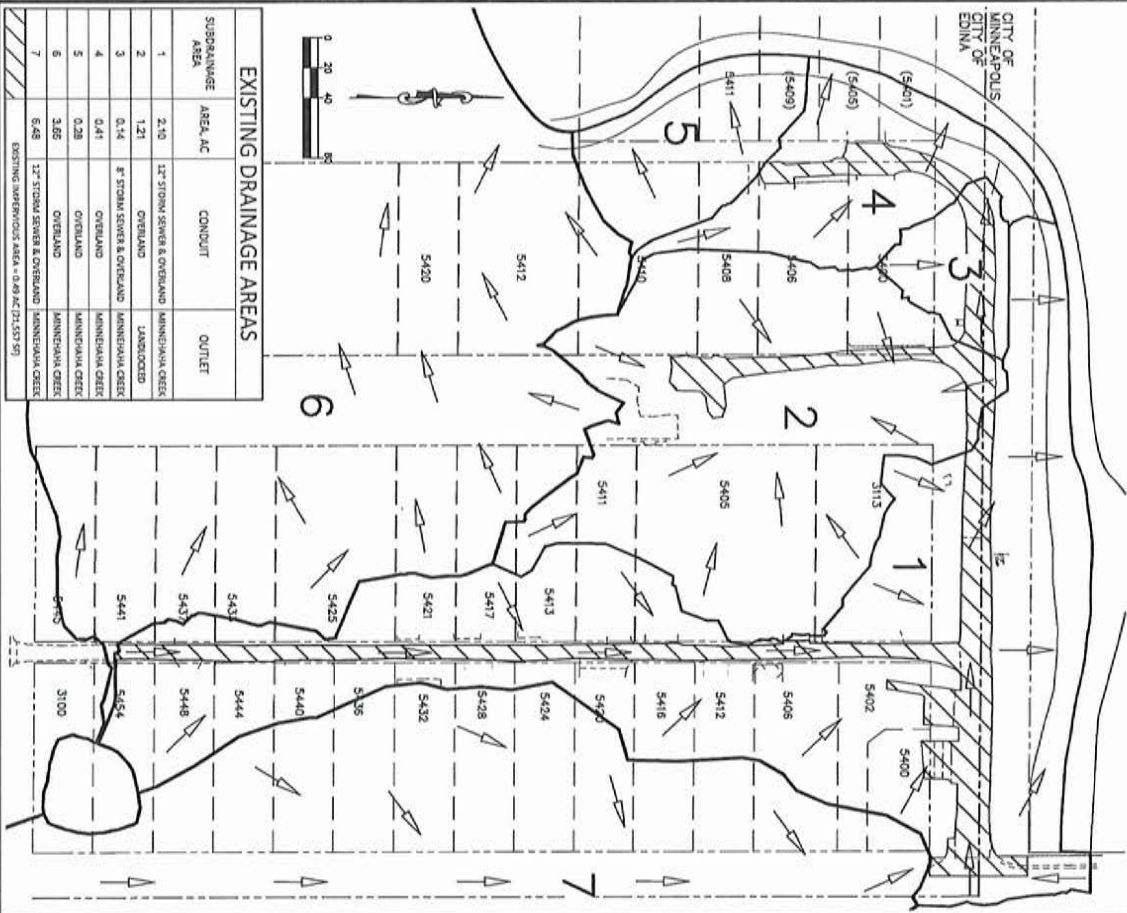
DATE: 10/14/16
 DRAWN BY: JTS
 CHECKED BY: JTS
 SCALE: 3/4"

CHOWEN PARK D NEIGHBORHOOD ROADWAY IMPROVEMENTS

CITY OF EDINA
 7450 METRO BOULEVARD
 EDINA, MN 55439-3037
 PH: 952-826-0371
 FAX: 952-826-0392

WEST 54TH STREET PROPOSED IMPROVEMENTS

NO.	DATE	BY	REMARKS



EXISTING DRAINAGE AREAS

SUBDRAINAGE AREA	AREA, AC	CONDUIT	OUTLET
1	2.10	12" STORM SEWER & OVERLAND	MINNESOTA CREEK
2	1.21	OVERLAND	LANDLOCKED
3	0.14	8" STORM SEWER & OVERLAND	MINNESOTA CREEK
4	0.41	OVERLAND	MINNESOTA CREEK
5	0.28	OVERLAND	MINNESOTA CREEK
6	3.65	OVERLAND	MINNESOTA CREEK
7	6.48	12" STORM SEWER & OVERLAND	MINNESOTA CREEK

EXISTING IMPROVED AREA = 19.49 AC (71,557 SQ FT)

PROPOSED DRAINAGE AREAS

SUBDRAINAGE AREA	AREA, AC	CONDUIT	OUTLET
1	1.82	OVERLAND, BOTTLENECK BAYON	MINNESOTA CREEK
2	1.17	OVERLAND	LANDLOCKED
3	0.46	OVERLAND	MINNESOTA CREEK
4	0.41	OVERLAND	MINNESOTA CREEK
5	0.28	OVERLAND	MINNESOTA CREEK
6	3.65	OVERLAND	MINNESOTA CREEK
7	6.48	12" STORM SEWER & OVERLAND	MINNESOTA CREEK

PROPOSED IMPROVED AREA = 0.53 AC (23,043 SQ FT)

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

DATE: 10/14/16
 CONTRACT NO: 17-22
 SHEET: 4 OF 4

CHOWEN PARK D NEIGHBORHOOD ROADWAY IMPROVEMENTS

CITY OF EDINA
 7450 METRO BOULEVARD
 EDINA, MN 55439-3037
 Ph: 952-826-0371
 Fax: 952-826-0392

WEST 54TH STREET DRAINAGE AREAS

NO. DATE BY REMARKS
 REVISIONS

**Cost Share Grant Evaluation Form
Green Infrastructure Grant**

Name of Reviewer: Telly Mamayek and Erik Megow (Wenck)
Date Reviewed: 10-24-16
CAC-Staff Subcommittee Review: 11-1-16

Applicant: City of Mound

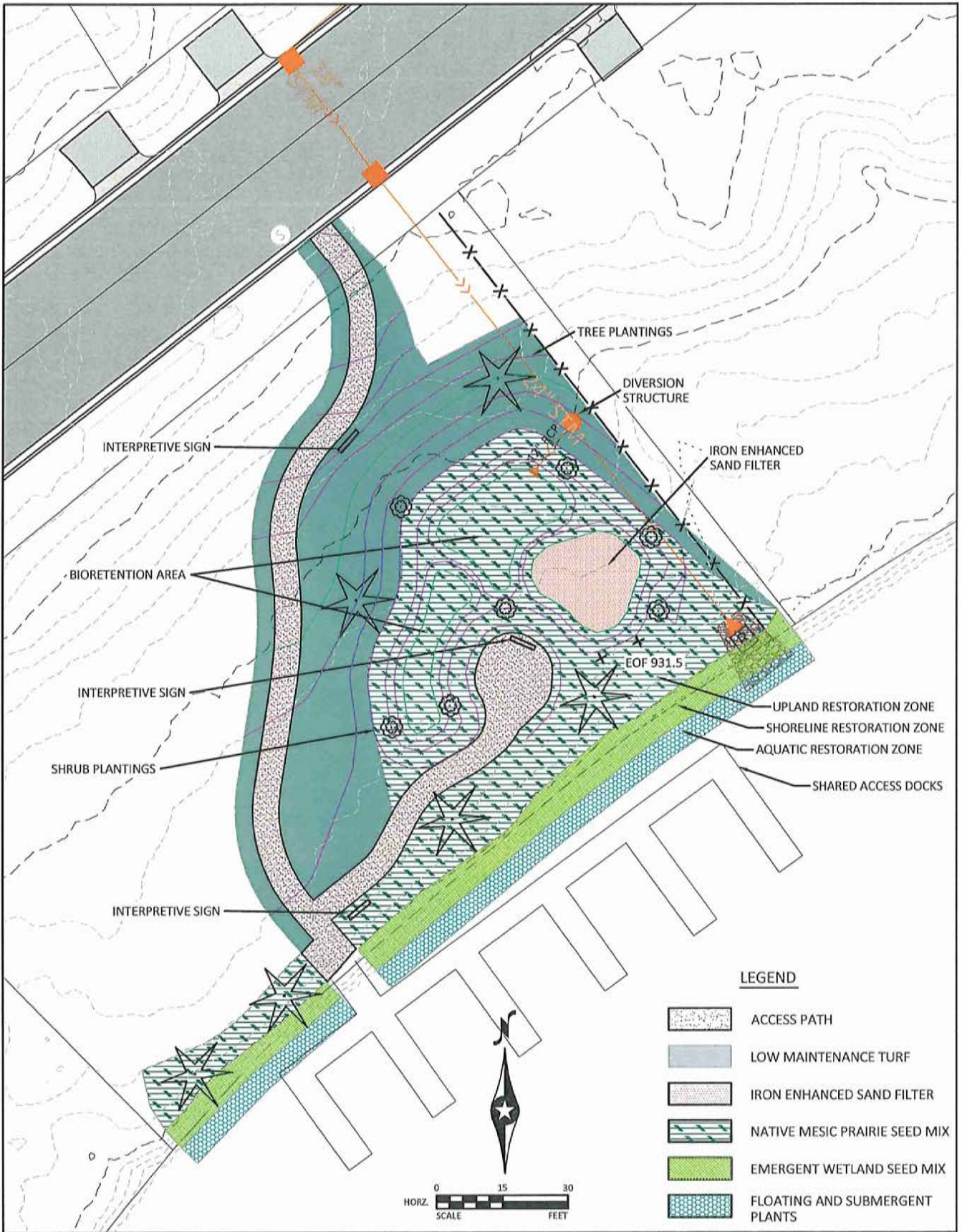
Project: Carlson Park

Total Project Budget: \$115,560

Requested Funding: \$86,670 (leveraged by city match of \$28,890)

Green Infrastructure Grant: project must result in greater water quality/natural resource improvements.

Organization Type: Local government unit		
Are the Goals of Project Clearly Outlined? Yes. Install structure to divert street runoff to a bioretention basin with iron-enhanced filter. Restore shoreline, install paths to provide access and signage to educate visitors.		
Past History: Has the applicant applied before? Yes. The city applied for another project in the spring of 2016, but held off to apply for this project in the fall.		
<i>Project Design (70pts)</i>		
Notes: The project proposes to treat approximately 141,600 sf of impervious surface from an 11.61 acre drainage area. The project will take an existing outfall and re-route it to a series of bioretention areas and iron-enhanced sand filter to Lake Minnetonka includes installing a bioretention basin and iron enhanced sand. The project will also include tree and shrub planting with approximately 185ft of shoreline restoration. The project is expected to remove 6.1 lbs of phosphorus per year.	42/45	Water Resource Improvement to MCWD
	4/5	Innovative Design
	5/5	Budget Detail
	15/15	Maintenance Plan
Project Design Total:		66 /70
<i>Education & Outreach (15 pts)</i>		
Notes: Mostly passive outreach consisting of signage and trails to provide access, but in a high visibility area in a park with a public boat slips. Also plans to have brochures in city hall.	5/10	Outreach Techniques
	5/5	Visibility of Demonstration
Education and Outreach Total:		10/15
<i>Water Resource Prioritization (15 pts)</i>		
Notes: This project filters water that drains to a high value resource – Seton Lake in Lake Minnetonka – and serves as a demonstration of a restored shoreline to lakeshore property owners.	15/15	Alignment with District Priorities
Water Resource Prioritization Total:		15/15
Total:		81/100



2638 SHADOW LANE, SUITE 200
 CHASKA, MINNESOTA 55318
 Phone: (952) 448-8838
 Email: Chaska@bolton-menk.com
 www.bolton-menk.com

CITY OF MOUND, MINNESOTA
 STORMWATER QUALITY AND SHORELINE RESTORATION
 CARLSON PARK PRELIMINARY LAYOUT
 SEPTEMBER, 2016

Cost Share Grant Evaluation Form
Green Infrastructure Grant

Name of Reviewer: Telly Mamayek and Erik Megow (Wenck)
 Date Reviewed: 10-24-16
CAC-Staff Subcommittee Review: 11-1-16

Applicant: Big Island, Inc.

Project: 520 Big Island, Orono

Total Project Budget: \$21,092 for plantings, installation and design; \$25,000 for rip rap and other material installation

Requested Funding: 50%

Green Infrastructure Grant: project must result in greater water quality/natural resource improvements.

Organization Type: 302A Business Corporation		
Are the Goals of Project Clearly Outlined? Yes. Continue shoreline restoration completed by District on other parts of the island to reduce erosion and serve as a demonstration in an area that's highly visible to boaters.		
Past History: Has the applicant applied before? No		
<i>Project Design (70pts)</i>		
Notes: This project proposes 140ft of shoreline stabilization along Big Island in Lake Minnetonka. The stabilization will consist of boulder toe, Class III rip rap, herbaceous plug plantings, shrubs, and tree plantings. The stabilization will reduce erosion and will benefit water quality by reducing TSS and phosphorus loads to Lake Minnetonka.	30/45	Water Resource Improvement to MCWD
	3/5	Innovative Design
	5/5	Budget Detail
	15/15	Maintenance Plan
Project Design Total:		53 /70
<i>Education & Outreach (15 pts)</i>		
Notes: This project is in a high visibility area with a lot of boat traffic; they plan to install signage and seek media coverage. Presentations on a nearby dock are also planned, in addition to presentations to local civic and government groups.	5/10	Outreach Techniques
	5/5	Visibility of Demonstration
Education and Outreach Total:		10 /15
<i>Water Resource Prioritization (15 pts)</i>		
Notes: This project complements other MCWD projects on Big Island, is a demonstration of a high value BMP that protects a high value resource – Lake Minnetonka.	15/15	Alignment with District Priorities
Water Resource Prioritization Total:		15/15
Total:		78/100

Cost Share Grant Evaluation Form
Community Engagement Grant

Name of Reviewer: Darren Lochner/Brett Eidem & Erik Megow (Wenck)
 Date Reviewed: 10-24-16
 CAC/Staff Subcommittee reviewed: 11-1-16
CAC Review 11-9-16

Applicant: Greensboro Condominiums

Project: Louisiana Ave and Franklin Ave, St Louis Park

Total Project Budget: \$33,224

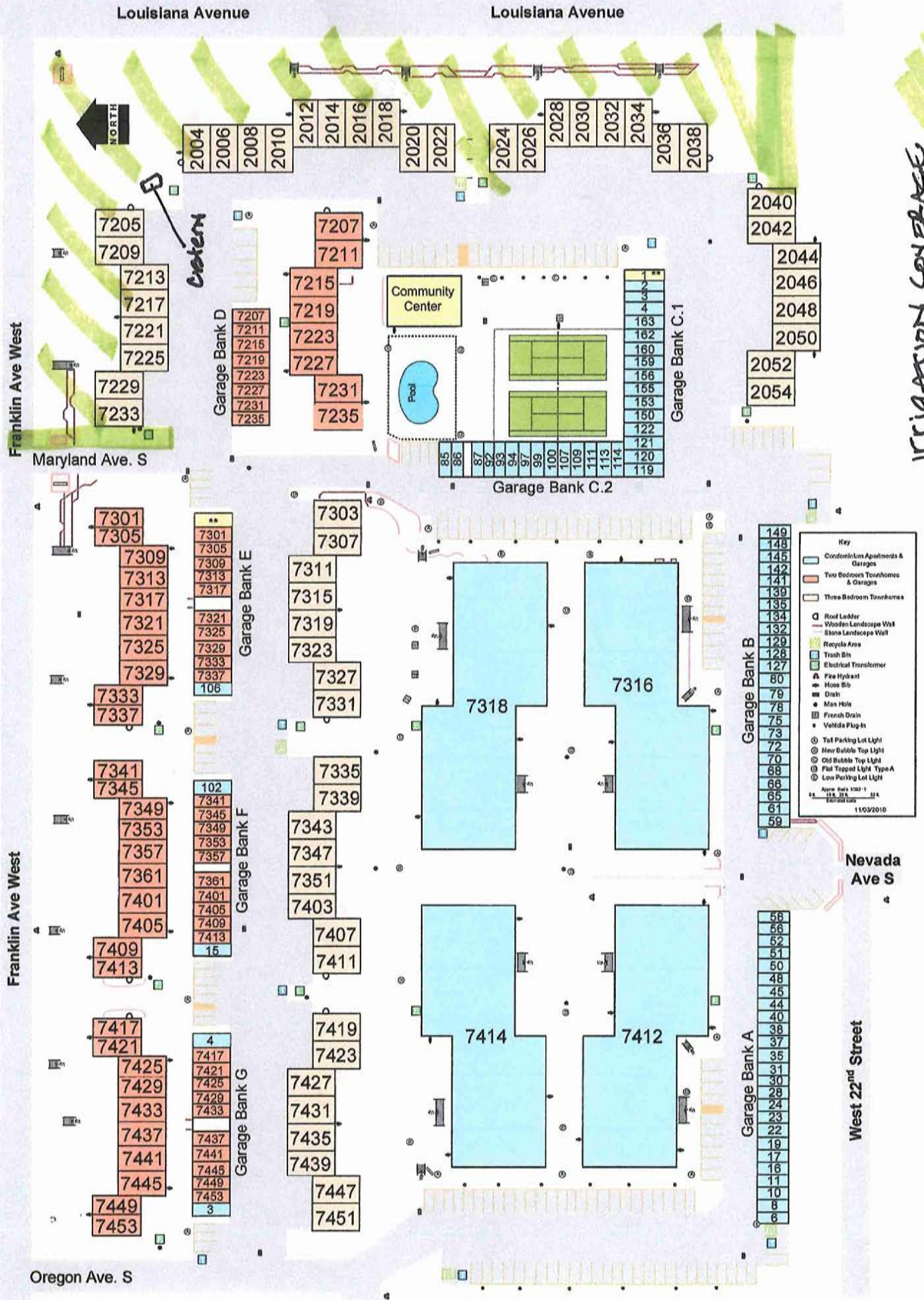
Requested Funding: 50% cost share \$16,333.56 (leveraged by applicant contribution of \$16,333.56 and MWS grant of \$656.88)

Community Engagement Grant: must be designed to produce greater public awareness of ways to improve water quality. These projects use a stormwater BMP as a demonstration to educate the public to build community capacity to grow knowledge and support of stormwater management in the community.

Organization Type: Condo Association, non-profit		
Are the Goals of Project Clearly Outlined? Yes, capture and re-use stormwater from the building roof to irrigate the landscape with RG overflow		
Past History: Has the applicant applied before? No		
<i>Project Design (30pts)</i>		
Notes: This project proposes the construction of a cistern and a raingarden to treat approximately 8,500 sf of roof and sidewalk runoff, removing about .2 lbs of phosphorus per year. The raingarden will capture runoff from the sidewalk and property, while the cistern will collect runoff from the building roofs for re-use in irrigation. This project will be constructed on a highly visible corner and will consist of many different, innovative BMPs including, native plants, a cistern, and native pollinator plantings.	5/10	Water Resource Improvement to MCWD
	5/5	Innovative Design
	5/5	Budget Detail
	7/10	Maintenance Plan
Project Design Total:		22 /30
<i>Education & Outreach (60 pts)</i>		
Notes: This is the capstone project for two Master Water Stewards. Partnerships have been identified, and a 5 th grade class has already visited the site, and will continue through the construction process to learn from this demonstration to implement something similar at their school. There is educational signage proposed at the most visible corner of the site, near the bus stop and walking path. Other outreach techniques outlined in material, including direct partnership with DNR. Also, direct involvement by Greensboro residents, including install.	20/20	Influence within Community
	20/25	Outreach Techniques
	10/10	Visibility of Demonstration
	05/5	Leveraging Other Grant Funds
Education and Outreach Total:		50/60
<i>Water Resource Prioritization (10 pts)</i>		
Notes: This project site drains to Minnehaha Creek, which is a high value resource.	5/10	Alignment with District Priorities
Water Resource Prioritization Total:		5/10
Total:		7782/100

Comments and Notes:

Greensboro Condominiums



IRRIGATION COVERAGE

2004 2006 2008 2010 2012 2014 2016 2018 2020 2022 2024 2026 2028 2030 2032 2034 2036 2038

7205
7209
7213
7217
7221
7225
7229
7233

Garage Bank D
7207
7211
7215
7219
7223
7227
7231
7235

7207
7211
7215
7219
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7227
7231
7235

Community Center
Pool

Garage Bank C.1
1
2
3
4
183
182
160
159
166
155
153
150
122
121
120
119

2040
2042
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2054

Maryland Ave. S

Garage Bank C.2
85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119

7301
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7317
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Garage Bank E
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7318
7316

Garage Bank B
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Key

- Condominium Apartments & Garages
- Two Bedroom Townhomes & Garages
- Three Bedroom Townhomes
- Roof Ladder
- Wooden Landscape Wall
- Stone Landscape Wall
- Recycle Area
- Trash Bin
- Electrical Transformer
- Fire Hydrant
- Hose Bib
- Drain
- Man Hole
- French Drain
- Valve Plug-In
- Tall Parking Lot Light
- New Bubble Top Light
- Old Bubble Top Light
- Flat Topped Light Type A
- Low Parking Lot Light

APR 2010 - 11/03/2010

Nevada Ave S

Franklin Ave West

7341
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7401
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7409
7413

Garage Bank F
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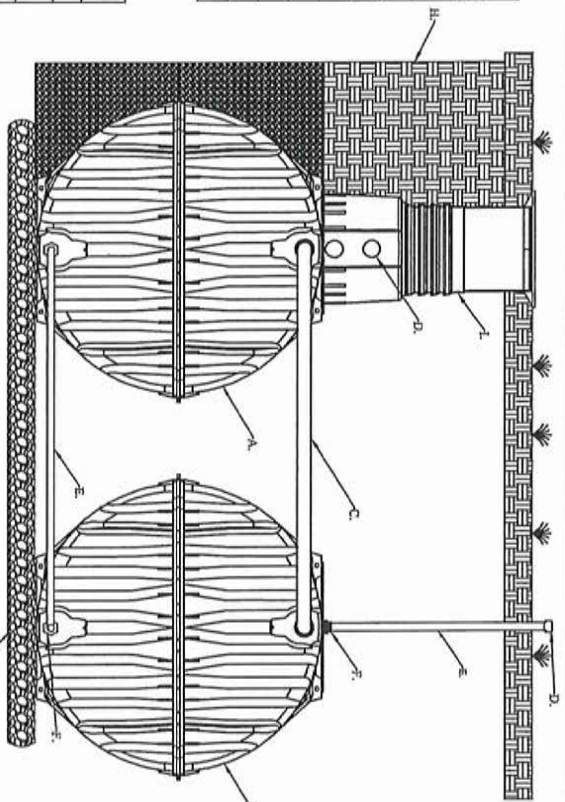
7414
7412

Garage Bank A
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6

West 22nd Street

Oregon Ave. S

Legend A	
A.	GRAF Carat S 1700 Gallon Underground Tank (1)
B.	GRAF Carat S 1700 Gallon Underground Extension Tank (1)
C.	Optional Upper Tank Connection
D.	2" Screened Tank Vent (2)
E.	2" Lower Balancing Lines
F.	2" Bajajo Bulhead Fitting
G.	Gravel Base (#57) and Backfill (#89 or Pan)
H.	Native Soil Backfill (Above Tank)
1.	12" Riser Extension for Tank Access (Optional)

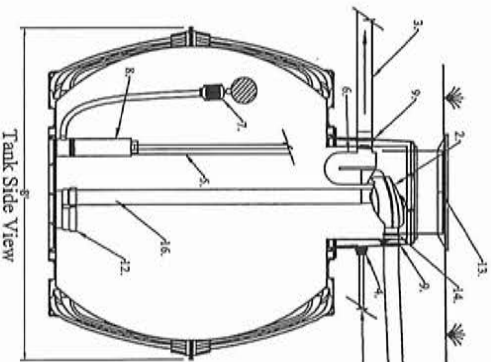
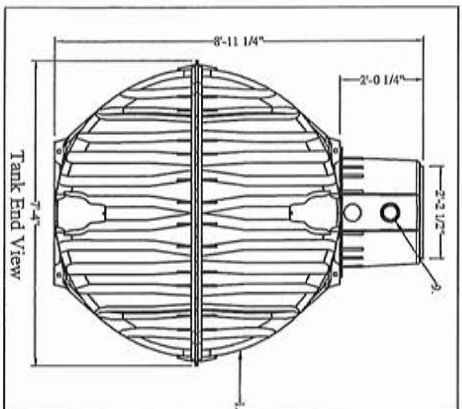


Tank End View
3400 Gallon System

GRAF Carat S 1700 Gallon Tank Specifications:

- Variable burial depth: 30" to 42" (59" Max. with optional dome extension and "Maxi" telescopic riser)
- Unique in the world! - unique manufacturing process produces the highest stability due to latest techniques
- Consistent quality due to TUV safety testing and production monitoring
- Vehicle-bearing (with telescopic car from manure kit)
- Groundwater stable up to the middle of the tank due to extremely rigid construction
- Secure investment with market leading 15-year warranty
- Made from high quality Durolene; easy to recycle
- Can be expanded as required

Legend B	
1.	GRAF Carat S 1700 Gallon Underground Tank
2.	GRAF Optimax Pro Internal High efficiency, self-cleaning, In Tank filtration system.
3.	4" overflow drain to storm drain or other. Typically 4" PVC Sewer and Drain.
4.	1-1/2" Bulbhead Fitting for plumbing thru tank or riser assembly
5.	115v Power supply
6.	Overflow siphon with mosquito and rodent stop
7.	GRAF 1-1/4" Floating Pump Extractor with 1200 Micron Coarse Screen
8.	RainFlo 1.25 HP Submersible Pump, Continuous duty with stainless steel base and a 1-1/4" threaded intake for use with a floating filter.
9.	4" 4" Pipe Gasket
10.	4" Leader from Roof Gutters and Downspouts
11.	1 1/4" Schedule 40 PVC Pump output to Use
12.	Chaining lid to prevent the disturbance of the fine sediment layer at bottom of tank
13.	Adjustable Riser and Childproof Lid
14.	4" Flexible Pipe Coupler
15.	Pump Output Line to Irrigation or other source
16.	4" PVC Pipe From Optimax Filter Affixed to Chaining Lid



Tank Side View

USERS Responsibility:
 Unwashed Rainwater is NON-Potable water. Warning do not drink water supplied from RainFlo rainwater systems and related equipment. We will be happy to offer suggestions on the use of our various products either by phone, fax, email or through direct contact with our Field Service Technicians. However, since we have no control over the use of our products once they are shipped, NO WARRANTY WHETHER OF MERCHANTABILITY, FITNESS FOR PURPOSE, OR OTHERWISE is made beyond the input, replacement, or refund of purchase price at the sole discretion of RainFlo Systems. Users shall determine the suitability of the product for the intended application before installation. RainFlo Systems does not warrant, either in connection therewith, regardless of any team members suggestions or statements as to the application or construction. In no event shall any remedy exceed the purchase price of the product. Consult local building codes for the system use.

GRAF Optimax High efficiency, self-cleaning, InTank Filtration system.

- Filter specially developed for rain water harvesting
- Low maintenance: self cleaning
- Only 6.5" height offset between inlet and outlet
- 0.35mm (017) mesh filter
- Transparent cover for easy maintenance
- Optional Optimax® Sprayhead
- Over 95% yield
- Self-cleaning filter
- Max. 3,750 sq. ft. with 4" connectors
- Space saving filter technology integrated in the tank



Tank height should be set and plumbing pitched to bear utilize existing grade. A site assessment should be done prior to installation to determine the optimum levels for filter and plumbing so as to provide positive drainage to tank and stormwater overflows.

NOTE: This drawing is for illustrative purposes only. Actual systems may vary. Installation and maintenance should be performed by licensed professionals. Please refer to the RainFlo website for more information. RainFlo Systems, LLC. 6075 Parkway North Drive Suite D Cumming, GA 30040 Tel: 770-889-2533 Fax: 770-889-2577

RAINFLO®
 RainFlo 3400IG Rainwater Collection System

RainFlo Systems LLC,
 6075 Parkway North Drive Suite D
 Cumming, GA 30040
 Tel: 770-889-2533 Fax: 770-889-2577

SCALE:	DATE:	DESIGNER:	CHECK:
1" = 1'			

Cost Share Grant Evaluation Form
Community Engagement Grant

Name of Reviewer: Darren Lochner and Erik Megow (Wenck)
 Date Reviewed: 10-24-16
 CAC-Staff Subcommittee Review: 11-1-16

Applicant: Metro Blooms

Project: Standish Ericcson Alley Retrofit

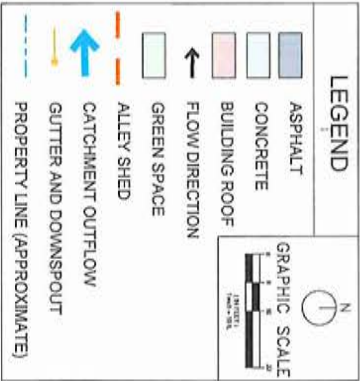
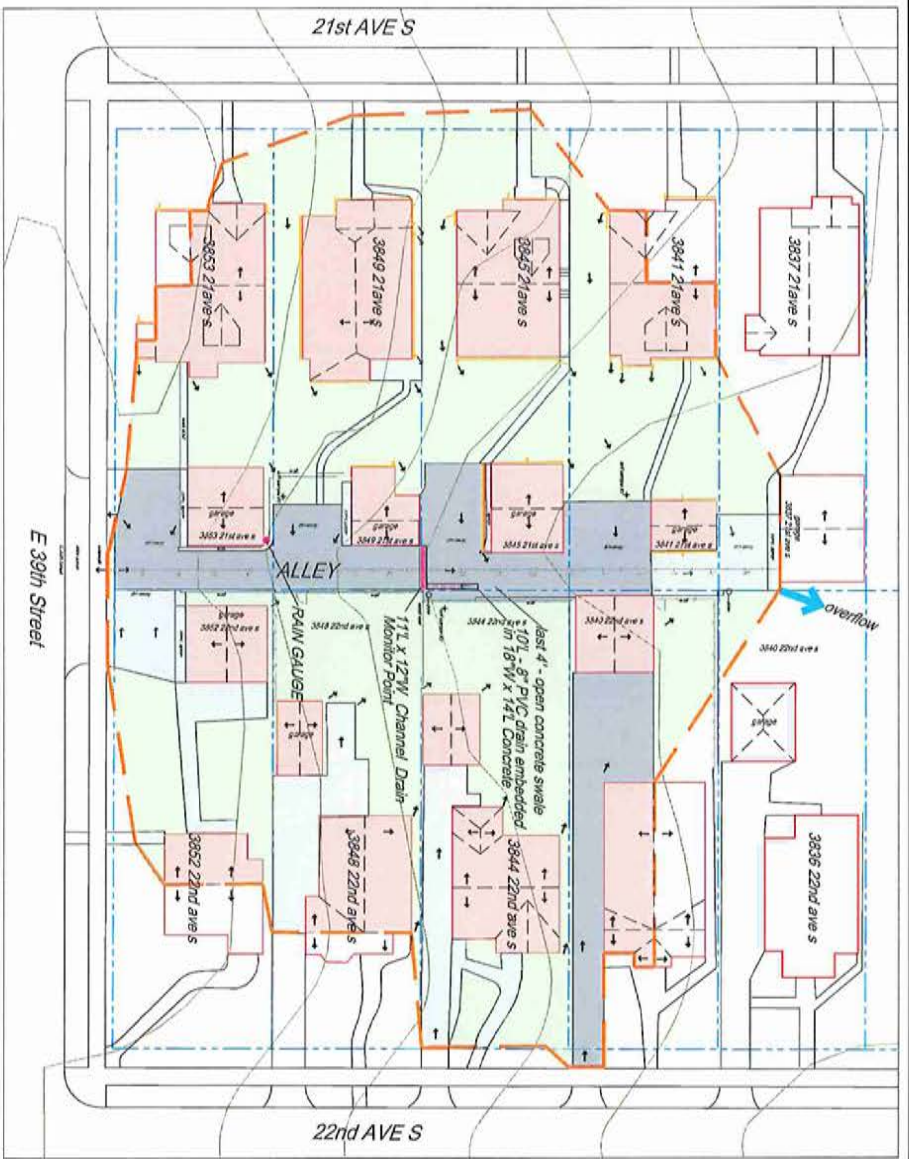
Total Project Budget: \$98,150

Requested Funding: \$40,000 (leveraged by \$40,000 Hennepin County grant; \$15,000 homeowner match)

Community Engagement Grant: must be designed to produce greater public awareness of ways to improve water quality. These projects use a stormwater BMP as a demonstration to educate the public to build community capacity to grow knowledge and support of stormwater management in the community.

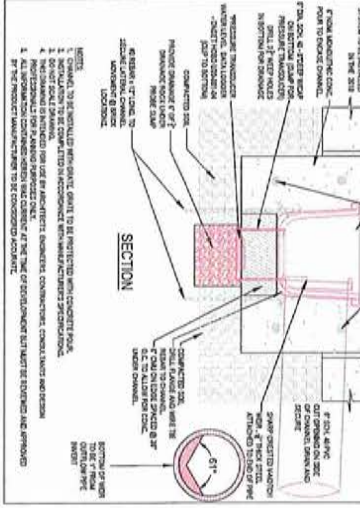
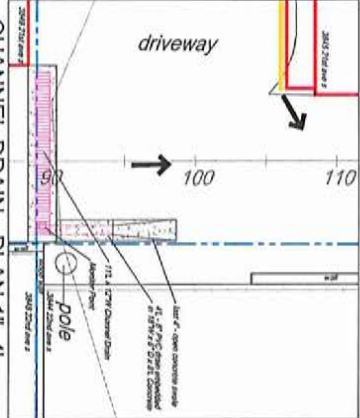
Organization Type: Neighborhood Association, non-profit		
Are the Goals of Project Clearly Outlined? Yes. Implementation of pervious pavement and monitoring system in a privately-owned Minneapolis alleyway (spanning 10 residential properties) located in the Hiawatha subwatershed.		
Past History: Has the applicant applied before? Metro Blooms has applied for other projects in the past, this is the first in the SENA neighborhood		
<i>Project Design (30pts)</i>		
Notes: This project aims to reduce flooding by retro-fitting an alleyway with permeable pavement and a stormwater monitoring system. Working with Metro Blooms, five homeowners are working together to create one of the first permeable alleyways in Minneapolis and will actively monitor its benefits. The monitoring plan was developed by the U of M's St. Anthony Falls Laboratory. The project will capture runoff from 19,143 square feet of impervious surface, provide TSS and phosphorus benefits, including .9 lbs of phosphorus removal per year, while also alleviating local flooding issues.	8/10	Water Resource Improvement to MCWD
	5/5	Innovative Design
	5/5	Budget Detail
	10/10	Maintenance Plan
Project Design Total:		28 /30
<i>Education & Outreach (60 pts)</i>		
Notes: The plan highlights that a sign will be installed on one of the properties closest to the street with the target audience – pedestrian traffic. Monitoring results will be shared with the City of Minneapolis. It also will be shared with partners and on the metroblooms.org website and social media, and newsletter. Other education and outreach activities include tours to interested groups and outreach to local school groups.	16/20	Influence within Community
	18/25	Outreach Techniques
	5/10	Visibility of Demonstration
	5/5	Leveraging Other Grant Funds
Education and Outreach Total:		44/60
<i>Water Resource Prioritization (10 pts)</i>		
Notes: The project area drains to Lake Hiawatha, which is an impaired waterbody. It complements other District initiatives in the area including the Nokomis Blooming Alleys, work with the newly established Friends of Lake Hiawatha, and the District's work in the Minnehaha Creek focal geography.	10/10	Alignment with District Priorities
Water Resource Prioritization Total:		10 /10

Total: 82 /100



AREA TABLE	
alley/shed	37,072 sf .861 ac
house/garage disconnected	9,913 sf .228 ac
garage connected	9,444 sf .222 ac
drives disconnected	3,004 sf .069 ac
drives connected + alley	4,509 sf .104 ac
walks disconnected	9,444 sf .222 ac
lawn	17,798 sf .408 ac
total impervious =	19,314 sf = 52.1%

Runoff in a 1.27" rain event = 1,493 cf = 11,168 gal
 Runoff in an average year = 34,098 cf = 259,038 gal
 * stormwater modeled using WMS/LAMM v.10.0



WDS INC.
 11111 HARBOR AVE
 LINCOLN, CA 92027
 TOLL FREE: 1-800-726-1984
 PHONE: (925) 500-0888
 FAX: (925) 500-4488
 www.nds.com

- NOTES:
 AREAS, LOCATIONS OF STRUCTURES AND SURFACE FEATURES ARE APPROXIMATE AS DETERMINED FROM AERIAL PHOTOGRAPHS, SITE PHOTOGRAPHS AND FIELD MEASUREMENTS.
 CONTRACTOR RESPONSIBLE FOR LOCATING PROPERTY LINES AND UTILITIES.
- BID NOTES:
 CONTRACTORS TO PROVIDE BIDS FOR THE FOLLOWING:
1. TRENCH DRAIN, DRAIN SYSTEM, RAIN GAUGE (ONSET HOBO RG3) AND MONITOR HARDWARE AS DETAILED BELOW (INSTALL IN APRIL OF 2017)
 2. BASE BID AND/OR ALT BIDS (INSTALL APRIL OF 2018)
 - 2.1. BASE BID - DEMOLITION OF ALLEY (REMOVAL OF EXISTING BITUMINOUS SURFACE AND ALL SUB SURFACE MATERIAL TO ALLOW FOR THE INSTALLATION OF A NEW PERMEABLE PAVEMENT PAVEDRAIN SYSTEM.
 - 2.1. BASE BID - INSTALLATION OF A PAVEDRAIN SYSTEM AS DETAILED ON SHEET 12 (HAND METHOD), TO INCLUDE BITUMINOUS PATCH TO SAW CUT.
 3. ALT BID 1 - DEMO DRIVEWAYS AND REPLACE WITH NEW 3" BITUMINOUS. (SEPARATE BIDS BY ADDRESS)
 4. ALT BID 2 - DEMO DRIVEWAY AND REPLACE WITH NEW PAVEDRAIN, 6-INCHES OF 3/4"-1" CLEAN STONE ONLY, NO 2-3" STONE NECESSARY (SEPARATE BIDS BY ADDRESS)
 5. ALL CONTRACTS TO BE COMPLETE BY DECEMBER OF 2018

NO.	DATE	DESCRIPTION
1	10/1/18	ISSUED FOR PERMIT
2	10/1/18	ISSUED FOR PERMIT
3	10/1/18	ISSUED FOR PERMIT
4	10/1/18	ISSUED FOR PERMIT
5	10/1/18	ISSUED FOR PERMIT
6	10/1/18	ISSUED FOR PERMIT
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99	10/1/18	ISSUED FOR PERMIT
100	10/1/18	ISSUED FOR PERMIT

Standish Ericsson
 Alley Project

Metro Blooms
 PO Box 17068
 Minneapolis, MN 55417
 651-699-2426



L1



Cost Share Grant Evaluation Form
Community Engagement Grant

Name of Reviewer: Telly Mamayek, Erik Megow (Wenck)
 Date Reviewed: 10-24-2016
 CAC-Staff Subcommittee Review: 11-1-16

Applicant: Uptown Housing Cooperative

Project: 3450 James Ave. S., Minneapolis

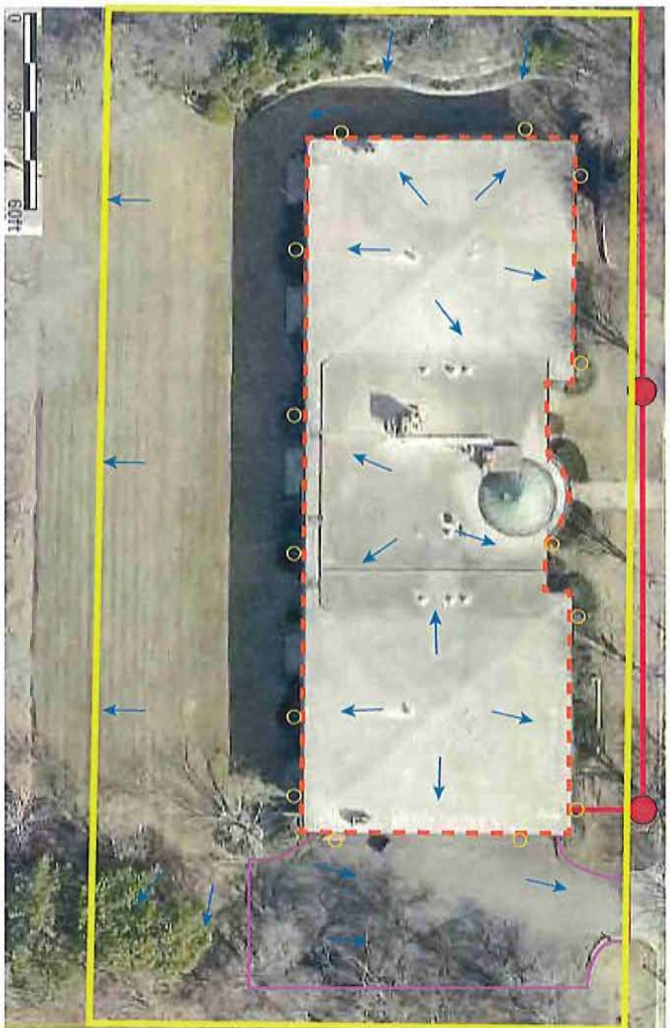
Total Project Budget: \$28,570.40

Requested Funding: 50%

Community Engagement Grant: must be designed to produce greater public awareness of ways to improve water quality. These projects use a stormwater BMP as a demonstration to educate the public to build community capacity to grow knowledge and support of stormwater management in the community.

Organization Type: Condo Association, non-profit		
Are the Goals of Project Clearly Outlined? Yes. Six raingardens to catch roof runoff with emphasis on educating others about the value of these BMP's.		
Past History: Has the applicant applied before? No		
<i>Project Design (30pts)</i>		
Notes: Six raingardens are proposed to treat approximately 17,200 square feet of roof runoff. The six raingardens will be placed all around the building and new downspouts will be provided to direct stormwater to the raingardens.	6/10	Water Resource Improvement to MCWD
	3/5	Innovative Design
	5/5	Budget Detail
	10/10	Maintenance Plan
Project Design Total:		24 /30
<i>Education & Outreach (60 pts)</i>		
Notes: Two open houses with neighborhood association, joint event with First Universalist church, signage, class at Shir Tikvah Synagogue, outreach to other multi-housing associations, work with two Master Water Stewards	20/20	Influence within Community
	15/25	Outreach Techniques
	5/10	Visibility of Demonstration
	0/5	Leveraging Other Grant Funds
Education and Outreach Total:		40/60
<i>Water Resource Prioritization (10 pts)</i>		
Notes: Project uphill from Lake Cahoun, with has a grade of A. In same neighborhood as St. Mary's Greek Orthodox Church, where the District funded BMP's.	6/10	Alignment with District Priorities
Water Resource Prioritization Total:		6 /10
Total:		70/100

3540 James Ave S
Stormwater Drainage Map



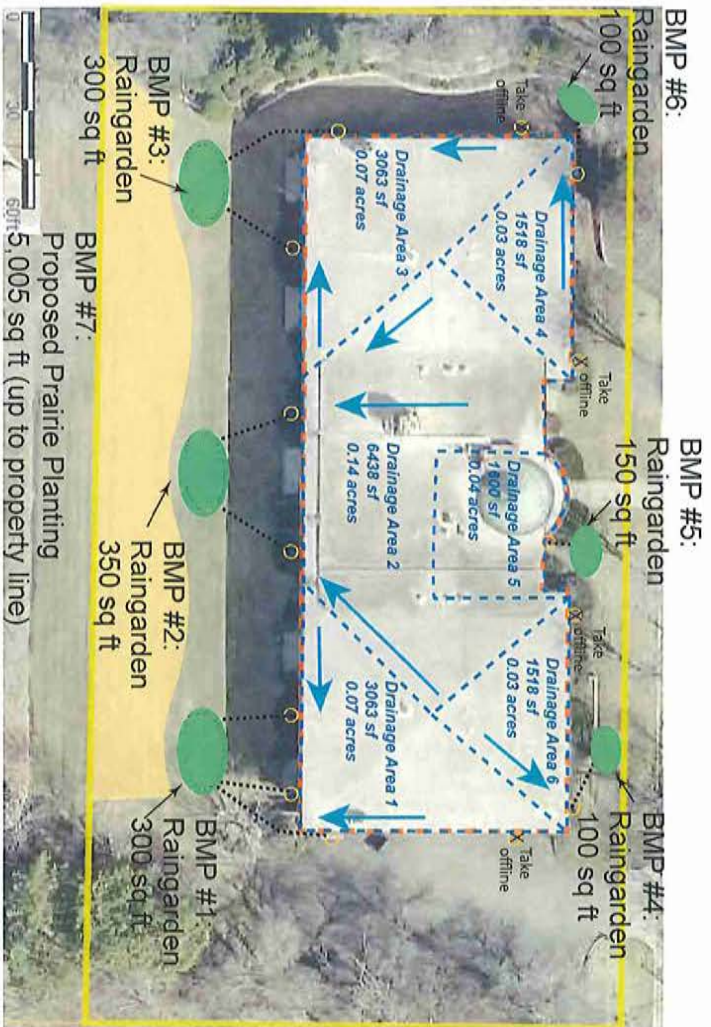
The current stormwater conditions on the roof include both pitched and flat roofs, that drain into gutters that lead underground. The cooperative currently pays the City of Minneapolis a monthly stormwater fee of \$178.13. The roof stormwater run-off currently runs into underground pipes, which are then connected to a storm sewer pipe that runs under 36th St and into Lake Calhoun. Two downspouts empty onto the parking lot, which slopes to the street and runs onto 36th St, and into Lake Calhoun as well.

Re-routing of the downspouts will be necessary in order to direct the stormwater run-off coming from the roof most efficiently to the proposed Stormwater Best Management Practices (BMPs) detailed in the following pages. Re-routing of downspouts is something that can qualify for cost-share funds from Minnehaha Creek Watershed District (MCWD).

Total area of property =	1.21 acres	52,989 sq. ft.
Total impervious area =	0.53 acres	22,826 sq. ft.
Building Roof =	0.42 acres	18,137 sq. ft.
Parking Lot =	0.11 acres	4,642 sq. ft.
Lawn =	0.56 acres	24,689 sq. ft.
Non-lawn landscape =	0.20 acres	8,859 sq. ft.



One of the building's downspouts emptying underground.



3540 James Ave S.
Best Management Practices (BMP) Opportunities Map

BMPs #1 and #3: Raingardens with Drain Tile

Designed for handling a 1 1/4" rain event

RAINGARDEN - 300 sq ft / .007 acre	% REDUCTION 30" avg yearly rain:
TOTAL IMPERVIOUS:	Volume - 100%
Building - 3,063 sq ft / .07 acre	Phosphorous - 100%
	Total Solids - 100%
TOTAL % IMPERVIOUS TREATED:	AMOUNT OF REDUCTION
100% of Drainage area 1	Volume (gallons) - 3,196
	Phosphorous (lbs.) - 0.88
	Solids (lbs.) - 0.006

Costs and Maintenance: Installing a 300 sq ft rain garden with connecting underground drain tile would be approx. \$15-\$20 a sq ft, so this BMP could cost \$4,500-\$6,000. This is an estimate, to get a more accurate cost you would need a bid from a contractor for your specific site. Cost sharing grants would be available for this kind of BMP from MCWD, as well as stormwater credits from the City.

Maintenance would include watering weekly for the first season or two until plants are established, and weeding 1-3 times a season to ensure weeds don't out-compete rain garden plants. This maintenance could be done by the cooperative's current maintenance company, the residents themselves, or an outside company that specializes in maintenance of native plantings and raingardens.

BMP #2: Rain garden with Drain Tile

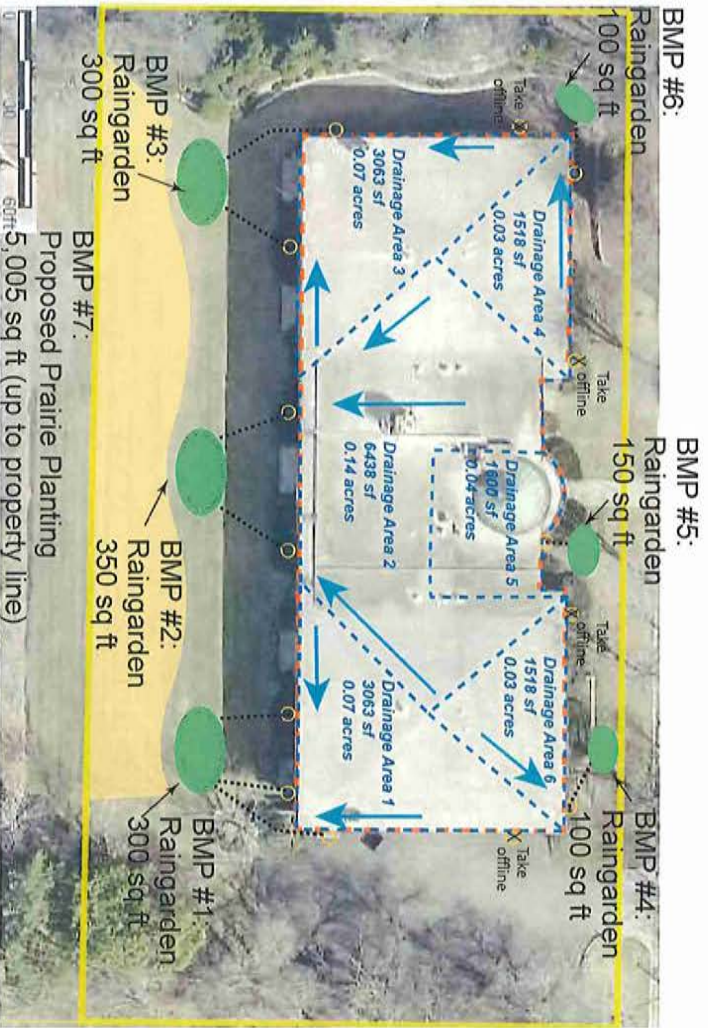
Designed for handling a 1 1/4" rain event

RAINGARDEN - 350 sq ft / .007 acre	% REDUCTION 30" avg yearly rain:
TOTAL IMPERVIOUS:	Volume - 100%
Building - 6,438 sq ft / .14 acre	Phosphorous - 100%
	Total Solids - 100%
TOTAL % IMPERVIOUS TREATED:	AMOUNT OF REDUCTION
100% of Drainage area 2	Volume (gallons) - 4,068
	Phosphorous (lbs.) - 1.120
	Solids (lbs.) - 0.007

Costs and Maintenance: Installing a 350 sq ft rain garden with connecting underground drain tile would be approx. \$15-\$20 a sq ft, so this BMP could cost \$5,250-\$7,000. This is an estimate, to get a more accurate cost you would need a bid from a contractor for your specific site. Cost sharing grants would be available for this kind of BMP from MCWD, as well as stormwater credits from the City.

Maintenance would include watering weekly for the first season or two until plants are established, and weeding 1-3 times a season to ensure weeds don't out-compete rain garden plants. This maintenance could be done by the cooperative's current maintenance company, the residents themselves, or an outside company that specializes in maintenance of native plantings and raingardens.





BMP #6: Raingarden 100 sq ft
BMP #5: Raingarden 150 sq ft
BMP #4: Raingarden 100 sq ft

BMP #5: Raingarden with Drain Tile (front of building)
Designed for handling a 1 1/4" rain event

RAINGARDEN - 150 sq ft / .003 acre	% REDUCTION 30" avg yearly rain:
TOTAL IMPERVIOUS:	Volume - 100%
building - 1,600 sq ft / .04 acre	Phosphorous - 100%
	Total Solids - 100%
TOTAL % IMPERVIOUS TREATED:	AMOUNT of REDUCTION
100% of Drainage area 3	Volume (gallons) - 1,162
	Phosphorous (lbs.) - 0.32
	Solids (lbs.) - 0.002

Costs and Maintenance: Installing a 150 sq ft raingarden with connecting underground drain tile would be approx. \$15-\$20 a sq ft, so this BMP could cost \$2,225 - \$3,000. This is an estimate, to get a more accurate cost you would need a bid from a contractor for your specific site. Cost sharing grants would be available for this kind of BMP from MCWD, as well as stormwater credits from the City. Maintenance regime same as other raingardens listed.

3540 James Ave S.
Best Management Practices (BMP) Opportunities Map (continued)

BMPs #4 and #6: Raingardens with Drain Tile (front of building)
Designed for handling a 1 1/4" rain event

RAINGARDEN - 100 sq ft / .002 acre	% REDUCTION 30" avg yearly rain:
TOTAL IMPERVIOUS:	Volume - 100%
building - 1518 sq ft / .03 acre	Phosphorous - 100%
	Total Solids - 100%
TOTAL % IMPERVIOUS TREATED:	AMOUNT of REDUCTION
100% of Drainage area 5	Volume (gallons) - 872
	Phosphorous (lbs.) - 0.24
	Solids (lbs.) - 0.002

Costs and Maintenance: Installing a 100 sq ft raingarden with connecting underground drain tile would be approx. \$15-\$20 a sq ft, so this BMP could cost \$1,500 - \$2,000. This is an estimate, to get a more accurate cost you would need a bid from a contractor for your specific site. Cost sharing grants would be available for this kind of BMP from MCWD, as well as stormwater credits from the City. Maintenance regime same as other raingardens listed.

~~BMP #5: Native Prairie Hillside Planting - 5,005 sq ft (0.11 acres)
The benefits of a hillside native prairie planting would save on lawn maintenance costs (mowing, fertilizer/pesticide use), gaining value pollinator/wildlife habitat (which will benefit Lake Calhoun and the greater area), and aesthetic beauty of a blooming prairie through the seasons.
The estimated cost of prepping the site and installation would be \$3 a square foot, or \$15,000. This number is quoted from Blazing Star Gardens, a local native plant nursery that specializes in native restoration, landscaping, and design. Cost sharing grants would be available for this kind of BMP from MCWD, for it's wildlife value, as well as stormwater value.~~



3540 James Ave S.

Example Photos of Proposed Best Management Practices (BMP)



Photo credit: Prairie Restoration



Photo credit: Bob Muggins, U of MN



Photo credit: 3Inveszmentweahter.org



Photo credit: Drainagedoctor.com



Photo credit: www.mn.gov

Example Raingardens

Hillside Prairie Planting

Stormwater Management Plan

3540 James Ave S, Minneapolis MN

Designer: Lacey Doucet Campbell



Metro Blooms