



Title: Lamplighter Pond Water Quality Project

Prepared by: Name: Kayla Westerlund
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Reviewed by: James Wisker, District Administrator

Budget considerations: Project selection expenditures to date: \$18,400
Escrow amount: \$490,000

- Stantec Feasibility study: \$27,800

Past Board action: [August 20, 2018: Res #18-083 Variance Approval for LifeTime, Inc., 5525 Cedar Lake Road, Permit 18-153](#)

[December 16, 2021: Res #21-089 Authorization to Execute a Contract with Stantec, to develop a Feasibility Study of a Filtration System at Lamplighter Pond](#)

Purpose:

To review the Lamplighter Pond Water Quality Project's (Project) completed feasibility study, and determine the Board's interest in advancing the project from feasibility to scheduling a public hearing and executing a cooperative agreement with the City of St. Louis Park (City) at the October 20, 2022 Board Meeting. This action will allow the District to commit and disburse escrow funds to the City for project design, construction, and maintenance of a project that satisfies the performance requirements of the Alternative Stormwater Management Agreement.

Background:

Alternative Stormwater Management Agreement for Permit #18-153

At the August 23, 2018 meeting, the Board of Managers approved a variance request from Healthy Way of Life I, LLC (the Applicant) to the District's Stormwater Management rule for Permit #18-153. As a condition of the variance, the District and the Applicant, executed a cooperative agreement (Agreement) under which the District agreed to use its capacities to identify regional stormwater management to provide 7.2lb/year phosphorus removal which is an equivalent amount of stormwater treatment to what would have been required on-site; and the Applicant agreed to place \$490,000 in an escrow held by the District. The District may apply the escrowed funds to the costs of identifying, designing, constructing and maintaining an alternative stormwater treatment facility. Pursuant to the terms of the Agreement, the District must take formal action identifying one or more projects for final feasibility and advancement of design by August 23, 2023. The Agreement also provides for consultation with the Applicant at certain points in the project selection process.

Initial Stormwater Management Alternatives Analysis

Following the Board's approval of Permit #18-153 and the Agreement in August of 2018, District staff and the District engineer assessed a total of 15 treatment locations before ultimately presenting Lamplighter Pond as the most viable option to the Board of Managers at the September 9, 2021 meeting. The majority of the potential locations, including Lamplighter, were unable to provide abstraction. Per the terms of the Agreement, the funds can be used for a project that either fully or partially meets the water treatment goals. The review identified no sites where stormwater volume could meaningfully be abstracted. The Lamplighter Pond location was selected as it offers the greatest total phosphorus reduction (see Attachment A for overview map).

To advance the District-Applicant agreement, on December 16, 2021 the Board authorized a contract with Stantec in the amount of \$27,800 to perform a feasibility study of a manufactured treatment device (MTD) to improve the quality of water discharging from Lamplighter Pond.

Summary:

Initial Lamplighter Pond Feasibility Analysis

Initial feasibility work completed by Stantec considered three size options for a MTD, that would meet the goal of 7.2lb/year phosphorus removal, by pumping water from Lamplighter Pond through a series of filters. This design would require a second lift station to be built at the Lamplighter Pond outlet, which would pump water through a Contech StormFilter (CSF), in the form of an underground rectangular concrete vault that would house 27 PhosphoSorb media filtration cartridges, before returning it to Lamplighter Pond where the existing lift station would ultimately convey water downstream to Twin Lakes. The range of construction cost, based largely on the size of the vault and number of cartridges, was estimated to be between \$320,000 to \$500,000. Maintenance, which would consist primarily of backwashing and replacing cartridges every 1-3 years, was estimated to be \$8,500 to \$27,000.

Since this option would exist on City land, and the District was interested in the City owning and maintaining the filtration system District staff reviewed this concept with the City's engineering staff. Following initial support for this concept, City staff offered an alternative location for the project, further downstream at Northside Park, that would be a gravity draining system, based on concerns primarily regarding the ongoing operations and maintenance that would accompany a second lift station at Lamplighter Pond.

Northside Park Feasibility Analysis

Based on concerns regarding the installation of a second pump station, City staff recommended a location for the stormwater management system be analyzed downstream in the eastern boulevard of Nevada Avenue, on public land, adjacent to the Northside Park parking lot. This is the discharge location of the Lamplighter Pond forcemain, and would allow this location to operate on gravity addressing the City's concerns with the operation of a second lift station.

Based on the City's request, Stantec's analysis of stormwater feasibility evaluated the Northside Park location. Similar to the initial review, three size options have been considered for the MTD. Stante and MCWD staff analyzed spatial constraints relative to other utilities, location and elevation to maintain gravity flow, project performance, capital and maintenance costs, and then in collaboration with the City selected the mid-sized project option that will be sized to achieve the 7.2 lbs/year requirement, with an estimated cost for design, construction oversight and contingency of \$289,000. Pursuant to the alternative stormwater management agreement, and factoring in the \$27,800 authorized for feasibility analysis, this would leave approximately \$173,200 in escrow to support annualized maintenance costs. District staff has maintained open communication with the Applicant, which is also supportive of the Northside Park location (see Attachment A for overview map and Attachment B for Northside Project details).

Proposed Terms of MCWD – City of St. Louis Park Agreement

District staff have proposed, and City staff have concurred, that the City perform the MTD installation and assume responsibility for operation and maintenance. This rests on several considerations, principally that design of the installation is straightforward; that the MTD will be on and under City property; and that it will be integrated within the City's stormwater conveyance system and most efficiently maintained as a part of that system. On September 14, 2022, the District administrator transmitted a draft letter of intent to the City Manager to summarize discussion and coordination that has occurred among City and District staff to evaluate Northside Park as the location for the Lamplighter Pond Water Quality Project, and to outline the proposed roles and responsibilities of the City and District in advancing the project. The letter reflects that the City would be responsible for project design, construction, and maintenance, in coordination with the District. The City may invoice the District for design and construction costs incurred, and the District will disburse escrow funds in reimbursement. Remaining escrow funds would be paid over to the City for the present value of the maintenance commitment. The Assistant City Manager has countersigned the letter, which is included as a supporting document to this memorandum.

Next Steps and Timeline:

If the Board concurs in the project framework as set forth, District staff and counsel will work with City staff to prepare a project agreement aligned with the terms of the letter of intent, and schedule a public hearing for the October 20, 2022 Board Meeting. After the public hearing, the Board would be in a position to order the project and approve the project agreement.

Stantec has provided an estimate for design, and following contract execution the anticipated milestones include:

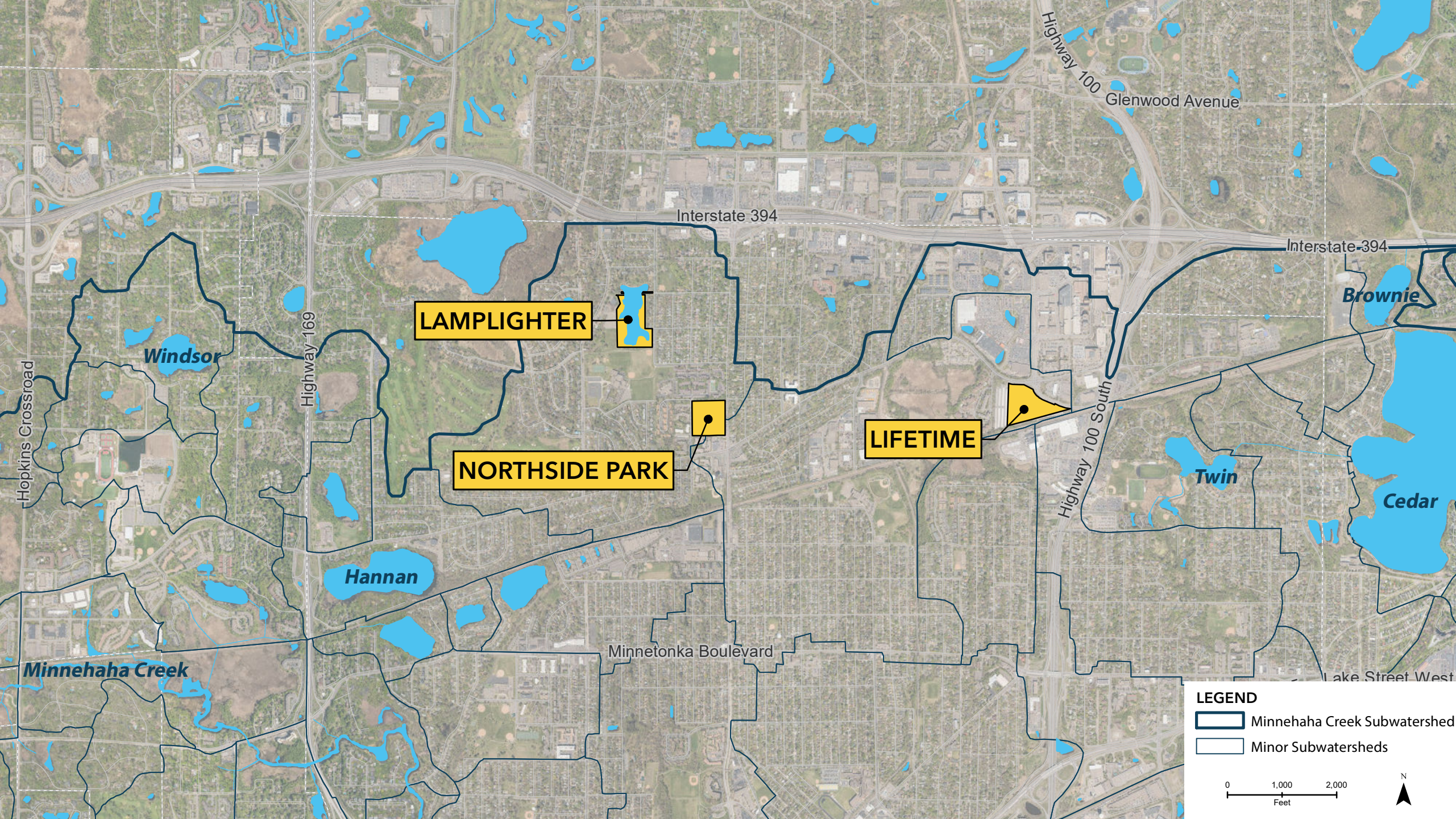
- October – November 2022: Finalize design
- December – January 2023: Project bidding
- Spring – Summer 2023: Construction
- August 27, 2023: Deadline for MCWD to order project per agreement with Lifetime

Supporting documents:

- [10.1 Permit 18-153 5525 Cedar Lake Road, SLP and Resolution #18-083](#)
- [12.1 Permit 18-153 LifeTime Fitness Regional Stormwater Planning Update](#)
- [11.1 Authorization to Execute a Contract with Stantec, to develop a Feasibility Study of a Filtration System at Lamplighter Pond and Resolution #21-089](#)

Attached documents:

- Attachment A: Overview map of LifeTime, Lamplighter Pond, and Northside Park
- Attachment B: Northside Park Proposed Project Location
- Attachment C: Lamplighter Pond Water Quality Project Feasibility Study
- Attachment D: Lamplighter Pond Water Quality Project Design & Construction Estimate
- Attachment E: Signed Letter of Intent from St Louis Park



Highway 100
Glenwood Avenue

Interstate 394

Interstate 394

Brownie

LAMPLIGHTER



Windsor

Highway 169

Hopkins Crossroad

Highway 100 South

NORTHSIDE PARK



LIFETIME



Twin

Cedar



Hannan

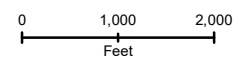
Minnehaha Creek

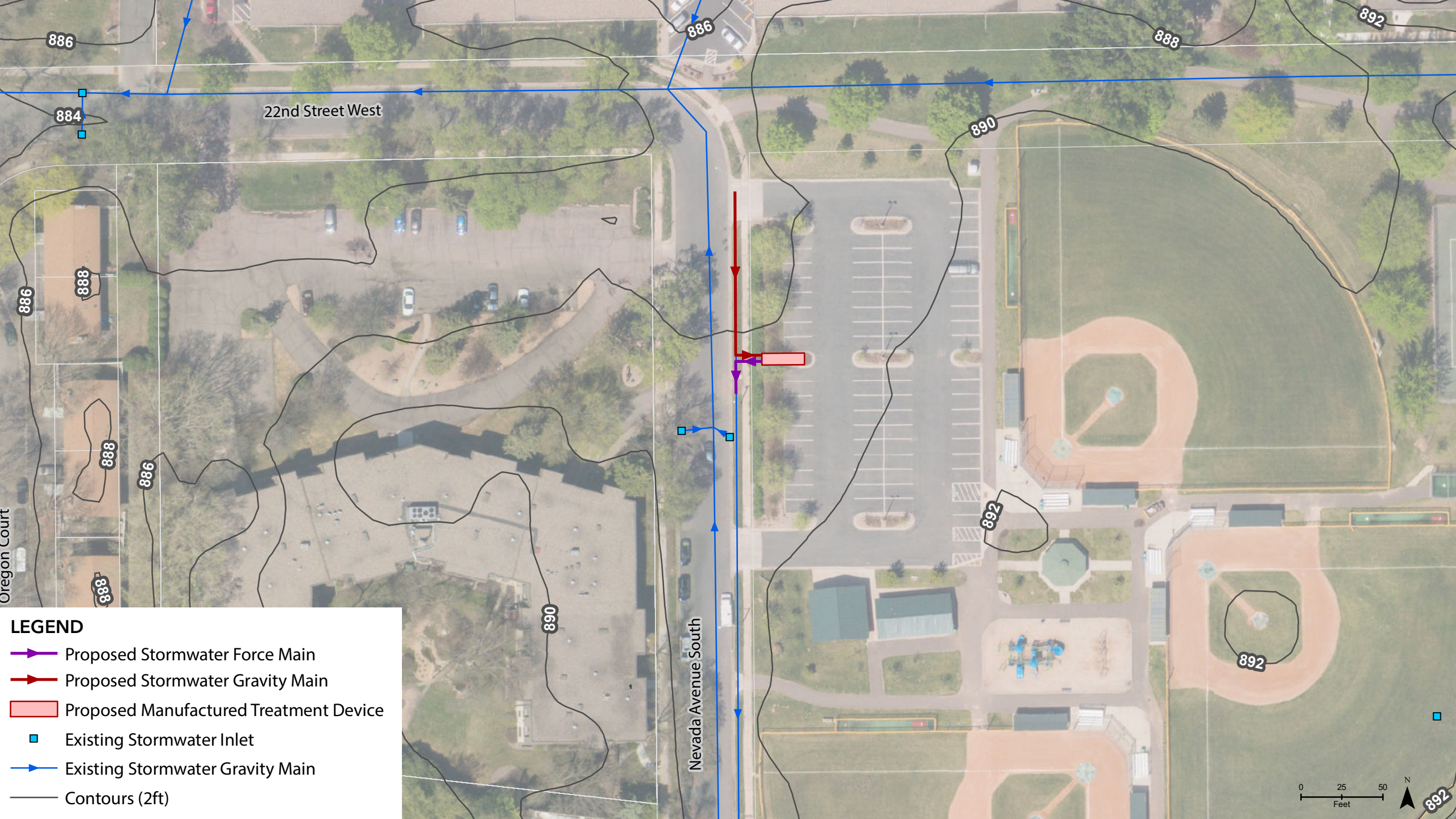
Minnetonka Boulevard

Lake Street West

LEGEND

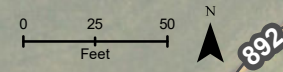
-  Minnehaha Creek Subwatershed
-  Minor Subwatersheds





LEGEND

- Proposed Stormwater Force Main
- Proposed Stormwater Gravity Main
- Proposed Manufactured Treatment Device
- Existing Stormwater Inlet
- Existing Stormwater Gravity Main
- Contours (2ft)



To: Kayla Westerlund, Permitting Program Manager From: Todd Shoemaker, PE, CFM
Brendan Barth, EIT
Lucas Clapp

Minnehaha Creek Watershed District

File: 227704758 Date: August 17, 2022

Reference: Lamplighter Pond Feasibility Study

INTRODUCTION

Minnehaha Creek Watershed District (MCWD) hired Stantec to study the feasibility of installing a manufactured treatment device (MTD) to improve the quality of water discharging from Lamplighter Pond in St. Louis Park (Figure 1). In studying the feasibility, Stantec prepared this memorandum and the attached design plans to summarize water quality performance, site design, and the project's estimated cost.



Figure 1: Lamplighter Pond MTD Project Location Map

Reference: Lamplighter Pond Feasibility Study

BACKGROUND

In 2018, the MCWD Board of Managers approved a variance for Lifetime Fitness to contribute a fee in lieu of constructing a stormwater control measure (SCM) at their site in St. Louis Park. The variance condition states that the stormwater management system must remove of 7.2-lbs TP and abstract 28,734-cf of stormwater runoff volume on an average annual basis. Since approving the variance, MCWD has evaluated several potential sites and SCMs on public and private property in the Twin Lake Watershed. Due to poorly infiltrating soils and the potential for soil contamination, the City and MCWD staff concluded that the preferred SCM is an MTD adjacent to Lamplighter Pond. Since the selected SCM is filtration, the required treatment volume doubles to 57,468-cf per MCWD rules.

MTD OPTIONS

An existing lift station functions as the primary outlet of Lamplighter Pond. First, a pump pulls stormwater from the pond through a screening manhole that removes large floatables and debris. Stormwater then gravity drains from the screening manhole to the lift station wet well where it is pumped out of the system through a force main.

The MTD will have a newly installed lift station to pump water to a Contech StormFilter (MTD). The system will pull water from the existing screening manhole to a new wet well with trash basket. The lift station wet well will pump water to the StormFilter unit. The unit is an underground concrete rectangular chamber and will utilize filtration through 27" PhosphoSorb media Cartridges. The filter will drain water back into Lamplighter Pond via gravity. A virtual meeting with MCWD and City staff determined the preferred approach would be to utilize a separate 480V service and control system to operate the new lift station. See Table 1 for a summary of the three MTD sizes considered. Influent TP concentrations, TP removals, and annual cost per pound TP removed were calculated using the following assumptions:

- TP influent concentration from watershed assumed to be 0.37 mg/L based on available field data
- StormFilter TP removal efficiency assumed to be 70-percent based on available field data
 - 80-percent particulate phosphorus (PP) removed
 - 40-percent dissolved phosphorus (DP) removed
- PP:DP ratio of 75:25

Table 1: Contech StormFilter Design Considerations

Option	# Cartridges	Vault Dimensions	Maximum Treatment Flow Rate (cfs)	Estimated TSS Mass Capacity (lbs)	Estimated Volume Treated (cf)	Estimated TP Influent (lbs)	Estimated TP removal (lbs)	Estimated Cost	Estimated Annual Maint Cost	Estimated 20-yr life cycle cost	Estimated Annual \$/lb TP removed
1	(29) 27" PhosphoSorb cartridges @ 1 gpm/sf	8x14	0.73	1566	441408	10.2	7.1	\$103,020	\$8,265	\$268,320	\$1,881
2	(54) 27" PhosphoSorb cartridges @ 1 gpm/sf	8x22	1.35	2916	827640	19.1	13.4	\$188,000	\$14,580	\$479,600	\$1,793
3	(101) 27" PhosphoSorb cartridges @ 1gpm/sf	11x29	2.53	5454	1555963	35.9	25.1	\$222,000	\$27,270	\$767,400	\$1,527

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Reference: Lamplighter Pond Feasibility Study

The number of cartridges and pump flow rate affect the material cost, TP removal, and maintenance costs for the three options listed above. The “Estimated Cost” column is for the StormFilter only; it does not include additional construction costs. Option 1 can be considered the “baseline” to satisfy project requirements. Alternatively, Options 2 or 3 could be selected to achieve greater TP removal if funding were available for the increased construction and maintenance costs.

MTD PERFORMANCE & COST

The list below summarizes the total construction cost and expected TP removal for the three options. For each of the three options, the pump would need to operate for approximately 170-hours between March and October (months with above freezing temperatures) to achieve the estimated TP removals. The pump will need to cycle on and off throughout the year, independent of rain events, to allow the StormFilter cartridges dry out in order to maintain the anticipated TP removal efficiencies presented in Table 1. The actual pump operating schedule will be coordinated with MCWD and City during final design. Refer to Appendix A for detailed opinions of probable cost for each option. Stantec has shared the annual maintenance costs listed with City staff for verification against a similar system elsewhere in the city. For all options, we estimate final design, bidding, and construction observation will cost an additional \$50,000.

Option 1

- 7.2 lb/yr TP removed
- \$320,000 construction cost
- \$8,500 annual maintenance cost

Option 2

- 13.4 lb/yr TP removed
- \$450,000 construction cost
- \$14,500 annual maintenance cost

Option 3

- 25.1 lb/yr TP removed
- \$500,000 construction cost
- \$27,000 annual maintenance cost

CITY REVIEW & COMMENTS

City of St. Louis Park staff reviewed a draft of this feasibility study and agreed with the MTD option and its placement within city-owned property. However, City staff were concerned about the maintenance and cost of the additional lift station necessary to get water into the MTD.

Therefore, City staff recommended re-locating the MTD to a location downstream at the point of discharge for the existing lift station. This change would avoid the cost of the lift station and additional maintenance commitment. City staff identified the eastern boulevard of Nevada Avenue adjacent to the Northside Park parking lot. This is the discharge location of the Lamplighter Pond forcemain and where it changes to gravity flow.

Reference: Lamplighter Pond Feasibility Study

STANTEC REVIEW OF NEW LOCATION

The new location was not part of Stantec's scope of work for this study, so we conducted an abbreviated hydraulic review to determine the viability of the new location. Using City-provided design plans, we evaluated how water could be diverted from the outlet of the forcemain into the MTD and back into the gravity storm sewer. Our findings include:

- Elevations are problematic. Approximately 2.5 ft of fill is necessary to increase the outlet elevation of the forcemain and provide sufficient drop for filtration through the MTD. Coordination with the City is necessary to determine feasibility of proposed grading with the surrounding parking lot, sidewalk, road, trees, etc.
- A more detailed review of the existing lift station pump curves is necessary. There does not appear to be a significant concern, but there would likely be a slight reduction in pumping capacity due to the addition of 2.5 feet of static head.
- Figures 2 and 3 show the potential layout at the discharge end of the forcemain.
- Stantec and City staff visited the site on August 5, 2022 to further review installation feasibility.

Observations from that site visit include:

- The MTD vault and diversion manhole will likely stick out of the ground approximately 2.5 to 3 feet. This is acceptable to the city.
- Vault installation will likely require reconstruction of the parking lot surrounding the peninsula where the vault will be installed.
- Removal of one tree appears necessary. This tree will have to be replaced per City ordinance.
- Raising the forcemain discharge pipe closer to the ground surface may allow freezing temperatures to limit performance of the lift station. Therefore, the City recommends:
 - Installation of a valve and bypass pipe upstream of the diversion manhole so the MTD can be taken off-line during the winter and the forcemain may operate as it does today during frozen temperatures.
 - Insulation of the new, raised forcemain pipe and/or build-up additional ground surrounding the diversion manhole to further insulate the pipe.

NEW LOCATION PERFORMANCE & COST

Stantec re-evaluated the expected TP removal, annual maintenance cost, and total construction cost for the new location. Like the prior analysis, we evaluated three options, but this time with the same level of TP removal (7.2 lb/yr) and variable maintenance costs based on influent concentrations. As listed below, Option 4 is based on an assumed TSS influent concentration of 25 mg/L. This is the typical design approach for runoff into the MTD; however, this application is a bit different because water going through the filter will already have been treated in the Lamplighter Pond. Therefore, MTD loading and maintenance may not be driven by TSS influent.

An alternative approach is to design based on the MTD's capacity to remove dissolved phosphorus. With this approach, it's appropriate to evaluate performance using a range of influent TP concentrations because the maintenance trigger will be more about the sorption capacity in the media rather than surface clogging by TSS. Therefore, Option 5 considers a higher influent concentration (more available to remove), and Option 6 considers a lower influent concentration (less, harder to remove). Additionally, Option 6 may allow for the maintenance interval to be extended to two years. The MTD vendor we have coordinated with reports that a similar system in Capitol Region Watershed District is located downstream of pretreatment and a 10' pipe gallery. The MTD lasted approximately 1.5 years before being maintained, and it was undersized by a factor of 2. (So, if sized appropriately it may have lasted 3 years.)

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Reference: Lamplighter Pond Feasibility Study

Refer to Appendix A for detailed opinions of probable cost for each option. For all options, we estimate final design, bidding, and construction observation will cost an additional \$50,000.

Option 4

- 7.2 lb/yr TP removed
- Max treatment flow = 0.73 cfs
- \$271,000 construction cost
- \$8,300 annual maintenance cost

Option 5

- 7.2 lb/yr TP removed
- Max treatment flow = 0.80 cfs
- \$289,000 construction cost
- \$9,200 annual maintenance cost

Option 6

- 7.2 lb/yr TP removed
- Max treatment flow = 1.55 cfs
- \$469,000 construction cost
- \$17,400 annual maintenance cost (It may be appropriate to spread over 2-3 years.)

Table 2: Contech StormFilter Design Considerations for Options 4-6

Option	# 27" PhosphoSorb Cartridges	Vault Dimensions	Maximum Treatment Flow Rate (cfs)	Estimated TSS Mass Capacity (lbs)	Estimated Volume Treated (cf)	Estimated TP Influent (lbs)	Estimated TP removal (lbs)	Estimated Cost	Cartridge Replacement Cost	Estimated Maintenance Interval (yrs)	Estimated 20-yr life cycle cost	Estimated Annual \$/lb TP removed	Sizing Notes
4	29	8x14	0.73	1566	1200000	13.48	7.2	\$103,020	\$8,265	1.0	\$268,320	\$1,871	25 mg/L TSS mass capacity
5	32	8x14	0.80	1728	1200000	13.48	7.2	\$113,710	\$9,120	1.0	\$296,110	\$2,056	High end of lab TP capacity
6	61	8x24	1.55	3348	1200000	13.48	7.2	\$211,600	\$17,385	1.0	\$559,300	\$3,884	Low end of lab TP capacity

PROJECT SCHEDULE

If MCWD and the City wish this project to move forward, we have outlined an approximate schedule below:

- September – November: Final design
- December – January: Project bidding
- Spring – Summer 2023: Construction
- August 27, 2023: Deadline for MCWD to order project per agreement with Lifetime

NEXT STEPS

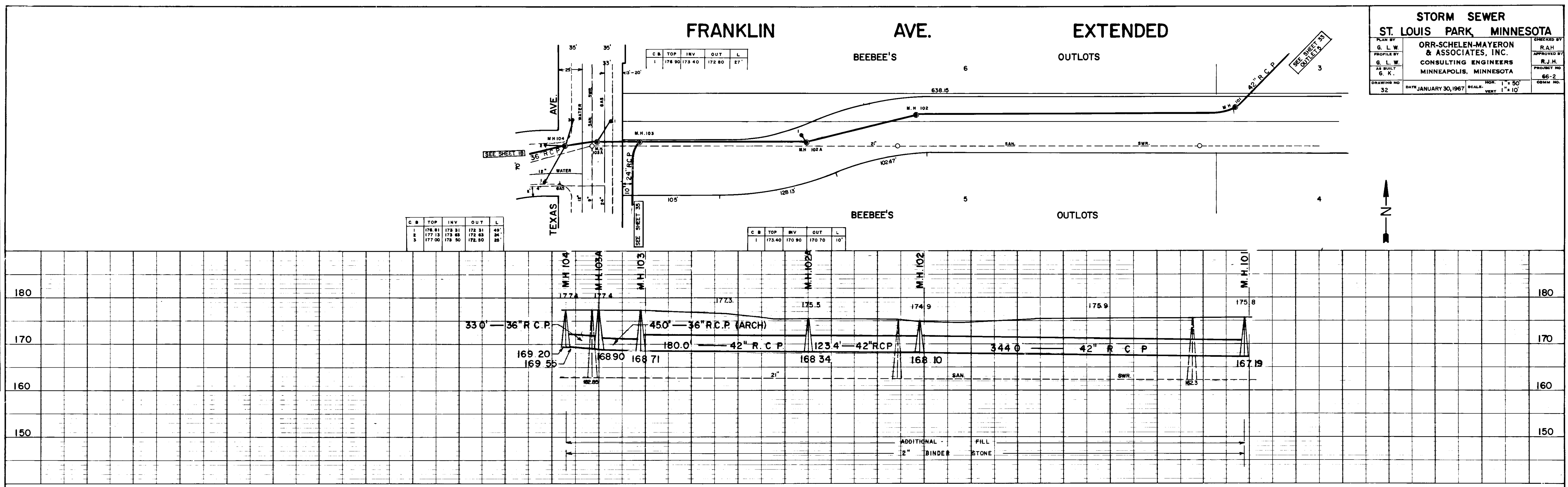
Stantec understands that MCWD and City staff will consider this memo and evaluate Options 4-6 to determine the final design. Once decided, Stantec will provide MCWD with a proposal to prepare the final design and bidding documents.

NORTHSIDE PARK CONCEPT MTD DESIGN

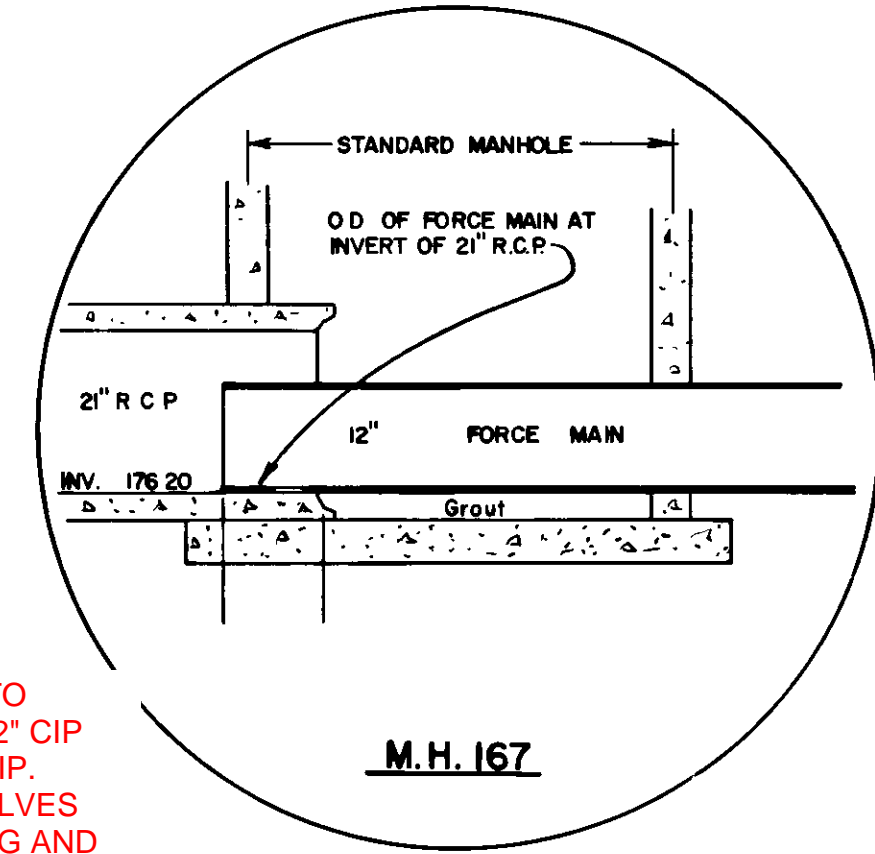
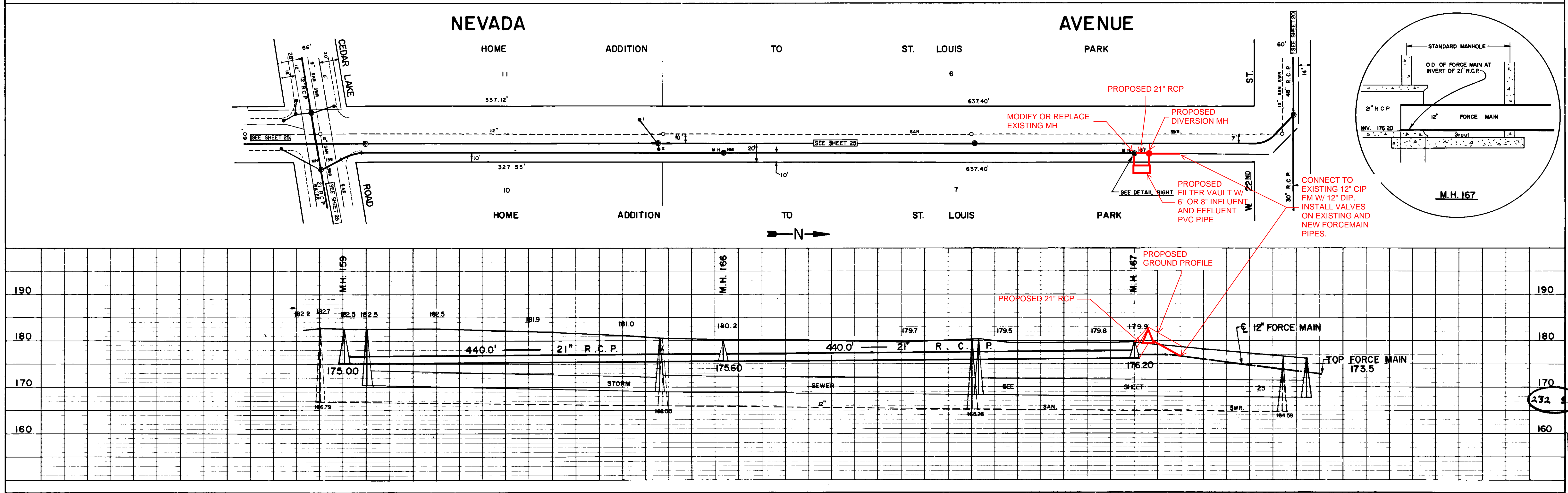
DRAWING NUMBER
232-SS

STORM SEWER		ST. LOUIS PARK, MINNESOTA	
PLAN BY G. L. W.	ORR-SCHELEN-MAYERON & ASSOCIATES, INC.	CHECKED BY R.A.H.	APPROVED BY R.J.H.
PROFILE BY G. L. W.	CONSULTING ENGINEERS MINNEAPOLIS, MINNESOTA	PROJECT NO. 65-2	COMM. NO.
DRAWING NO. 32	DATE JANUARY 30, 1967	SCALE HOR. 1" = 50' VERT. 1" = 10'	

PLAN
SURVEYED
PLOTTED
NOTE BOOK NO. OF ANY CHECKED
NO.



PROFILE
SURVEYED
PLOTTED
NOTE BOOK NO. OF ANY CHECKED
NO.



DRAWING NUMBER
232-SS
STORM SEWER
FRANKLIN EXT., NEVADA

Influent pipe size and weir heights (calculated as head requirement using hazen-williams) required for each design flow:

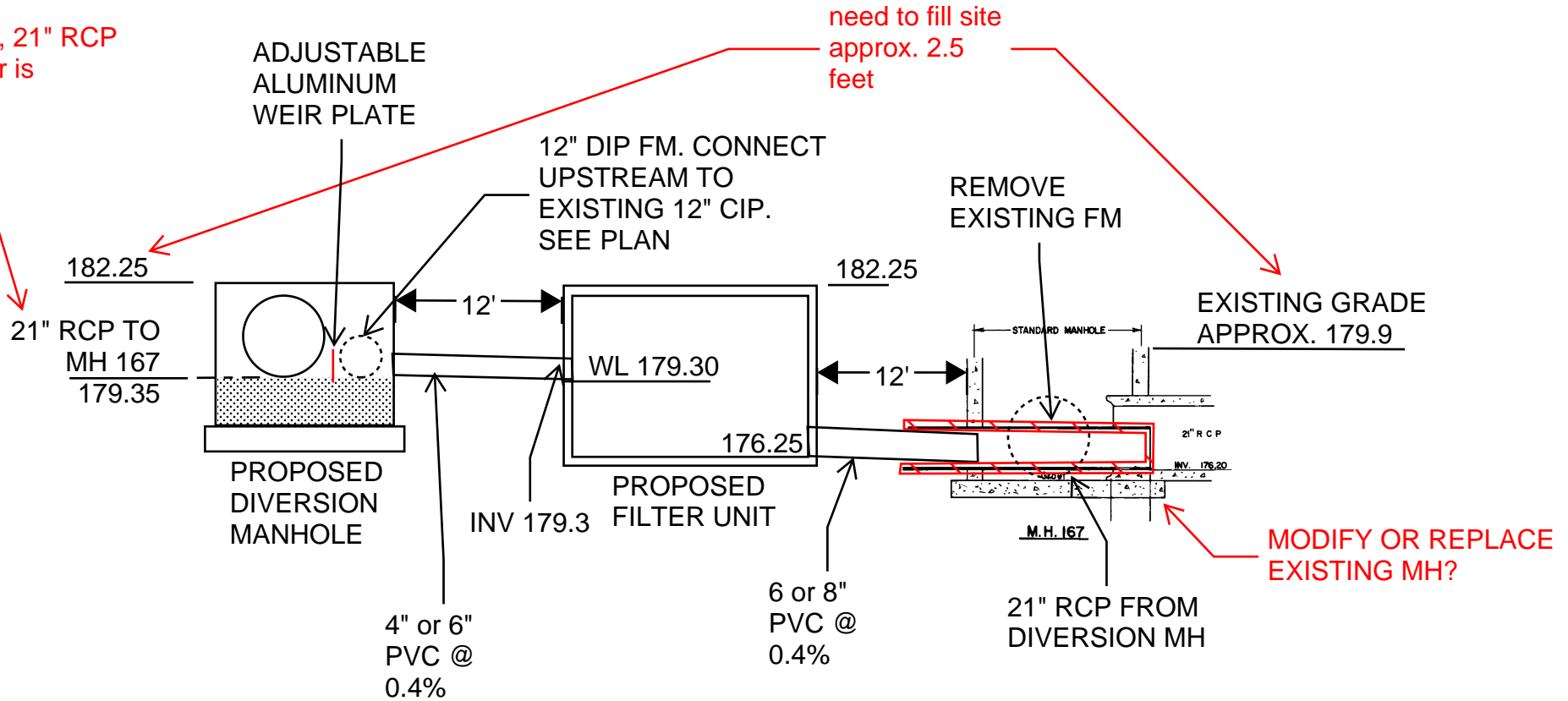
0.73 cfs - 4" pipe; 7.5" weir

1.35 cfs - 4" pipe; 23" weir

2.53 cfs - 6" pipe; 10.5" weir

Per Forterra, 21" RCP bell diameter is approx. 30"

need to fill site approx. 2.5 feet



Stormtech Filter Design Requirements:
 Bottom Inv. = minus 6.5 feet from top (includes 6" concrete top)
 Water level = 3.05 feet above bottom inv
 Design flows = 0.73 cfs, 1.35 cfs, or 2.53 cfs
 Require time to allow filters to dry out

CONCEPT SKETCH - NOT TO SCALE

APPENDIX A.1

Option 1: Opinion of Probable Cost

Lamplighter Pond Filter System					
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST
1	Mobilization	1	LS	\$ 27,000.00	\$ 27,000.00
2	Transplant Tree	1	EA	\$ 750.00	\$ 750.00
3	Sawcut & Remove Concrete Curb	51	LF	\$ 12.00	\$ 612.00
4	Remove & Replace Asphalt Trail	47	SY	\$ 60.00	\$ 2,800.00
5	Sawcut & Remove 8" Concrete Pavement	222	SF	\$ 2.78	\$ 616.67
6	Common Excavation (CV, offsite)	62	CY	\$ 25.00	\$ 1,550.00
7	Lift Station Pump and Appurtenances	1	LS	\$ 69,000.00	\$ 69,000.00
8	84" Dia. Precast Lift Station Structure	1	LS	\$ 17,500.00	\$ 17,500.00
9	6" C900 Forcemain	25	LF	\$ 50.00	\$ 1,250.00
10	10" PVC Gravity Pipe	40	LF	\$ 60.00	\$ 2,400.00
11	Connect 10" Pipe to Ex. Screening Manhole	1	EA	\$ 5,000.00	\$ 5,000.00
12	Connect 10" Pipe to Ex. Lift Station Wet Well	1	EA	\$ 2,500.00	\$ 2,500.00
13	Concrete Curb & Gutter (match existing)	51	LF	\$ 55.00	\$ 2,805.00
14	8" Reinforced Concrete Pavement	222	SF	\$ 12.00	\$ 2,664.00
15	StormFilter Vault & Cartridges	1	EA	\$ 134,000.00	\$ 134,000.00
16	Class 5	15	TON	\$ 55.00	\$ 821.33
17	Site Electrical and Controls Programming	1	LS	\$ 15,000.00	\$ 15,000.00
18	Sediment Control Log - Type Compost	90	LF	\$ 4.50	\$ 405.00
19	Silt Fence	125	LF	\$ 4.00	\$ 500.00
20	Salvage & respread topsoil	1	LS	\$ 1,000.00	\$ 1,000.00
21	MN State Seed Mix 25-131 (Low Maintenance Turf)	11	LB	\$ 7.50	\$ 82.50
22	Erosion Control Blanket Category 3N, 2S	212	SY	\$ 4.00	\$ 848.89
TOTAL					\$ 289,105.39
CONTINGENCY (10% ASSUMED)					\$ 29,000.00
TOTAL					\$ 318,105.39

APPENDIX A.2

Option 2: Opinion of Probable Cost

Lamplighter Pond Filter System					
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST
1	Mobilization	1	LS	\$ 38,000.00	\$ 38,000.00
2	Transplant Tree	1	EA	\$ 750.00	\$ 750.00
3	Sawcut & Remove Concrete Curb	51	LF	\$ 12.00	\$ 612.00
4	Remove & Replace Asphalt Trail	47	SY	\$ 60.00	\$ 2,800.00
5	Sawcut & Remove 8" Concrete Pavement	222	SF	\$ 2.78	\$ 616.67
6	Common Excavation (CV, offsite)	62	CY	\$ 25.00	\$ 1,550.00
7	Lift Station Pump and Appurtenances	1	LS	\$ 69,000.00	\$ 69,000.00
8	84" Dia. Precast Lift Station Structure	1	LS	\$ 17,500.00	\$ 17,500.00
9	6" C900 Forcemain	25	LF	\$ 50.00	\$ 1,250.00
10	10" PVC Gravity Pipe	40	LF	\$ 60.00	\$ 2,400.00
11	Connect 10" Pipe to Ex. Screening Manhole	1	EA	\$ 5,000.00	\$ 5,000.00
12	Connect 10" Pipe to Ex. Lift Station Wet Well	1	EA	\$ 2,500.00	\$ 2,500.00
13	Concrete Curb & Gutter (match existing)	51	LF	\$ 55.00	\$ 2,805.00
14	8" Reinforced Concrete Pavement	222	SF	\$ 12.00	\$ 2,664.00
15	StormFilter Vault & Cartridges	1	EA	\$ 245,000.00	\$ 245,000.00
16	Class 5	15	TON	\$ 55.00	\$ 821.33
17	Site Electrical and Controls Programming	1	LS	\$ 15,000.00	\$ 15,000.00
18	Sediment Control Log - Type Compost	90	LF	\$ 4.50	\$ 405.00
19	Silt Fence	125	LF	\$ 4.00	\$ 500.00
20	Salvage & respread topsoil	1	LS	\$ 1,000.00	\$ 1,000.00
21	MN State Seed Mix 25-131 (Low Maintenance Turf)	11	LB	\$ 7.50	\$ 82.50
22	Erosion Control Blanket Category 3N, 2S	212	SY	\$ 4.00	\$ 848.89
TOTAL					\$ 411,105.39
CONTINGENCY (10% ASSUMED)					\$ 42,000.00
TOTAL					\$ 453,105.39

APPENDIX A.3

Option 3: Opinion of Probable Cost

Lamplighter Pond Filter System					
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST
1	Mobilization	1	LS	\$ 42,000.00	\$ 42,000.00
2	Transplant Tree	1	EA	\$ 750.00	\$ 750.00
3	Sawcut & Remove Concrete Curb	51	LF	\$ 12.00	\$ 612.00
4	Remove & Replace Asphalt Trail	47	SY	\$ 60.00	\$ 2,800.00
5	Sawcut & Remove 8" Concrete Pavement	222	SF	\$ 2.78	\$ 616.67
6	Common Excavation (CV, offsite)	62	CY	\$ 25.00	\$ 1,550.00
7	Lift Station Pump and Appurtenances	1	LS	\$ 69,000.00	\$ 69,000.00
8	84" Dia. Precast Lift Station Structure	1	LS	\$ 17,500.00	\$ 17,500.00
9	6" C900 Forcemain	25	LF	\$ 50.00	\$ 1,250.00
10	10" PVC Gravity Pipe	40	LF	\$ 60.00	\$ 2,400.00
11	Connect 10" Pipe to Ex. Screening Manhole	1	EA	\$ 5,000.00	\$ 5,000.00
12	Connect 10" Pipe to Ex. Lift Station Wet Well	1	EA	\$ 2,500.00	\$ 2,500.00
13	Concrete Curb & Gutter (match existing)	51	LF	\$ 55.00	\$ 2,805.00
14	8" Reinforced Concrete Pavement	222	SF	\$ 12.00	\$ 2,664.00
15	StormFilter Vault & Cartridges	1	EA	\$ 289,000.00	\$ 289,000.00
16	Class 5	15	TON	\$ 55.00	\$ 821.33
17	Site Electrical and Controls Programming	1	LS	\$ 15,000.00	\$ 15,000.00
18	Sediment Control Log - Type Compost	90	LF	\$ 4.50	\$ 405.00
19	Silt Fence	125	LF	\$ 4.00	\$ 500.00
20	Salvage & respread topsoil	1	LS	\$ 1,000.00	\$ 1,000.00
21	MN State Seed Mix 25-131 (Low Maintenance Turf)	11	LB	\$ 7.50	\$ 82.50
22	Erosion Control Blanket Category 3N, 2S	212	SY	\$ 4.00	\$ 848.89
TOTAL					\$ 459,105.39
CONTINGENCY (10% ASSUMED)					\$ 46,000.00
TOTAL					\$ 505,105.39

APPENDIX A.4

Option 4: Opinion of Probable Cost

Options 4. Northside Park Filter System					
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST
1	Mobilization	1	LS	\$ 23,000.00	\$ 23,000.00
2	Remove Concrete Sidewalk	22	SY	\$ 20.00	\$ 444.44
3	Sawcut & Remove Concrete Curb	110	LF	\$ 12.00	\$ 1,320.00
4	Concrete Sidewalk	200	SF	\$ 25.00	\$ 5,000.00
5	Remove & Replace Bituminous Street	1	LS	\$ 10,000.00	\$ 10,000.00
6	Remove & Replace Bituminous Parking Lot	1	LS	\$ 5,000.00	\$ 5,000.00
7	Remove Tree	1	EA	\$ 400.00	\$ 400.00
8	21" RCP	16	LF	\$ 100.00	\$ 1,600.00
9	Common Excavation (CV, offsite)	29	CY	\$ 25.00	\$ 713.13
10	5' Diversion MH	1	EA	\$ 15,000.00	\$ 15,000.00
11	6" C-900 PVC	24	LF	\$ 75.00	\$ 1,800.00
12	Modify Existing MH 167	1	EA	\$ 5,000.00	\$ 5,000.00
13	Install New Forcemain	33	LF	\$ 100.00	\$ 3,300.00
14	Reconnect Existing Forcemain	33	LF	\$ 100.00	\$ 3,300.00
15	Install Valve	2	EA	\$ 3,000.00	\$ 6,000.00
16	Concrete Curb & Gutter (match existing)	110	LF	\$ 55.00	\$ 6,050.00
17	StormFilter Vault & Cartridges	1	EA	\$ 155,000.00	\$ 155,000.00
18	Class 5	15	TON	\$ 55.00	\$ 821.33
19	Sediment Control Log - Type Compost	90	LF	\$ 4.50	\$ 405.00
20	Replace Tree	1	EA	\$ 500.00	\$ 500.00
21	Salvage & respread topsoil	1	LS	\$ 1,000.00	\$ 1,000.00
22	MN State Seed Mix 25-131 (Low Maintenance Turf)	10	LB	\$ 7.50	\$ 75.00
23	Erosion Control Blanket Category 3N, 2S	22	SY	\$ 5.00	\$ 111.11
TOTAL					\$ 245,840.01
CONTINGENCY (10% ASSUMED)					\$ 25,000.00
TOTAL					\$ 270,840.01

APPENDIX A.5

Option 5: Opinion of Probable Cost

Option 5. Northside Park Filter System					
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST
1	Mobilization	1	LS	\$ 24,000.00	\$ 24,000.00
2	Remove Concrete Sidewalk	22	SY	\$ 20.00	\$ 444.44
3	Sawcut & Remove Concrete Curb	110	LF	\$ 12.00	\$ 1,320.00
4	Concrete Sidewalk	200	SF	\$ 25.00	\$ 5,000.00
5	Remove & Replace Bituminous Street	1	LS	\$ 10,000.00	\$ 10,000.00
6	Remove & Replace Bituminous Parking Lot	1	LS	\$ 5,000.00	\$ 5,000.00
7	Remove Tree	1	EA	\$ 400.00	\$ 400.00
8	21" RCP	16	LF	\$ 100.00	\$ 1,600.00
9	Common Excavation (CV, offsite)	29	CY	\$ 25.00	\$ 713.13
10	5' Diversion MH	1	EA	\$ 15,000.00	\$ 15,000.00
11	6" C-900 PVC	24	LF	\$ 75.00	\$ 1,800.00
12	Modify Existing MH 167	1	EA	\$ 5,000.00	\$ 5,000.00
13	Install New Forcemain	33	LF	\$ 100.00	\$ 3,300.00
14	Reconnect Existing Forcemain	33	LF	\$ 100.00	\$ 3,300.00
15	Install Valve	2	EA	\$ 3,000.00	\$ 6,000.00
16	Concrete Curb & Gutter (match existing)	110	LF	\$ 55.00	\$ 6,050.00
17	StormFilter Vault & Cartridges	1	EA	\$ 170,000.00	\$ 170,000.00
18	Class 5	15	TON	\$ 55.00	\$ 821.33
19	Sediment Control Log - Type Compost	90	LF	\$ 4.50	\$ 405.00
20	Replace Tree	1	EA	\$ 500.00	\$ 500.00
21	Salvage & respread topsoil	1	LS	\$ 1,000.00	\$ 1,000.00
22	MN State Seed Mix 25-131 (Low Maintenance Turf)	10	LB	\$ 7.50	\$ 75.00
23	Erosion Control Blanket Category 3N, 2S	22	SY	\$ 5.00	\$ 111.11
TOTAL					\$ 261,840.01
CONTINGENCY (10% ASSUMED)					\$ 27,000.00
TOTAL					\$ 288,840.01

APPENDIX A.6

Option 6: Opinion of Probable Cost

Option 6. Northside Park Filter System					
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST
1	Mobilization	1	LS	\$ 39,000.00	\$ 39,000.00
2	Remove Concrete Sidewalk	22	SY	\$ 20.00	\$ 444.44
3	Sawcut & Remove Concrete Curb	110	LF	\$ 12.00	\$ 1,320.00
4	Concrete Sidewalk	200	SF	\$ 25.00	\$ 5,000.00
5	Remove & Replace Bituminous Street	1	LS	\$ 10,000.00	\$ 10,000.00
6	Remove & Replace Bituminous Parking Lot	1	LS	\$ 5,000.00	\$ 5,000.00
7	Remove Tree	1	EA	\$ 400.00	\$ 400.00
8	21" RCP	16	LF	\$ 100.00	\$ 1,600.00
9	Common Excavation (CV, offsite)	46	CY	\$ 25.00	\$ 1,150.00
10	5' Diversion MH	1	EA	\$ 15,000.00	\$ 15,000.00
11	6" C-900 PVC	24	LF	\$ 75.00	\$ 1,800.00
12	Modify Existing MH 167	1	EA	\$ 5,000.00	\$ 5,000.00
13	Install New Forcemain	33	LF	\$ 100.00	\$ 3,300.00
14	Reconnect Existing Forcemain	33	LF	\$ 100.00	\$ 3,300.00
15	Install Valve	2	EA	\$ 3,000.00	\$ 6,000.00
16	Concrete Curb & Gutter (match existing)	110	LF	\$ 55.00	\$ 6,050.00
17	StormFilter Vault & Cartridges	1	EA	\$ 318,000.00	\$ 318,000.00
18	Class 5	15	TON	\$ 55.00	\$ 821.33
19	Sediment Control Log - Type Compost	90	LF	\$ 4.50	\$ 405.00
20	Replace Tree	1	EA	\$ 500.00	\$ 500.00
21	Salvage & respread topsoil	1	LS	\$ 1,000.00	\$ 1,000.00
22	MN State Seed Mix 25-131 (Low Maintenance Turf)	10	LB	\$ 7.50	\$ 75.00
23	Erosion Control Blanket Category 3N, 2S	22	SY	\$ 5.00	\$ 111.11
TOTAL					\$ 425,276.89
CONTINGENCY (10% ASSUMED)					\$ 43,000.00
TOTAL					\$ 468,276.89



Stantec Consulting Services Inc.
2080 Wooddale Drive, Suite 100
Woodbury MN 55125-2920

August 17, 2022

Project/File: 227704758

Ms. Kayla Westerlund
Minnehaha Creek Watershed District
15320 Minnetonka Blvd
Minnetonka, MN 55345

Dear Kayla,

Reference: Proposal to provide engineering services for the Northside Park MTD final design, bidding, and construction

Thank you for this opportunity to submit this proposal to continue assisting MCWD with installation of a manufactured treatment device (MTD). As you know, the project originated in 2018 when Lifetime Fitness requested MCWD to approve a fee-in-lieu of on-site stormwater management at their St. Louis Park facility. Since that time, Wenck and now Stantec, has been assisting MCWD and the City of St. Louis Park to identify a practical and cost-effective stormwater practice in the Twin Lake watershed. The recently completed "Lamplighter Pond Feasibility Study" recommended installation of an MTD adjacent to Northside Park in St. Louis Park.

1.1 Budget, Schedule & Deliverables

- **Fee estimate** The cost for Stantec to complete the scope of work detailed below is \$52,200. Subtotals by task are provided below.
- **Schedule** Final design and construction will follow this schedule:
 - September – November 2022: Final design
 - December – January 2023: Project bidding
 - Spring – Summer 2023: Construction
 - August 27, 2023: Deadline for MCWD to order project per agreement with Lifetime
- **Deliverables**
 - a. Final construction plans.
 - b. Project manual for use in bidding and construction.
 - c. Record plans documenting changes during construction.

Reference: Proposal to provide engineering services for the Northside Park MTD final design, bidding, and construction

Scope of Work

- **Task 1: Site Survey, \$2,000**
 - a. Conduct topographic and utility survey of project area.
 - b. Analyze and determine locations of any rights of way, easements or other recorded encumbrances based on the title research as previously noted.
 - c. Locate public and private utility lines marked as a result of a utility locate request and based on visible above ground evidence and plans provided.
 - d. Determine invert elevation and pipe sizes of all storm and sanitary structures within the survey area.
 - e. Record tree diameter at breast height (DBH) and coordinates for trees within the project site. The City of St. Louis Park Tree Inventory indicates one tree within the likely project area is an Accolade Elm.

- **Task 2: Final Design, \$17,200**
 - a. 60%, 90% and 100% plan sets to include existing conditions, removals, erosion control, Stormwater Pollution Prevention Plan (SWPPP), site plan, grading and drainage, and details.
 - b. Project manual using the Minnehaha Creek Watershed District template/format.
 - c. 60% and 100% Engineer's opinion of probable cost.

- **Task 3: Project Bidding, \$9,300**
 - a. Managing online "QuestCDN" bidding process.
 - b. Attending and leading onsite pre-bid meeting.
 - c. Addressing contractor questions and issuing addenda.
 - d. Reviewing bids and providing MCWD a recommendation.

- **Task 4: Construction Administration and Observation, \$23,700**
 - a. Leading a preconstruction meeting.
 - b. Review contractor submittals and shop drawings. Submittal reviews will not extend to means, methods, techniques, sequences, or procedures of construction.
 - c. Stake alignment of proposed construction work up to two times.
 - d. Review up to two contractor pay requests.
 - e. Review up to two contractor change order requests.
 - f. Prepare work change directives as required.
 - g. Respond to up to two contractor Requests for Information (RFIs).
 - h. Keep MCWD informed of progress of the work.
 - i. Provide a Resident Project Representative (RPR) to observe progress and quality of the work as it is proceeding.
 - j. We assume the RPR will provide half-time observation (20 hours per week) and work will last approximately four weeks.
 - k. Prepare record plan.

Reference: Proposal to provide engineering services for the Northside Park MTD final design, bidding, and construction

1.2 Exclusions

The below list is a brief, non-comprehensive list of tasks that we recommend be incorporated in a future scope of work but are excluded from our current proposed scope of work:

- Permitting: except for the SWPPP noted above, we assume that all permit applications and submittals will be completed by City staff or the contractor (i.e., grading, drainage, stormwater management, erosion control, floodplain).
- Coordination with residents and adjacent property owners
- Coordination with partner agencies

1.3 Project Team

The following staff have been selected to execute the Scope of Work.

- Project Manager Todd Shoemaker
- Water Resources Brendan Barth, Louis Sigtermans
Engineers
- Senior Water Chris Meehan
Resources
Engineer, Planner

If this proposal is accepted, Stantec will invoice the District monthly based on time and materials in accordance with our current Master Services Contract and the accompanying work order. Stantec will not exceed the authorized budget without obtaining written approval from the District.

On behalf of Stantec, thank you for this opportunity to continue working with the District. Should you have any questions or need clarification of anything presented in the attached proposal, please do not hesitate to call or email me.

Regards,

STANTEC CONSULTING SERVICES INC.

Todd Shoemaker PE (MN, IA), CFM
Senior Associate, Senior Water Resources Engineer
Phone: (651) 294-4585
Mobile: 612-414-7166
todd.shoemaker@stantec.com



5005 Minnetonka Blvd.
St. Louis Park, MN 55416
September 14, 2022

Re: Lamplighter Pond Water Quality Project

Dear Ms. Keller:

This letter is intended to summarize discussion and coordination that has occurred among City of St. Louis Park ("City") and Minnehaha Creek Watershed District ("District") staff to identify and evaluate the Lamplighter Pond Water Quality Project, and to outline the roles and responsibilities of the City and District in advancing the project. It is my understanding that Erick Francis, the City Water Resources Manager, has been a resource to you on this work and will bring you this letter. Please review the proposed terms of project implementation and, if you find that they reflect the position of City staff, provide a countersignature below.

On September 22, 2022, District staff will present the project to our Board of Managers. This indication of City concurrence at a staff level will be an important element in advising the Board that we have a feasible project, and allow us to request that the Board schedule a public hearing for its October 20, 2022 meeting and, at that time, establish the project by resolution. This action will allow the District to commit and disburse funds to the City for project design and construction.

On receipt of your signature, as well, District legal counsel will draft a project agreement, consistent with the terms of this letter, for review by City staff and counsel. The goal here is to produce an agreement that you can recommend to your Council at its October 3, 2022 meeting, and that District staff can present to its Board.

BACKGROUND

In 2018, Lifetime Fitness ("Lifetime") applied to the District for a permit to expand its St. Louis Park facility. As a result of site limitations, the Board approved a variance allowing Lifetime to submit an escrow in the amount of \$490,000, in lieu of constructing stormwater management facilities on site. The escrow agreement affords the District the right to use the escrow to identify, design, construct and maintain a stormwater treatment practice within the relevant stormwater subwatershed to achieve abstraction of 28,734 cubic feet of stormwater runoff volume annually, or the equivalent annual removal of 7.2 pounds of total phosphorus (TP). Subsequently, the District engineer, Stantec, evaluated potential sites. On the basis of Stantec's work, District and City staff identified a location adjacent to the Lamplighter Pond outlet lift station for installation of a stormwater filtration device.

Initially, Stantec proposed to install a second lift station to pump water to a Contech StormFilter (CSF). The CSF unit is an underground concrete rectangular vault that uses 27" PhosphoSorb media cartridges for filtration. Maintenance consists principally of cartridge replacement about every 1-3 years. Under this concept, the diverted and filtered water would drain back into Lamplighter Pond via gravity. City staff, however, expressed concern about the cost and maintenance requirements of a second lift station, and suggested placing the CSF downgradient at the point of discharge of the existing lift station. City staff identified a grassed island on the eastern boulevard of Nevada Avenue, adjacent to the Northside Park parking lot, as the site for the CSF vault. District staff find this a suitable location.

We collaborate with public and private partners to protect and improve land and water for current and future generations.



- 5. Each party will bear its own internal and administrative costs to implement the agreement, except as the City's own design or construction costs may be reimbursable under paragraph 4.
- 6. When construction is complete, the parties will do an accounting of project costs and calculate the present value of future maintenance. The District will transfer escrow funds to the City, up to the maintenance present value. The City will bear any future maintenance costs beyond the amount of remaining escrow.
- 7. The design will incorporate public information about the practice, commensurate with its scale and visibility. The information will recognize the participation of Lifetime, as the District and Lifetime may arrange.
- 8. The District will be responsible to coordinate with Lifetime and to ensure that the project is implemented in accordance with the terms of the escrow agreement. The City and the District each will indemnify and hold harmless the other, for its own acts.

The District fully understands that by signing below, you are not committing the City to participation in the project or to any expenditure of City funds. Mutual commitments will become legally binding only on approval of a project agreement by our respective decision-making bodies, and the signing of the agreement. The purpose of this letter is simply to memorialize the intent to proceed collaboratively, and to support our continuing investment of staff and consultant resources as we move forward.

If you concur in the above, please sign below and return a copy of the letter to me. If you would like to discuss or require any further information that the District can provide, please have your staff contact our project manager, Kayla Westerlund, at 952.473.2855, or feel free to contact me directly.

Yours truly,

James Wisker
District Administrator

- c: Kayla Westerlund
- Erick Francis
- Phillip Elkin

Countersigned:

Kayla Westerlund, City Manager
City of St. Louis Park

Date:

9-19-22

Deputy City Manager

We collaborate with public and private partners to protect and improve land and water for current and future generations.