MINNEHAHA CREEK
WATERSHED DISTRICT
QUALITY OF WATER, QUALITY OF LIFE

Meeting: Board of Managers Meeting
Meeting date: 9/9/2021
Agenda Item #: 12.1
Item type: Board Discussion

Title:	**Permit 18-153: LifeTime Fitness Regional Stormwater Planning Update**
Prepared by:	Name: **Erin Manlick** Phone: **952-641-4586** Email: **EManlick@minnehahacreek.org**

Purpose:
To review the progress in identifying potential regional stormwater treatment options which satisfy the terms and goals of the LifeTime Agreement (Attachment A) and determine the Board's interest in advancing the Lamplighter project alternative out of the concept stage into feasibility in partnership with the City of St. Louis Park.

Background:
MCWD – LifeTime Agreement History:

Prior to 2013, Healthy Way of Life I, LLC (the Applicant) had conducted several redevelopment projects at the Life Time Fitness center located at 5525 Cedar Lake Road in St. Louis Park, each requiring a stormwater management permit from the District. In 2013, the Applicant proposed the construction of a parking ramp, which would bring the site's total cumulative disturbance to 6.6 acres, or 64% of the site. At that time, per the common scheme of development provision within MCWD's stormwater management rule, which states that all development that has occurred on a site since January 2005 must be considered in the aggregate when determining treatment scope, the Applicant would have been obligated to provide volume, phosphorus, and rate control for the entire site's impervious surface under the 2013 permit (Permit #13-041). However, due to an error on the part of District staff, the Applicant was only required to provide treatment for the site's additional impervious surface proposed.

Subsequently, in 2018, a building addition was proposed on the site (Permit #18-153). At this time District staff noticed the 2013 error and the gap in required stormwater treatment. Under the 2018 permit application, the Applicant was proposing to reduce the total amount of impervious surface on the parcel. Per the District's stormwater management rule, if a site is greater than 5 acres, and has reached 40% site disturbance, volume control must be provided for the entire site's impervious surface. To meet the District's requirements, 29,950 cubic feet of runoff volume control was required, which corresponds to a phosphorus reduction of 7.5 pounds per year. The only viable option to meet the volume reduction requirement for treating the entire site's impervious was underground storage. Because the site had recently been built out, the Applicant was constrained in their ability to meet the requirement on-site without significant demolition or disruption to improvements made over the previous five years. Consequently, the Applicant worked with MCWD and St. Louis Park staff to explore five potential sites for regional treatment within the Twin Lakes subwatershed. None of these options, identified in the permit report for #18-153 (Attachment B), were determined to be feasible and prudent, therefore the District, the City, and the Applicant were unable to find a collaborative option that would meet the District's rule requirements. As a result, the Applicant applied for a variance to the District's Stormwater Management rule requirements.

In their variance request, the Applicant argued that compliance with the MCWD stormwater management rule would cause an undue hardship for several reasons, including extensive on-site disturbance, site constraints that included probable soil contamination and inability to provide infiltration, and reconfiguration of existing utility lines and site drainage.

The MCWD Board of Managers considered, but did not approve, the variance request at the July 26, 2018 Board Meeting. The Board of Managers tabled the variance request, and instead directed District staff to further evaluate and document potential local and regional treatment options within the Twin Lakes subwatershed. Subsequently, the District Engineer conducted an analysis of 24 potential treatment concepts within the minor subwatershed MC-101. These 24 concepts were evaluated based on phosphorus removal, rate control, abstraction volume, cost, regulatory constraints, maintenance obligations, and the presence of contamination. The findings from this analysis were summarized in an August 7, 2018 memo (Attachment C). In this memo, the District Engineer did not recommend proceeding with any of the initial 24 concepts but found eight worthy of further feasibility analysis. The remaining 16 options were eliminated from consideration based on cost, site constraints, or inability to meet the treatment goals.

On August 9, 2018, District staff briefed the Board of Managers on the additional analysis that had been directed and provided an overview of discussions that had taken place with the Applicant, as well as City of St. Louis Park staff. Based on these discussions, and the District's inability to identify a specific regional treatment option that would satisfy the stormwater management rule requirements, staff proposed a partnership framework with the Applicant that would include the establishment of a $490,000 escrow account funded by the Applicant and held by the District to be used for a future regional stormwater improvement project. The funding amount represented the estimated cost the Applicant would bear to provide on-site stormwater treatment. The Board noted that the proposed partnership framework would address the District's rule requirements, while also demonstrating the Applicant's willingness to work cooperatively with the District to identify a solution that would satisfy all parties. No objections to the proposed framework were raised by the Board of Managers at that meeting. Subsequently, staff worked with the District legal counsel, as well as counsel for the Applicant, to draft a framework that would outline the requirements under which the Board would approve the Applicant's variance request.

On August 23, 2018, the MCWD Board of Managers formally reviewed the findings of the August 2018 study and approved the Applicant's variance request, conditioned on the execution of an agreement (the Agreement) between the District and the Applicant under which the District agreed to use its capacities to identify and implement regional stormwater management that provides an equivalent amount of stormwater treatment that would have been achieved on-site. Under the Agreement, the Applicant agreed to bear the cost of these stormwater facilities, provided that the identification and analysis of potential projects was conducted by the District. The treatment goals outlined within the Agreement include a Total Phosphorus reduction of 7.2 lb/year, and an abstraction volume of 28,734 cf. Under 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. Per the Agreement, the District's review of potential projects initially focused on those within the same minor subwatershed as the St. Louis Park LifeTime Fitness center. Should the District be unable to identify a project within the same minor subwatershed, the District may expand their search to include sites downgradient of the subwatershed outlet.

<u>Planning and Concept Analysis To Date:</u>
Following the Board's approval of Permit #18-153 in August of 2018, staff and the District Engineer conducted additional analysis of the eight options identified through the consideration of the permit. In an effort to focus the scope of review for potential projects, District staff directed the District engineer to concentrate its efforts on simple, cost-effective BMPs that could readily be designed and ordered under the timeline of the Agreement. As a result, four of the eight previously recommended options were removed from consideration, due to the complexity of their design and lower likelihood of their eventual implementation. The results of this analysis were summarized in a July 7, 2020 technical memorandum (Attachment D) to further investigate the remaining four options identified in the 2018 variance analysis memo as warranting further investigation. The 2020 memo reviewed public and private parcels within the Twin Lakes subwatershed (labeled MC-101 in the District's Watershed Management Plan), and also the Lamplighter subwatershed (MC-100) directly west of Twin Lakes. Lamplighter is a formerly landlocked area that discharges into Twin Lakes by means of a pump station. The District engineer considers Lamplighter as functionally a part of the Twin Lakes subwatershed.

In addition to the four previously identified options located in Twin Lakes, 11 treatment options were identified within Lamplighter – three of which were located on public property and were determined to have potential to meet or exceed the goals of the Agreement. The remaining 12 options did not meet the water treatment and budgetary goals of the Agreement and were subsequently removed from consideration in favor of projects that more closely aligned with the

terms of the Agreement. With three viable options on public land identified, District staff met with City Staff from multiple departments, including Water and Sewer, Natural Resources, Parks and Recreation, Public Works, and Community Development, to discuss these options. These three options, which include a filtration basin at Willow Park (2500 Rhode Island Ave. S.), a filtration basin at Hurd Park (7520 Cedar Lake Rd), and an iron enhanced sand filter in a publicly accessible pond (1608 Utah Ave S), are disfavored by City staff due to their locations at popular City parks and open spaces, and the associated risk of public objection to disturbing those areas. Both basins proposed in City parks would require significant tree removal. Per City requirements, tree removal on public land requires a 1:1 caliper inch replacement, which substantially increases the estimated cost for those projects. The proposed iron enhanced sand filter would be located on a pond that is surrounded by residential lots, with limited public access for maintenance and operation. To focus efforts on more feasible projects, District staff asked the City for suggestions of further sites with the potential to meet the Agreement goals, and to be supported by the public. City staff suggested four public sites, all within the Lamplighter drainage area, that they believe could be suitable options for the implementation of a BMP.

As a result of these suggestions, the District Engineer conducted a third study (Attachment E) in June 2021 to investigate the public sites identified by the City of St. Louis Park. These sites include Lamplighter Park, St. Louis Park Middle School, Cedar Knoll Dog Park, and a City-owned lot located at 6211 Cedar Lake Road. Due to poorly infiltrating soils and potential contamination, infiltration is not possible at any of the suggested locations, meaning none of the proposed options would meet the abstraction goals outlined in the Agreement. Of the four sites, the District Engineer has identified two projects with potential to meet the Total Phosphorus reduction goals (7.2 lbs TP/year) – a filtration system located at the lift station of Lamplighter Pond (1800 Pennsylvania Ave S., St. Louis Park – Attachment F) and a filtration basin located at the Cedar Knoll Dog Park (2541 Nevada Ave S. and 2601 Pennsylvania Ave S., St. Louis Park – Attachment G). St. Louis Park Middle School is assessed as unfavorable due to estimated construction costs and significant coordination that would be required with the St. Louis Park School District. The Cedar Lake Road parcel is deemed unfavorable due to high probability of locally contaminated soils. District staff presented the two favored options to City staff, and staff from both organizations visited the sites to discuss site constraints and implementation feasibility. Following these site visits, Cedar Knoll Dog Park was deemed unfavorable due to the significant amount of tree removal required to install a filtration basin, and the likelihood of soil contamination. As a result, the manufactured treatment device (MTD) proposed to provide filtration at the Lamplighter Pond lift station is considered the most viable option of those considered. City staff support this option due to its accessibility, low-risk location, and alignment with the City's Local Water Management Plan goals.

Analysis of Identified Project – Lamplighter Pond Lift Station:

Per the District Engineer's review and initial feasibility study, adding a MTD filtration system to the existing lift station on the southeast corner of Lamplighter Pond is the most viable option of all that have been considered to date. The system, which would treat water that is pumped through the lift station through a series of underground cartridges, may provide up to 60 lbs/year of Total Phosphorus reduction. Lamplighter Pond has a much larger drainage area than the majority of sites that were reviewed, allowing for a greater modeled Total Phosphorus reduction than any other BMP that was considered. The District Engineer estimates the construction cost for the filtration system to be between $400,000 – 650,000. This estimate includes construction, permitting, legal, design, construction oversight, and 30% contingency.

Per the terms of the Agreement, the funds provided by the applicant may be applied to all of the above indicated costs, as well as up to 20 years of operations and maintenance costs incurred by the District, the City, or any other project partner. Phosphorus removal estimates for the MTD are based on devices already implemented and maintained in other City projects. As estimated, the project cost may allow for remaining funds, if any, to be utilized for ongoing maintenance.

The Agreement states that the Applicant will receive technical documents for review before the District Board "approves a project for final design or implementation." To prepare for this, the District Engineer will need to complete a feasibility analysis specific to the Lamplighter Pond BMP that includes technical detail sufficient to provide to both the Applicant and the Board prior to advancing the project to design. At this time, District staff are asking the Board for feedback on moving forward with the Lamplighter Pond BMP. If the Board is in agreement that this project is a viable option, Staff will return to the Board to authorize a feasibility analysis. The objectives of the proposed analysis are to define the immediate feasibility to meet the District's basic obligation to identify a viable project within the five year timeline of the Agreement, and to fine-tune a cost-benefit analysis for the design and implementation of the proposed BMP. The

current project estimate of $400-650,000 presents the possibility of a funding gap that may require bridging from District, City, or grant funding. The most variable cost in the initial estimate is the fluctuating price of filtration cartridges. A feasibility analysis of the BMP will provide staff and the District Engineer a better understanding of water quality treatment potential and correlated expenses, as well as explore cost-sharing opportunities. The most immediate cost is an estimated $81,000 for design and construction engineering, which includes the feasibility study for the proposed filtration system estimated at $25,000.

Summary:

Due to widespread soil contamination and poorly infiltrating soils, as well as the increasingly urbanized landscape, identifying a site capable of incorporating a cost-efficient BMP that meets both water treatment goals has proved challenging. The Lamplighter Pond lift station filtration system is identified as the project most aligned with the goals and terms of the Agreement. The filtration system provides Total Phosphorus reduction that exceeds the goal of the Agreement, is estimated to be constructed within the budget of funds provided by the Applicant, and has the support of City staff. As previously noted, this project does not include an abstraction component, however, the majority of the potential BMPs that have been considered also are 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. Since abstraction is ruled out at almost all locations investigated, the project that provides the most additional Total Phosphorus reduction is the most viable option to be considered. As a result, District staff wish to move forward with the Lamplighter Pond MTD project as the chosen regional treatment option under the terms of the Agreement. Should the Board agree with staff's assessment that the project is the most viable option reviewed to-date, based on the initial analysis that has taken place thus far, staff will return to the Board with a proposed feasibility study scope and a request for authorization.

Supporting documents (list attachments):

A) LifeTime Agreement
B) 18-153 Permit Report
C) 2018 Twin Lakes Study
D) 2020 Twin Lakes and Lamplighter Study
E) 2021 Public Parcel Study
F) Map of Lamplighter Pond
G) Map of Cedar Knoll Dog Park

Attachment A

AGREEMENT
Alternative Stormwater Management Agreement

Minnehaha Creek Watershed District and Life Time, Inc.

This Agreement is entered into by the Minnehaha Creek Watershed District, a political subdivision of the State of Minnesota with powers set forth in Minnesota Statutes chapters 103B and 103D ("District"), and Healthy Way of Life I, LLC, a Delaware Limited Liability Company ("Life Time").

RECITALS

A. Pursuant to rules duly adopted under Minnesota Statutes §103D.341, the District regulates land development to protect water resources. On August 23, 2018, the District Board of Managers ("Board") approved Permit No. 18-153 for a building addition and related development at the Life Time property located at 5525 Cedar Lake Road, St. Louis Park, Minnesota (the "Site").

B. In conjunction with Permit No. 18-153, the Board approved a variance requested by Life Time due to its inability, during the permit term, to meet District stormwater management rules requiring that stormwater management achieve an annual removal of 7.2 pounds of phosphorus and annual abstraction of 28,734 cubic feet. The variance is conditioned on the execution of an agreement between the District and Life Time under which the District will use its capacities to identify and implement regional stormwater management that will provide for these phosphorus removal and volume abstraction outcomes, and Life Time will bear the cost of such facilities.

C. The funds that Life Time is providing under this Agreement are solely to implement the stormwater management that the District rules require as closely as possible, from a subwatershed perspective, to what Life Time would achieve if management on the Site were feasible.

D. On the basis of the record established by the variance request, an alternative approach to substantially meet the phosphorus removal and volume abstraction outcomes required by the District rules was needed to support variance approval. This Agreement memorializes this alternative approach. The intent is that Life Time will achieve the water resource outcomes required by the District rules at its cost, and the District will facilitate this outcome without exposing its general taxpayer to substantial risk or using public funds for private compliance cost.

E. The maximum sum that Life Time will contribute under this Agreement has been determined by the parties as the estimated cost that Life Time would incur to provide for the required stormwater management on the Site. This cost does not include loss of area and other indirect costs that Life Time would incur to manage stormwater on site, all of which contribute to the infeasibility of on-site treatment and the basis for the variance approval.

F. Accordingly, the parties enter into this Agreement for mutual valuable consideration, and intend that it be legally binding.

G. Permit No. 18-153 and the associated variance are attached as Exhibit A and incorporated into this Agreement.

TERMS

Escrow

1. Before Permit No. 18-153 is issued, and as a condition of issuance, Life Time will deliver $490,000 to the District, which the District will place into escrow for its own benefit as obligee (the "Escrow"). The parties will cooperate on the manner of funds transmittal.

2. The Escrow will be subject to the following:

a. The District will maintain a discrete escrow fund and hold or invest the funds in a manner consistent with the applicable requirements of Minnesota Statutes chapter 118A and the District's adopted investment and depository policy, as each may be amended from time to time.

b. In delivering the Escrow, Life Time unconditionally represents that all escrow funds submitted are its funds and that no third party has any right or entitlement thereto, perfected or unperfected. Life Time will remain the title owner of the Escrow, including any accrued interest. All obligations of the District under this Agreement in holding and using the Escrow are to Life Time only.

c. Life Time will not assign or purport to assign any interest in the Escrow to any third party, absent written District approval. The District will continue to recognize Life Time as the title owner of the Escrow, unless and until, in the District's judgment:

(i) Life Time has documented its assignment of escrow funds and agrees to hold the District harmless for handling the funds in accordance with the assignment terms;

(ii) the District is directed otherwise by a court with jurisdiction; or

(iii) the District is otherwise mandated by unclaimed property or other applicable law.

d. Nothing in this Agreement creates any right in any third party as against the District or in any way waives or abridges any immunity, defense or liability limit that the District enjoys under law. Life Time holds the District harmless for, and will defend and indemnify it as to any third-party claims through Life Time relating to, loss in Escrow value, loss of potential interest, early withdrawal penalty or any other economic or other claim related to the Escrow or the District's management thereof, including attorney fees and costs, absent gross negligence by the District or its manager or employee.

Identification of Alternative Stormwater Management

3. The District may use its own staff and may retain professional services to identify and evaluate the feasibility of one or more alternative stormwater management projects.

4. The District's review of potential projects initially will focus on those within the minor subwatershed as defined in the District's watershed management plan. Review, beyond preliminary consideration, outside of the minor watershed will rest on a District Board determination that there is no feasible and sound option within the minor subwatershed to achieve the required outcomes. On this determination, the District may expand its assessment to areas downgradient from the minor subwatershed outlet. "Feasible and sound" means: (a) the level of projected performance is reliable; (b) the District reasonably can expect to acquire the needed property rights, permits and approvals; (c) the estimated cost for the required removal and abstraction outcomes does not exceed the Life Time contribution; and (d) operation and maintenance for the expected project life are reasonable.

5. A decision to proceed with one or more projects utilizing the escrow funds will be made by the District Board on the basis of a finding that the project or projects will provide for some or all of the removal and abstraction outcomes that full compliance under Permit No. 18-153 would have produced.

6. The District will provide technical deliverables to Life Time before the District Board: (a) extends the District's assessment beyond the minor subwatershed boundary; or (b) approves a project for final design or implementation. The District will receive comment from Life Time and consult with it, as it may request.

Projects That May Be Funded from the Escrow

7. A project funded from the Escrow under this Agreement may: (a) be structural or nonstructural; (b) function without operation or maintenance (O&M), or require O&M; (c) consist of any one-time or ongoing action that the District engineer concludes is expected to produce annual phosphorus removal and/or volume abstraction over a 20-year period; and (d) involve one or multiple locations or discrete actions.

8. A project may be constructed or implemented by the District; by another public body or third party through agreement with the District; or through a partnership between the District and one or more other parties.

9. A project may stand alone, or it may consist of an enhancement of or addition to another project or undertaking.

10. If the District cannot identify or proceed with one or more feasible projects that meet the full annual phosphorus reduction and volume abstraction requirements, it may proceed with one or more projects that achieve a part of that result.

11. At any time, Life Time, independent of any regulatory obligation, may implement measures at the Site or another location within the minor subwatershed to meet some or all of its phosphorus removal and/or volume abstraction obligations. It will timely communicate with the District as to any such action in the mutual interest of avoiding unneeded expenditure of the Escrow. The District, through its technical advisors, will determine the measures of removal and abstraction achieved and these will be deducted from the total measures of 7.2 pounds of phosphorus, and 28,734 cubic feet of abstraction, to which the Escrow is applied.

Use of the Escrow

12. The Escrow will apply to fund and/or reimburse the District for all costs, including administrative and legal, development, design, implementation and O&M costs, related to projects under this Agreement. The Escrow will apply to costs reasonably incurred even if no project ultimately is identified or implemented.

13. Escrow funds will become the sole property of the District, and Life Time agrees to the relinquishment of all legal and equitable interest therein, when the District has provided written notice to Life Time of the intent to apply escrow funds, the purpose and the amount, and 20 days thereafter have elapsed. The District may use escrow funds to pay third parties directly, or to reimburse itself for payments made.

14. Within 60 days after the District Administrator has determined that a project has been completed or implemented, the District will perform a project accounting and provide the accounting to Life Time. Final project cost will include the District technical advisor's reasonable calculation of 20 years' O&M cost, at present value.

15. Within five years of the date of this Agreement, the District Board, on the basis of technical and regulatory feasibility, land availability, projected performance and estimated cost, will take formal action identifying one or more projects for final feasibility and advancement of design. The District will maintain the Escrow until each identified project has been completed or implemented, or the Board has formally determined that it will not proceed. When all identified projects have been completed or implemented, the District will perform an accounting of funds expended and return unused funds to Life Time, and Life Time's financial obligation under the Agreement will terminate.

Regulatory Treatment

16. By entering into and performing its obligations under this Agreement, and by otherwise conforming to Permit 18-153 and the associated variance, Life Time will be deemed to have fully complied with District rules with respect to all work performed under Permit 18-153 and all preexisting improvements on the Site.

17. Any future Site improvements will be subject to District permit requirements as may be applicable under the District Rules in effect at the time such improvements are undertaken, however, for the purpose of determining District permit requirements, the site shall be considered as though all improvements completed prior to the date of execution of this agreement, were made in accordance with District requirements in place on the date of execution of this agreement.

Notice and Miscellaneous

18. All notices required or provided for under this Agreement will be made to the following representatives of the parties, except as may be altered in a writing signed by the representative, with receipt confirmed:

c/o LTF Real Estate Company, Inc.
2902 Corporate Place
Chanhassen, MN 55317
Attn: Kari L. Broyles

With a copy to:

LTF Real Estate Company, Inc.
2902 Corporate Place
Chanhassen, MN 55317
Attn: Property Manager

Administrator
Minnehaha Creek Watershed District
15320 Minnetonka Boulevard
Minnetonka MN 55345

19. Venue for any action hereunder is in Hennepin County, Minnesota. The law of Minnesota will apply to any such action.

20. The above Recitals are incorporated into and a part of this Agreement.

Intending To Be Bound,

HEALTHY WAY OF LIFE I, LLC

By: Kari L. Broyles

Date: September 14, 2018

Approved for Form & Execution

MCWD Attorney

MINNEHAHA CREEK WATERSHED DISTRICT

By: James Wisker, Administrator

Date: 9-27-18

Exhibit A

MINNEHAHA CREEK WATERSHED DISTRICT

QUALITY OF WATER QUALITY OF LIFE

Pursuant to Minnesota Statutes Chapter 103D, and on the basis of statements and information contained in the permit application, correspondence, plans, maps, and all other supporting data submitted by the applicant, and made a part hereof by reference, PERMISSION IS HEREBY GRANTED to the applicant named below for use and development of land in the Minnehaha Creek Watershed District.

Issued to: Life Time, Inc	Permit No: 18-153
Location: 5525 Cedar Lake Road, St. Louis Park	
Purpose: Stormwater Management-Building Addition	
Date of Issuance: 9/19/2018	Date of Expiration: 9/19/2019

By Order of the Board of Managers

Elizabeth Showalter
Permitting Technician

This permit is not transferable without District approval, and is valid to the date of expiration. No activity is authorized beyond the expiration date. If the permittee requires more time to complete the project, an application for renewal of the permit must be received by the District at least 30 days before expiration.

The applicant is responsible for compliance with all District Rules and for the action of their representatives, contractors, and employees.

Conditions: Project to be completed as described in plans submitted to the MCWD office on March 23rd, 2018 according to the provisions of this permit.

- Properly install and maintain all required erosion control measures until the disturbed areas are re-stabilized
- Notify MCWD in writing upon completing installation of perimeter and sedimentation controls
- When the site is re-stabilized and the MCWD staff has performed a final inspection, all perimeter control must be removed
- Submission of recorded copy of maintenance declaration by October 19, 2018

(Statement concerning fees for inspections, violations, etc... on following page)

Inspection/Analysis/Monitoring Fees

A site inspection and monitoring by District staff will be performed where the activity involves:

- a commercial/industrial/multi-family residential development
- a single family residential development greater than 5 acres or of any size if within the Minnehaha Creek subwatershed
- any alteration of a floodplain or wetland
- dredging within the beds, banks or shores of any protected water or wetland
- a violation
- any project which in the judgment of the District staff should be inspected due to project location, scope, or construction techniques

In these cases, the applicant shall pay to the District a fee equal to the actual costs of field inspection of the work, including investigation of the area affected by the work, analysis of the work, and any subsequent monitoring of the work, which in the case of a violation shall be at least $35.

Standard Fee Schedule

District professional staff	$ 65.51*
District interns	$ 40.35*
District clerical staff	$ 46.69*
Consulting Senior Engineer	$ contracted rate
Consulting Engineer/Technician	$ contracted rate
District Counsel	$ contracted rate
Application fee	$ 10.00
Copy costs	$ .25 + actual staff time
Color copy costs	$ 1.00 + actual staff time

* Hourly

RESOLUTION

RESOLUTION NUMBER: 18-083

TITLE: **Variance Approval for Life Time, Inc., 5525 Cedar Lake Road, District Permit 18-153.**

WHEREAS Life Time, Inc., ("Life Time") has applied for a permit for an addition of about 5,300 square feet of hard surface to its fitness facility at 5525 Cedar Lake Road, St. Louis Park (the "Property");

WHEREAS the Property is 10.4 acres in size, 8.5 acres of which is hard surface;

WHEREAS the District's Stormwater Management Rule, §§ 2 and 5(c), states that once site hard surface exceeds 40 percent, the property owner must provide and stormwater volume control for the aggregate site hard surface installed since the date of rule adoption in 2005;

WHEREAS in conjunction with its permit application, designated as Permit No. 18-153, Life Time has applied for a variance from the requirement to provide stormwater management for aggregate site hard surface, on the following grounds: (a) the present improvement is small in relation to the total site hard surface; (b) doing so would cause disturbance that would make its commercial operations infeasible; and (c) it could more feasibly have installed stormwater management facilities as a part of its preceding, more extensive improvements under District permit 13-041, but the District did not impose the requirement at that time;

WHEREAS the District Variance rule sets forth the following criteria for variance:

- Special conditions to which other property in the District generally is not subject mean that strict compliance with the rule will cause undue hardship;
- The hardship was not created by the property owner or its contractor;
- The hardship is not merely an inconvenience, and not solely economic;
- There is no feasible and prudent alternative by which the rule may be met; and
- The variance will not impair or be contrary to the intent of the rules.

WHEREAS Life Time proposes to construct a new infiltration basin, which District staff and the District engineer find are sufficient to meet the rule requirements for the proposed new hard surface but exhaust the ability to locate facilities on the Property without disturbing existing improvements and utilities;

WHEREAS District staff and the District engineer have thoroughly reviewed the possibilities for Life Time to secure phosphorus removal and volume control elsewhere within the subwatershed and downstream of the Property, and have concluded that at this time there are no such possibilities, and have documented the review in memoranda that are a part of the permit file;

WHEREAS District staff has determined that within the next several years there is a reasonable likelihood for regional treatment to be installed as a part of public park, road and drainage improvements or otherwise through work that the District can facilitate;

WHEREAS the Board of Managers ("Board") has reviewed the memoranda and recommendations of District staff and the District engineer, finds them reasonable and adopts them;

WHEREAS Life Time proposes as a condition of a variance to enter into an agreement with the District, under which it would pay into escrow the avoided cost of installing facilities on the Property, which the District would use to fund regional stormwater management in place of Life Time's on-site management;

WHEREAS the proposed agreement, developed between District staff and Life Time, is included with the variance application;

THEREFORE BE IT RESOLVED that the Board finds as follows:

- Special conditions causing undue hardship exist that do not apply generally to other properties within the District, namely that the proposed improvement is of limited scope in proportion to existing site improvements and there is not room to accommodate the required stormwater management facilities without substantial disturbance to existing improvements and utilities;

- The hardship was not created by Life Time or its contractor, but results in large extent from the District's inadvertent failure to impose the requirement of aggregate stormwater management when the Property was undergoing substantial disturbance and improvement under Permit 13-041;

- The hardship is not merely an inconvenience and not solely economic, in that, in addition to the heightened cost of retrofitting, the work would require a large area of site disturbance, including reconfiguration and rerouting of site drainage and existing utility lines, and would impair the present commercial use of the property for a period of time, with a substantial potential impact on existing member use and Life Time's commercial relations;

- There is no feasible and prudent means by which Life Time can meet the §5(c) requirements, as the District engineer has reviewed both on- and off-site options and concluded that Life Time has maximized the opportunity for on-site treatment without disturbing existing improvements, and that there are no off-site options that appear both to offer potentially cost-effective phosphorus removal or flow management and to be feasible for Life Time as a private entity to implement;

- A variance will not be contrary to the intent of the rules, because: (a) Life Time has maximized treatment on-site; (b) Life Time is bearing its avoided compliance cost through a legally binding agreement; (c) under the agreement, there is a strong likelihood that the District, through its relationships with its public and private partners and its capacities as a public agency, can facilitate achieving the rule's stormwater management outcomes through regional means; and (d) regional management is consistent with the Stormwater Management Rule, at §7.

BE IT FURTHER RESOLVED that the Board therefore approves a variance on the following conditions:

- Life Time will construct on-site stormwater management facilities in accordance with District-approved plans and specifications;

- Before a permit is issued, Life Time and the District will execute an agreement materially equivalent to the proposed agreement included in the variance request.

BE IT FINALLY RESOLVED that the District Administrator is authorized to sign the required agreement, with non-material changes and on advice of counsel, and to administer the receipt and management of the escrow for which it provides.

Resolution Number 18- was moved by Manager Miller, seconded by Manager Olson.
Motion to adopt the resolution 3 ayes, 0 nays, 0 abstentions. Date: 8-23-18.

K. Roguess
Secretary

Date: 8/23/18

Attachment B

MINNEHAHA CREEK WATERSHED DISTRICT

QUALITY OF WATER QUALITY OF LIFE

PERMIT REPORT

To: Board of Managers

From: Elizabeth Showalter, Permitting Technician

Date: June 25, 2018

Re: Permit 18-153: Life Time Fitness (5525 Cedar Lake Road, St. Louis Park)

Summary:
Life Time Fitness has applied for a Minnehaha Creek Watershed District permit under the Stormwater Management Rule for the construction of a 5,300 square foot addition to the existing building. The Erosion Control Rule is triggered, but the City of St. Louis Park exercises regulatory authority for that rule. The applicant has also applied for a variance from compliance with the stormwater-treatment requirements applicable to the project under the common scheme of development framework in the Stormwater Management Rule and rather provide only treatment for the proposed new impervious on the site.

Background:
The St. Louis Park Life Time Fitness has previously held three District permits. Under those permits, they have disturbed approximately 6.6 acres, or 64% of the site. The most recent permit involved the construction of a parking ramp which involved 23% site disturbance. The first two permits involved reductions in impervious surface, which only required that a BMP be implemented. Those BMPs were a filtration basin and an area of permeable pavement. Under permit 13-041, the applicant should have been required to treat the entire site's impervious surface through the common scheme of development framework of the Stormwater Management Rule, which requires all development that has occurred since January 2005 be considered in aggregate when determining treatment scope. District staff only required the applicants to treat the additional impervious surface proposed to be created at that time, and permit 13-041 was issued for that work on a demonstration by the applicant that stormwater-management requirements for the work proposed would be met. The applicant provided stormwater treatment through a series of raingardens.

Summary of Previous Permits

Permit Number	Project Description	Approximate Site Disturbance
08-054	Tennis building and parking lot reconstruction	3.1 acres (30%)
09-317	Parking lot reconstruction	3.5 acres (34%)
13-041	Parking ramp	2.35 acres (23%)
Approximate Total		6.6 acres (64%)

Under the current rule, on sites greater than 5 acres with proposed (and cumulative) disturbance greater than 40 percent but resulting in a decrease in impervious surface, volume control is required for all impervious surface.

District Rule Analysis:

Stormwater Management Rule

The Stormwater Management Rule is triggered by the creation of new or replacement of existing impervious surface. The proposed project is a 5,300 building addition and outdoor play area, which triggers the Stormwater Management Rule. Since over 40% of the site has been disturbed since January of 2005, volume control is required for the entire site's impervious surface, despite the reduction in impervious surface.

To meet the District's requirements the applicant would need to provide 29,950 cubic feet of abstraction, which would remove approximately 7.5 pounds of phosphorus per year. If the Stormwater Management Rule was applied as though the previous disturbance had not taken place, phosphorus, rate, and volume and volume controls would need to be provided for the 5,627 square feet of additional impervious surface, which would require 468.9 cubic feet of abstraction. The applicant submitted plans for a stormwater management system that provided the 720 cubic feet of abstraction through an infiltration basin, meeting the volume control requirement. The provided abstraction would remove approximately 0.2 pounds of phosphorus per year. The design also reduces runoff rates at the 1, 10, and 100-year storm events, as required by the rate control section of the rule.

Upon being informed by MCWD staff that treatment for the entire site was required, Life Time Fitness expressed interest in finding a regional treatment opportunity. Staff worked with the applicant and the City of St. Louis Park to identify opportunities for treatment within the Twin Lakes subwatershed. The District and City do not have any capital projects planned for the subwatershed, and the only existing infrastructure is the Twin Lake stormwater pond operated by the District. Options for new projects explored include:

1. Restoration of a large wetland complex which was determined to be infeasible due to the large size of the wetland and differing ownership throughout the complex.
2. Excavation of an existing basin at a stormsewer outfall located in a wetland on Cedar Lake Road (owned by St. Louis Park), which would be considered a wetland impact, and restoration elsewhere in the wetland would be unlikely to yield replacement credit under WCA/USACE rules. Therefore, the excavation of the pond was not deemed a feasible project.
3. Improvements to the Twin Lakes pond (maintained by the District), which is severely undersized, and would benefit from expansion, but is bordered by a wetland on one side and a well-used park on the other side. Improvements to the pond to improve effectiveness, such as adding an iron filter bench, would be limited in effectiveness by the frequent overtopping of the pond, and would place additional maintenance requirements on the District, with minimal water quality benefits. The installation of the filtration

bench would yield approximately 12 pounds of phosphorus reduction annually, 4 pounds more than is required by the Stormwater Management Rule for Life Time. The bench would increase District maintenance costs by between $10,000 and $20,000 every seven to ten years. Staff did not find the water quality benefit sufficient to justify the additional maintenance cost.

4. Installation of a cartridge system to treat water exiting a wetland for dissolved phosphorus, was deemed infeasible because of the difficultly to access for maintenance and the inability to keep the system dry enough of the time to function properly.
5. Improvements to three outfalls from St. Louis Park's stormsewers into Twin Lake which have good access but limited right of way are limited to sediment settling devices, such as sump catch basins, which are only able to remove approximately 10% of phosphorus. The phosphorus removal would not justify the cost, unless road construction or other utility work was proposed.

Since no regional treatment option was determined to be feasible and prudent, Life Time has applied for a Variance from the compliance with the stormwater-management requirements applicable under the common scheme of development framework of the Stormwater Management Rule.

Variance:
The applicant has submitted a variance request form (attachment 2). The applicant is requesting a variance from application of the common scheme of development framework of the Stormwater Management Rule which requires volume control be provided for the entire site's impervious surface, due to the scale of previously permitted work, to allow the construction of the proposed building addition. The requested variance would only apply to the presently proposed work, and not to future work, which would require the applicants to treat the entire site, or apply for another variance.

Life Time has provided a concept plan for stormwater management which includes treatment for the 5,627 square feet of new impervious surface proposed for this project, installation of two sump catch basins with SAFL baffles, which provide sediment removal for parking lot runoff which is currently routed to the municipal stormsewer without treatment, and excavation of an existing raingarden and addition of iron filings to provide additional phosphorus removal, for a portion of the parking lot. If the Board of Managers approves the variance, the applicant will provide detailed designs for the proposed treatment which will be analyzed for compliance by staff and the District Engineer to confirm compliance with applicable requirements prior to permit approval.

The District's Variance and Exception Rules states that to grant a variance the Board of Managers must determine:

1. That because of special conditions inherent to the property, strict compliance with the rule will cause an undue hardship to the applicant of property owner.

2. The hardship was not created by the landowner, the land owner's agent or representative, or a contractor. Economic hardship is not grounds for a variance
3. That granting a variance will not merely serve as a convenience to the applicant
4. That there is no feasible or prudent alternative to the proposed activity requiring the variance, and
5. That granting the variance is not contrary to the intent of the rules

In the attached variance request, the applicant argues that compliance with the MCWD stormwater management treatment requirements for the entire site now would cause an undue hardship for several reasons. First, retrofitting the site to provide the required volume control would involve at least 2 acres of site disturbance and reconfiguration of the drainage on the site including existing utility lines and the drainage from the building, which is currently drained to the railroad tracks on the south side of the building. The disturbance area is larger than typical, because the soils on the majority of the site are not conducive to infiltration due to anticipated contamination and the high clay content. The applicants further argue that the large amount of disturbance would significantly impact usage of the club. The applicants also contend that had they been made aware of the requirement to treat the entire site when previous projects were permitted, compliance with the full scope of the rule would have been more feasible. In addition to the previously outlined regional treatment options, the applicants also explored adding above ground treatment, which would involve less impacts to club usage. The applicants inquired with St. Louis Park about the elimination of parking spaces, but were informed that they are not currently provided the minimum amount of parking, and therefore could not eliminate spaces.

Conclusion:
Life Time Fitness has applied for an MCWD permit for Stormwater Management and applied for a variance from the common scheme of development framework of the Stormwater Management Rule for the construction of a building addition. The applicant has submitted a concept plan for stormwater improvements on the Life Time Fitness site, but has not submitted final designs. If the variance is approved by the Board of Managers, staff recommends delegation of final permitting authority to staff to analyze the applicant's final submittal for compliance with applicable requirements.

Attachments:

1. Application Form
2. Variance Request
3. Site Plan
4. Previous Permit Graphic
5. Regional Treatment Options Map

18-153

WATER RESOURCE PERMIT APPLICATION FORM

Use this form to notify/apply to the Minnehaha Creek Watershed District (MCWD) of a proposed project or work which may fall within their jurisdiction. Fill out this form completely and submit with your site plan, maps, etc. to the MCWD at:
15320 Minnetonka Blvd. Minnetonka, MN 55345.
Keep a copy for your records.

YOU MUST OBTAIN ALL REQUIRED AUTHORIZATIONS BEFORE BEGINNING WORK.

1. Name of each property owner: Life Time
Mailing Address: 2902 Corporate Place City: Chanhassen State: MN Zip: 55317
Email Address: JSchmidt@lt.life Phone: 952-229-7862 Fax: 952-947-0797

2. Property Owner Representative Information (not required) (licensed contractor, architect, engineer, etc…)
Business Name: Elfering & Associates Representative Name: Kristie Elfering
Business Address: 10062 Flanders Court NE City: Blaine State: MN Zip: 55449
Email Address: KElfering@elferingeng.com Phone: 763-780-0450 Ext 2 Fax: 763-780-0452

3. Project Address: 5525 Cedar Lake Road City: St. Louis Park
State: MN Zip: 55416 Qtr Section(s): _____ Section(s): 9 Township(s): 117N Range(s): 21W
Lot: _____ Block: _____ Subdivision: Unplatted PID: 09-117-21-21-0204

4. Size of project parcel (square feet or acres): 10.44 acres
Area of disturbance (square feet): 12,310 sf Volume of excavation/fill (cubic yards): 1,500 cy
Area of existing impervious surface: 2,470 sf - Project Area of proposed impervious surface: 8,097 sf - Project Area
Length of shoreline affected (feet): N/A Waterbody (& bay if applicable): N/A

5. Type of permit being applied for (Check all that apply):
- ☑ EROSION CONTROL
- ☐ FLOODPLAIN ALTERATION
- ☐ WETLAND PROTECTION
- ☐ DREDGING
- ☐ SHORELINE/STREAMBANK STABILIZATION
- ☐ WATERBODY CROSSINGS/STRUCTURES
- ☑ STORMWATER MANAGEMENT
- ☐ APPROPRIATIONS
- ☐ ILLICIT DISCHARGE

RECEIVED MAR 22 2018 By

6. Project purpose (Check all that apply):
- ☐ SINGLE FAMILY HOME
- ☐ ROAD CONSTRUCTION
- ☐ UTILITIES
- ☐ DREDGING
- ☐ SHORELINE/STREAMBANK STABILIZATION
- ☐ MULTI FAMILY RESIDENTIAL (apartments)
- ☑ COMMERCIAL or INSTITUTIONAL
- ☐ SUBDIVISIONS (include number of lots)
- ☐ LANDSCAPING (pools, berms, etc.)
- ☐ OTHER (DESCRIBE):

7. NPDES/SDS General Stormwater Permit Number (if applicable): N/A

8. Waterbody receiving runoff from site: Ditch along railroad property

9. Project Timeline: Start Date: May 2018 Completion Date: October 2018

Permits have been applied for: City ☐ County ☒ MN Pollution Control Agency ☐ DNR ☐ COE ☐
Permits have been received: City ☐ County ☐ MN Pollution Control Agency ☐ DNR ☐ COE ☐

By signing below, I hereby request a permit to authorize the activities described herein. I certify that I am familiar with MCWD Rules and that the proposed activity will be conducted in compliance with these Rules. I am familiar with the information contained in this application and, to the best of my knowledge and belief, all information is true, complete and accurate. I understand that proceeding with work before all required authorizations are obtained may be subject to federal, state and/or local administrative, civil and/or criminal penalties.

Signature of Each Property Owner

3/8/18
Date

Request for Variance
And
Statement of Hardship

The Board of Managers may hear requests for variances from the literal provisions of these rules in instances where their strict enforcement would cause undue hardship because of circumstances unique to the property under consideration. The Board of Managers may grant variances where it is demonstrated that such action will be keeping with the spirit and intent of these rules. An applicant granted a variance from full compliance with a requirement of the rules would be required to meet the requirement to the degree feasible short of full compliance.

In order to grant a variance, the Board of Managers shall determine that:

- the special conditions which apply to the structure or land in question do not apply generally to other land or structures in the District
- the granting of such variance will not merely serve as a convenience to the applicant,
- the variance will not impair or be contrary to the intent of these rules.

A hardship cannot be created by the landowner, the landowner's agent or representative, or a contractor, and must be unique to the property. Economic hardship are not grounds for issuing a variance.

A variance shall become void one year after it is granted if not used.

A violation of any condition set forth in a variance shall be a violation of the District rules and shall automatically terminate the variance.

Date June 12, 2018 **Permit #** 18-153

Applicant Life Time Fitness

Address 2902 Corporate Place, Chanhassen MN 55317

Telephone number 952-229-7862

Property ID number 09-117-21-21-0204

MCWD Rule (circle applicable rule(s)): **A B C D E F G J K M N**

Description of project:

The project address is 5525 Cedar Lake Road in St. Louis Park. The proposed project includes an approximately 5,300 square foot expansion of the building in the rear (south side of the existing building). In addition a walk will be added from the building to the east parking lot at the request of the City. The project also includes the construction of a turf pad play area and infiltration basin.

Requirements of rule(s)

The project does trigger the Erosion Control Rule and Stormwater Management Rule. The proposed plans do meet the requirements of both rules, including providing an infiltration basin to meet infiltration and storm water rate control rules when reviewing the project as an isolated event. The Stormwater Management Rule also states that all applicable activity under this rule will be considered in aggregate for all work completed since January 2005. Current Life Time and consulting staff were unaware that the 40% disturbance threshold was surpassed in projects in 2009 and 2013. Those projects should have required volume control for the entire site's impervious surface.

Requested Variance

At this time we are requesting that the Watershed's rules not be applied in aggregate to the entire site and that the project be allowed to proceed as a standalone improvement. The history of work at the site includes a tennis building and parking lot reconstruction project in 2008 that disturbed 30% of the site. In 2009 a parking lot reconstruction project took place that disturbed an additional 34% of the site. Finally, a parking ramp was constructed in 2013 that disturbed 23% of the site. Permits were applied for from the Watershed for all of the projects noted and all required stipulations were followed at that time. In 2009 and 2013 it was not brought to Life Time's attention nor was it requested by the Watershed to address the volume control for the entire site even though both projects triggered that requirement.

Statement of Hardship (include any mitigating circumstances).

This request is being made because entire areas of recently completed work would need to be disturbed in an effort to meet the requirements. The previous projects were large scale in nature and caused major disruption at the time to club operations. While meeting the requirements would have resulted in minimal additional impacts to the club at the time, disrupting the same areas to meet the overall site treatment requirements now will cause significant impact to the usage of the club. From the standpoint of the patrons redoing recently completed parking lots will be viewed as mismanagement by the company and negatively impact the company's image. Loss of membership due to bad experience or inability to conveniently access the club could result in the loss of jobs. Given the significant projects that were completed without notice for entire site treatment we are requesting that the current small building expansion in the rear be allowed to move forward. When a future pavement project occurs that requires permitting by the Watershed Life Time will work with the Watershed to meet the site treatment requirements at that time for the entire site.

How do you propose to meet the requirements of the applicable MCWD rules?

The standalone project will meet the MCWD rules. It is proposed to meet the entire site requirements with the next pavement project that requires permitting.

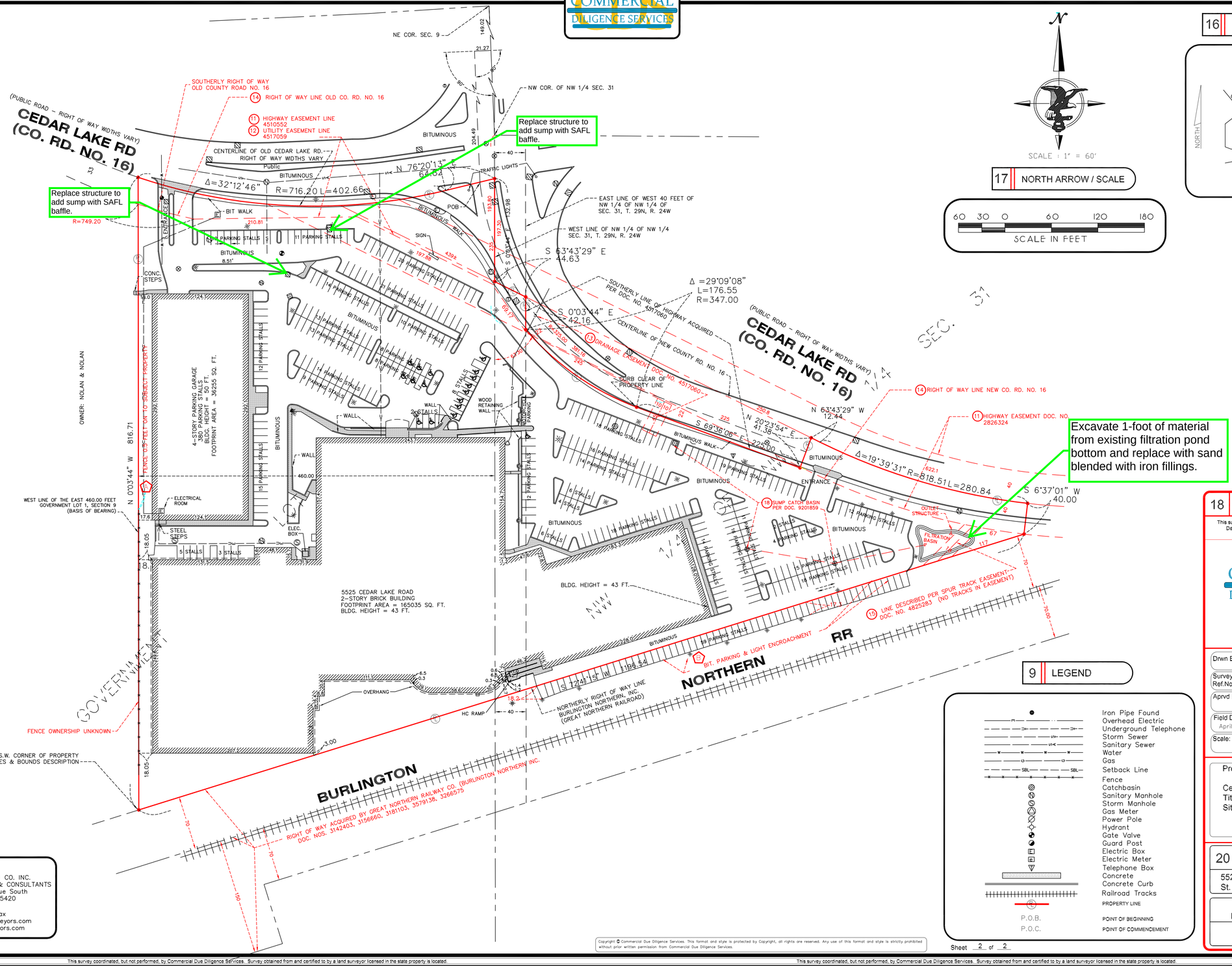
Applicant name:_____ **Date:**_____

Applicant signature:_____

Staff Recommendation (For staff use only) Approve

This survey coordinated, but not performed, by Commercial Due Diligence Services. Survey obtained from and certified to by a land surveyor licensed in the state property is located.

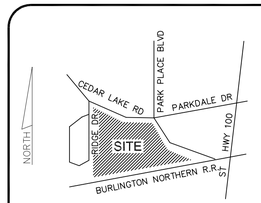
COMMERCIAL DILIGENCE SERVICES



17 NORTH ARROW / SCALE

60 30 0 60 120 180
SCALE IN FEET

16 VICINITY MAP



VICINITY MAP
NO SCALE

9 LEGEND

	Iron Pipe Found
OH	Overhead Electric
UG	Underground Telephone
UG	Storm Sewer
SS	Sanitary Sewer
W	Water
G	Gas
SBL	Setback Line
x	Fence
	Catchbasin
	Sanitary Manhole
	Storm Manhole
	Gas Meter
	Power Pole
	Hydrant
	Gate Valve
	Guard Post
	Electric Box
	Electric Meter
	Telephone Box
	Concrete
	Concrete Curb
	Railroad Tracks
	PROPERTY LINE
P.O.B.	POINT OF BEGINNING
P.O.C.	POINT OF COMMENCEMENT

18 ALTA/ACSM Land Title Survey

This survey prepared in accordance with the "Minimum Standard Detail Requirements for ALTA/ASCM Land Title Surveys (Effective February 23, 2011)

This Work Coordinated By:

COMMERCIAL DILIGENCE SERVICES
1700 South Broadway, Bldg E
Moore, Oklahoma 73160
Office: 405.378.5800 - Fax: 405.703.1851
Toll Free: 888.457.7878

Drwn By: ONI	Date: 4.29.15 Revision: CDS Comments
Surveyor Ref.No: 2015208.dwg	Date: 5.22.15 Revision: CDS Comments
Aprvd By: TEH	Date: 6.3.15 Revision: CDS Comments
Field Date: April 23, 2015	Date: Revision:
Scale: 1"=60'	

Prepared For:

Center Name: St. Louis Park
Title Number and ID: CTIC-15001380
Site # 56

20 PROJECT ADDRESS

5525 Cedar Lake Road,
St. Louis Park, Minnesota

Project Name:
LIFE TIME FITNESS PORTFOLIO
CDS Project Number:
15-04-00508

File No. 1-3-6236B	Page
W.O. Number 2015208	Book
Sheet No. 2 OF 2	CAD Tec. ONI

SURVEY PERFORMED BY:

HARRY S. JOHNSON CO. INC.
LAND SURVEYORS & CONSULTANTS
9063 Lyndale Avenue South
Bloomington, Mn. 55420
(952) 884-5341
(952) 884-5344 Fax
Email: tom@hsjsurveyors.com
Web: www.hsjsurveyors.com

This survey coordinated, but not performed, by Commercial Due Diligence Services. Survey obtained from and certified to by a land surveyor licensed in the state property is located.

This survey coordinated, but not performed, by Commercial Due Diligence Services. Survey obtained from and certified to by a land surveyor licensed in the state property is located.

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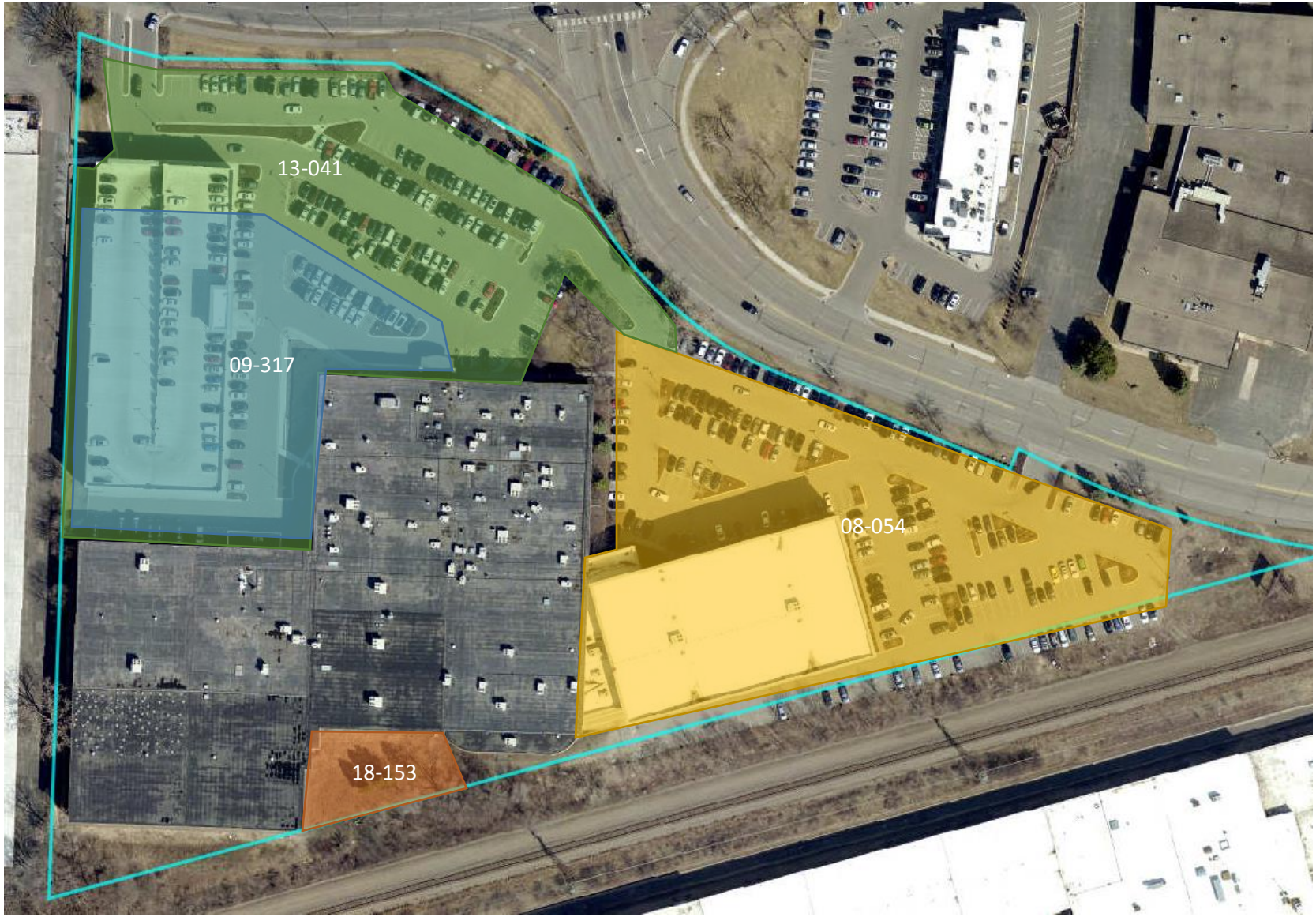
18-153 Life Time Fitness Previously Permitted Work



Permit 18-153: Life Time Fitness Regional Treatment Options

1 Wetland Restoration
2 Existing Basin Excavation
3 Improvements to Twin Lake Pond
4 Cartridge System
5 Outfall Improvements

Attachment C

Technical Memo

WENCK

Responsive partner.
Exceptional outcomes.

To: Elizabeth Showalter, Permitting Technician

From: Erik Megow
Todd Shoemaker, PE, CFM

Copy: Tom Dietrich, Permitting Program Manager
Chris Meehan, PE

Date: August 7, 2018

Subject: Permit 18-153: Variance Analysis

The purpose of this memorandum is to detail Wenck's analysis of local and regional treatment options at 5525 Cedar Lake Road in St. Louis Park (Life Time) and the Twin Lake Subwatershed.

The memorandum provides background on the motivation for this analysis. Subsequent sections then detail the methods for evaluating 16 options and include a summary table at the end of the memo to compare option details and costs.

Wenck evaluated 16 options ranging in estimated construction cost from approximately $17,000 to $4,500,000. Twelve of the 16 options achieved the primary goal of removing 7.5 lb/yr total phosphorus (TP). (MCWD rules also require volume abstraction; soils are generally poor throughout this subwatershed, so Wenck focused our analysis on TP removal.)

Wenck evaluated the remaining twelve options and recommend further study for eight options based on their cost/benefit, location on public land, and potential for ancillary benefits. We believe there is merit in proceeding with further study and evaluation of these options in the next five years. With further study and evaluation, one or more could then move to final design and implementation.

Background

Life Time has applied for a Minnehaha Creek Watershed District (District) permit under the Stormwater Management Rule for the construction of a 5,300 square foot addition to the existing building. The applicant applied for a variance from compliance with the stormwater-treatment requirements applicable to the project under the common scheme of development framework in the Stormwater Management Rule and rather provide treatment only for the proposed new impervious on the site.

The District considered but did not approve the variance request at their July 26, 2018 Board Meeting. Instead, the Board requested District staff to further evaluate and document potential local and regional treatment options within the Twin Lake subwatershed. This memorandum is in response to that request.

Methods

Wenck evaluated 16 options to improve pollutant removal, decrease runoff rates, and provide volume abstraction in the Twin Lake Subwatershed. For each option, Wenck evaluated the estimated construction and maintenance costs over a 30-year lifespan. The maintenance cost for each option was added to the construction cost and divided by the 30-year total phosphorus removal to provide a cost comparison based on pollutant removal efficiency.

Wenck prepared five figures to assist with the analysis:

- Figure 1 shows publicly-owned land according to Hennepin County online data and current MCWD CIP Investments in the Twin Lake Subwatershed.
- Figure 2 shows publicly-owned storm sewer and FEMA-delineated Floodplain Zones within the Twin Lake Subwatershed. The 1% annual chance flood elevation for the Zone AE Floodplain is 875. A 1% annual chance flood elevation is not determined for Zone A Floodplain.
- Figure 3a shows the minor subwatershed boundaries within the Twin Lake Subwatershed and the 2020 total phosphorus loads (as calculated by P-Load and reported in the District's HHPLS).
- Figure 3b shows National Wetland Inventory wetlands with their respective Circular 39 classifications within the Twin Lake Subwatershed.
- Figure 4 shows the 16 options that were included in the analysis, along with their project-specific pipesheds. The pipeshed areas and their respective phosphorus loads are tabulated in the lower right corner. The phosphorus loads for each pipeshed were calculated using a weighted-area method, except for Options 1-5; phosphorus loads for Options 1-5 were calculated using the Simple Method.

Options Discussion & Comparison

The 16 options shown in Figure 4 are described in the tables below along with benefits, challenges, TP removal, construction cost, 30-year maintenance cost, and 30-year project cost. The final row within each table contains one of three recommendations:

1) Warrants further study or evaluation;
2) Do not pursue further; does not achieve goal; or
3) Do not pursue further; cost/benefit is unreasonable.

A comparison of all options is provided in Table 2 at the end of this memo.

➢ Option 1 – Life Time Sand Filter System

TP Removal = 7.5 lb/yr	Const Cost = $1,087,569	30-yr Maint Cost = $60,967	30-yr Proj Cost = $5,105/lb
Description	Benefits		Challenges
- Underground storage system - 18" sand filter for TP removal - "Live" storage for rate control - 1,200 LF pipe to drain roof runoff to storage system - Lift station likely necessary for roof drains	- Rate control and TP removal - No maintenance obligations for the District		- Reconstruction of 1/2 acre of relatively new parking lot - Relatively high cost
RECOMMENDATION – Do not pursue further; cost/benefit is unreasonable.			

- **Option 2 – Self Storage Filter System**

TP Removal = 11.4 lb/yr	Const Cost = $737,200	30-yr Maint Cost = $201,335	30-yr Proj Cost = $2,750/lb
Description	Benefits		Challenges
- Underground canister filter system - Located in existing greenspace	- Relatively high % TP removal - No pavement replacement - Manages runoff from untreated Self Storage site		- Property or easement acquisition - No rate control to reduce cost - Only manage low flows - Tree removal Groundwater interference
RECOMMENDATION – Warrants further study or evaluation.			

- **Option 3 – Six SAFL Baffles on Cedar**

TP Removal = 0.39 lb/yr	Const Cost = $60,000	30-yr Maint Cost = $50,334	30-yr Proj Cost = $9,430/lb
Description	Benefits		Challenges
- Enhanced sump catchbasins - To be replaced with future City street project(s)	- Minimal footprint - Relatively low construction cost - Manages runoff from untreated subwatershed		- Not designed or intended for TP removal - TP removal goal not achieved No rate control
RECOMMENDATION – Do not pursue further; does not achieve goal and cost/benefit is unreasonable.			

- **Option 4 – 5795 Cedar Filter System**

TP Removal = 12.7 lb/yr	Const Cost = $717,600	30-yr Maint Cost = $201,335	30-yr Proj Cost = $2,417/lb
Description	Benefits		Challenges
- Underground canister filter system	- Relatively high % TP removal - Within public right-of-way - Manages runoff from untreated subwatershed		- Likely interference with existing utilities - No rate control - Only manage low flows - Groundwater interference Annual filter replacement; relatively high maintenance cost
RECOMMENDATION – Warrants further study or evaluation.			

- **Option 5 – 5795 Cedar Pond**

TP Removal = 13.7 lb/yr	Const Cost = $407,500	30-yr Maint Cost = $84,564	30-yr Proj Cost = $1,202/lb
Description	Benefits		Challenges
- Wet pond designed to NURP standard	- Improve low-performing outfall upstream of wetland - Within public right-of-way - Manages runoff from untreated subwatershed		- Tree removal - Wetland impact & mitigation - Property or easement acquisition
RECOMMENDATION – Warrants further study or evaluation.			

- **Option 6 – Wetland Restoration – Excavation**

TP Removal = 10.1 lb/yr	Const Cost = $3,757,840	30-yr Maint Cost = $49,034	30-yr Proj Cost = $12,533/lb
Description	Benefits		Challenges
- Create 6 acres open-water wetland - Connect open water with sinuous channel	- Improve a ditched, degraded (likely) wetland - Manage runoff from untreated subwatershed		- Possible presence of contaminated soils - Must study wetland for extended period to determine if source of TP - Relies on TP removal within a natural water body, rather than an upstream BMP
RECOMMENDATION – Do not pursue further; cost/benefit is unreasonable.			

- **Option 7 – Wetland Restoration – Increase NWL**

TP Removal = 10.1 lb/yr	Const Cost = $250,000	30-yr Maint Cost = $25,167	30-yr Proj Cost = $906/lb
Description	Benefits		Challenges
- Raise normal water level (NWL) of wetland - Replace existing outlet structure	- Improve a ditched, degraded (likely) wetland - Manage runoff from untreated subwatershed		- Possible presence of contaminated soils - Increasing NWL may mobilize contaminants - Must study wetland for extended period to determine if source of TP - Relies on TP removal within a natural water body, rather than an upstream BMP - Figure 3 shows numerous properties already at-risk due to flooding; increasing NWL may exacerbate flooding
RECOMMENDATION – Do not pursue further; likely to negatively impact multiple private properties.			

- **Option 8 – Railroad Pond**

TP Removal = 19.3 lb/yr	Const Cost = $4,467,536	30-yr Maint Cost = $183,560	30-yr Proj Cost = $8,031/lb
Description	Benefits		Challenges
- Wet pond designed to NURP standard	- Publicly-owned land - Manages runoff from untreated subwatershed		- Insufficient space for properly-designed pond - Property or easement acquisition - Possible presence of contaminated soils
RECOMMENDATION – Do not pursue further; cost/benefit is unreasonable.			

- **Option 9 – Wetland Filter System**

TP Removal = 14.6 lb/yr	Const Cost = $412,000	30-yr Maint Cost = $201,335	30-yr Proj Cost = $1,398/lb
Description	Benefits		Challenges
- Underground canister filter system	- Relatively high % TP removal - Within publicly-owned land		- Likely interference with existing utilities - No rate control - Only manage low flows

-	- Manages runoff from untreated subwatershed	- Groundwater interference - Annual filter replacement; relatively high maintenance cost - Possible presence of contaminated soils
RECOMMENDATION – Warrants further study or evaluation.		

- **Option 10 – Dakota Park Reuse System**

TP Removal = 3.1 lb/yr	Const Cost = $1,475,000	30-yr Maint Cost = $25,167	30-yr Proj Cost = $16,131/lb
Description	Benefits		Challenges
- Underground storage system - Irrigate softball fields	- Relatively high % TP removal - Within publicly-owned land - Manages runoff from untreated subwatershed - Stormwater & recreational benefit		- TP removal limited by available irrigation area - Relatively high cost - Improve cost and removal efficiencies by using/expanding existing dry pond
RECOMMENDATION – Warrants further study or evaluation.			

- **Option 11 – Zarthan Wetland Restoration – Excavation**

TP Removal = 12.5 lb/yr	Const Cost = $1,373,280	30-yr Maint Cost = $49,034	30-yr Proj Cost = $3,797/lb
Description	Benefits		Challenges
- Create 4 acres open-water wetland - Connect open water with sinuous channel	- Improve a ditched, degraded (likely) wetland - Manage runoff from untreated subwatershed		- Possible presence of contaminated soils - Must study wetland for extended period to determine if source of TP - Relies on TP removal within a natural water body, rather than an upstream BMP
RECOMMENDATION – Do not pursue further; cost/benefit is unreasonable.			

- **Option 12 – Twin Lakes Park Filter System**

TP Removal = 12.7 lb/yr	Const Cost = $511,144	30-yr Maint Cost = $377,502	30-yr Proj Cost = $2,331/lb
Description	Benefits		Challenges
- Underground canister filter system	- Relatively high % TP removal - Within publicly-owned land		- No rate control - Only manage low flows - Groundwater interference - Annual filter replacement; relatively high maintenance cost - Construction may temporarily impact use of ballfield
RECOMMENDATION – Warrants further study or evaluation.			

- **Option 13 – Twin Lakes Park Reuse System**

TP Removal = 2.1 lb/yr	Const Cost = $370,000	30-yr Maint Cost = $25,167	30-yr Proj Cost = $6,272/lb
Description	Benefits		Challenges

- Use existing pond for storage - Irrigate softball fields	- Relatively high % TP removal - Within publicly-owned land - Stormwater & recreational benefit	- TP removal limited by available irrigation area - Relatively high cost
RECOMMENDATION – Warrants further study or evaluation.		

- **Option 14 – Twin Lakes Park Pond IESF (iron-enhanced sand filter)**

TP Removal = 13.7 lb/yr	Const Cost = $648,694	30-yr Maint Cost = $60,967	30-yr Proj Cost = $1,729/lb
Description	Benefits		Challenges
- Add IESF to existing pond	- Relatively high % TP removal - Within publicly-owned land - Stormwater & recreational benefit		- Needs further study to determine if feasible (Is there positive drainage from IESF to wetland?)
RECOMMENDATION – Warrants further study or evaluation.			

- **Option 15 – Twin Lakes Park Alum Injection System**

TP Removal = 136.9 lb/yr	Const Cost = $2,020,667	30-yr Maint Cost = $1,785,544	30-yr Proj Cost = $927/lb
Description	Benefits		Challenges
- Add injection system to Park Pond outlet	- Relatively high % TP removal - Within publicly-owned land - Significant TP removal for Twin Lake		- Needs further study to determine alum dosing feasibility - Available space for clarifiers, or use existing pond for floc accumulation - Requires significant annual maintenance budget.
RECOMMENDATION – Do not pursue further; unreasonable construction and maintenance costs.			

- **Option 16 – Twin Lake Outfalls**

TP Removal = 1.6 lb/yr	Const Cost = $17,333	30-yr Maint Cost = $0	30-yr Proj Cost = $357/lb
Description	Benefits		Challenges
- Remove accumulated sediment from outfalls into Twin lake	- Removes TP source from within lake - No continued maintenance		- Does not achieve goal - No planned adjacent city projects
RECOMMENDATION – Do not pursue further; does not achieve goal.			

Conclusions & Recommendations

Wenck conducted an abbreviated feasibility study to evaluate local and regional treatment options at 5525 Cedar Lake Road in St. Louis Park (Life Time) and within the Twin Lake Subwatershed. The overall goal was to find one or more options to remove at least 7.5 lb/yr TP, which is approximately 2% of the Twin Lake TP budget.

Wenck evaluated 16 options ranging in estimated construction cost from approximately $17,000 to $4,500,000. Twelve of the 16 options achieved the primary goal of removing 7.5 lb/yr total phosphorus (TP). Wenck evaluated the remaining twelve options and recommend further study for eight options based on their cost/benefit, location on public land, and potential for ancillary benefits.

The eight options that warrant further study and evaluation are:

ID#	Option Name	TP Removal (lb/yr)	Construction Cost	30-year Maintenance Cost	30-year Project Cost ($/lb)
North Railroad Management Area					
2	Self Storage Filter System	11.4	$ 737,200	$ 201,335	$ 2,750
4	5795 Cedar Filter System	12.7	$ 717,600	$ 201,335	$ 2,417
5	5795 Cedar Pond	13.7	$ 407,500	$ 84,564	$ 1,202
West Hwy 100 Management Area					
9	Wetland Filter System	14.6	$ 412,000	$ 201,335	$ 1,398
10	Dakota Park Reuse	3.1	$ 1,475,000	$ 25,167	$ 16,131
East Hwy 100 Management Area					
12	Twin Lakes Park Filter System	12.7	$ 511,144	$ 377,502	$ 2,331
13	Twin Lakes Park Reuse System	2.1	$ 370,000	$ 25,167	$ 6,272
14	Twin Lakes Park Pond IESF	13.7	$ 648,694	$ 60,967	$ 1,729

Wenck does not recommend moving forward with any one of the eight options due to challenges previously listed for each site. We believe there is merit, however, in proceeding with further study and evaluation of these options in the next five years. Further study may include: site-specific topographic and utility surveys; soil chemistry and pollutant monitoring to determine phosphorus mobility; soil borings and research to determine levels of possible contamination; and continued discussions and coordination with City staff.

Elizabeth Showalter
Permitting Technician
MCWD
August 7, 2018

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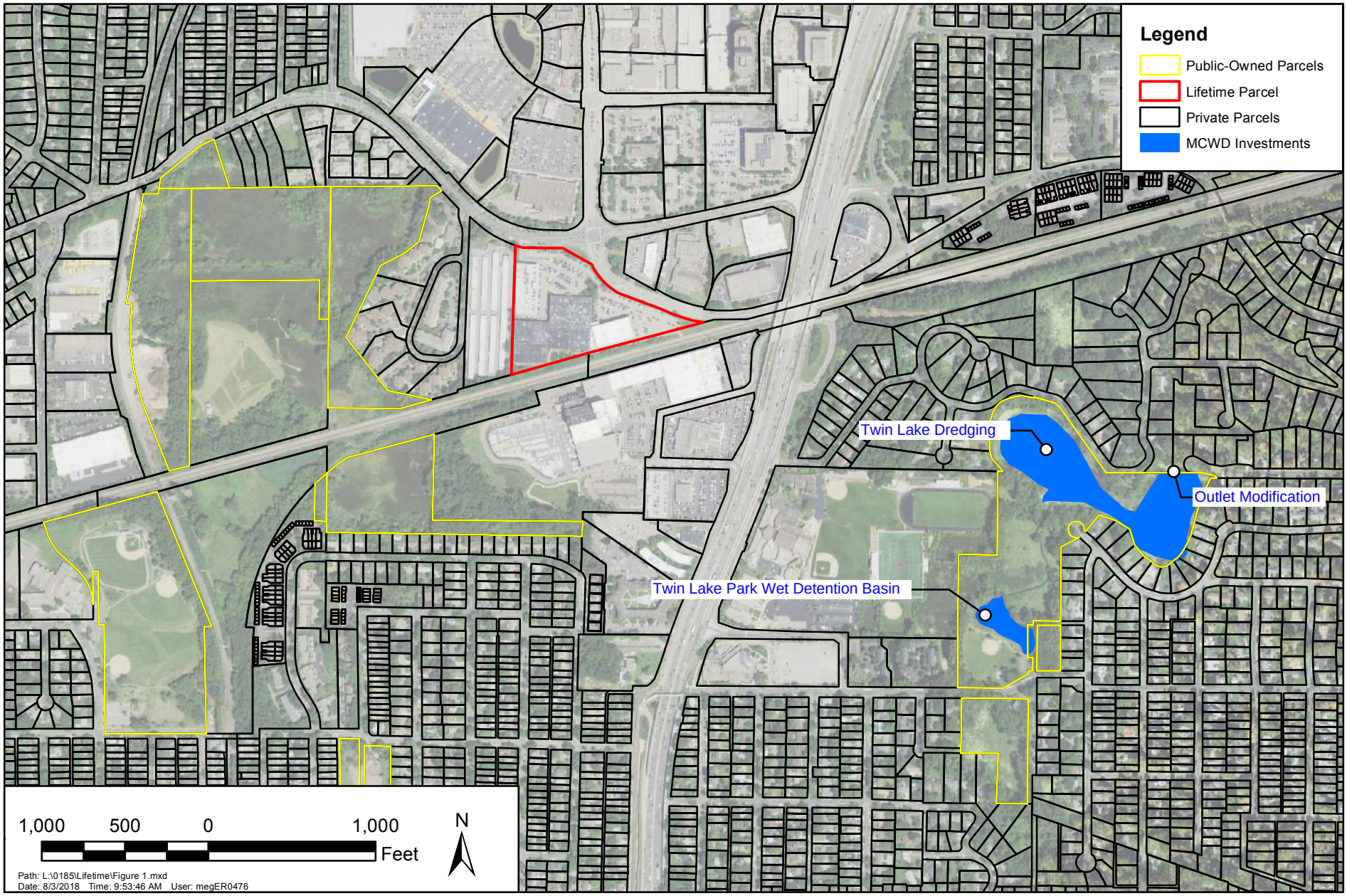
Table 2. Comparison of option conditions, TP removal, and estimated costs.

ID#	Option Name	Trib Watershed (ac)	TP Load (lbs/yr)	Rate Control	Volume Control	TP Removal (lb/yr)	Construction Cost	30-year Maintenance Cost	30-year Project Cost ($/lb)
North Railroad Management Area									
1	Lifetime Sand Filter System	11	14	Y	N	7.5	$ 1,087,569	$ 60,967	$ 5,105
2	Self Storage Filter System	25	30	Y	N	11.4	$ 737,200	$ 201,335	$ 2,750
3	Six SAFL Baffles on Cedar	33	39	N	N	0.39	$ 60,000	$ 50,334	$ 9,430
4	5795 Cedar Filter System	33	39	N	N	12.7	$ 717,600	$ 201,335	$ 2,417
5	5795 Cedar Pond	33	39	Y	N	13.7	$ 407,500	$ 84,564	$ 1,202
6	Wtlnd Rstrn - Excavation	258	90	Y	N	10.1	$ 3,757,840	$ 49,034	$ 12,533
7	Wtlnd Rstrn - Increase NWL	258	90	Y	N	10.1	$ 250,000	$ 25,167	$ 906
8	Railroad Pond	130	50	Y	N	19.3	$ 4,467,536	$ 183,560	$ 8,031
West Hwy 100 Management Area									
9	Wetland Filter System	258	90	N	N	14.6	$ 412,000	$ 201,335	$ 1,398
10	Dakota Park Reuse	278	96	Y	Y	3.1	$ 1,475,000	$ 25,167	$ 16,131
11	Zarthan Wtlnd Rstrn	316	111	Y	N	12.5	$ 1,373,280	$ 49,034	$ 3,797
East Hwy 100 Management Area									
12	Twin Lakes Park Filter System	1,053	391	N	N	12.7	$ 511,144	$ 377,502	$ 2,331
13	Twin Lakes Park Reuse System	1,053	391	N	Y	2.1	$ 370,000	$ 25,167	$ 6,272
14	Twin Lakes Park Pond IESF	1,053	391	N	N	13.7	$ 648,694	$ 60,967	$ 1,729
15	Alum Inj. @ Twin Lakes Park	1,053	391	N	N	136.9	$ 2,020,667	$ 1,785,544	$ 927
16	Twin Lake Outfalls	N/A	N/A	N	N	1.6	$ 17,333	$ -	$ 357



MINNEHAHA CREEK WATERSHED DISTRICT

Publically Owned Land and MCWD Investments

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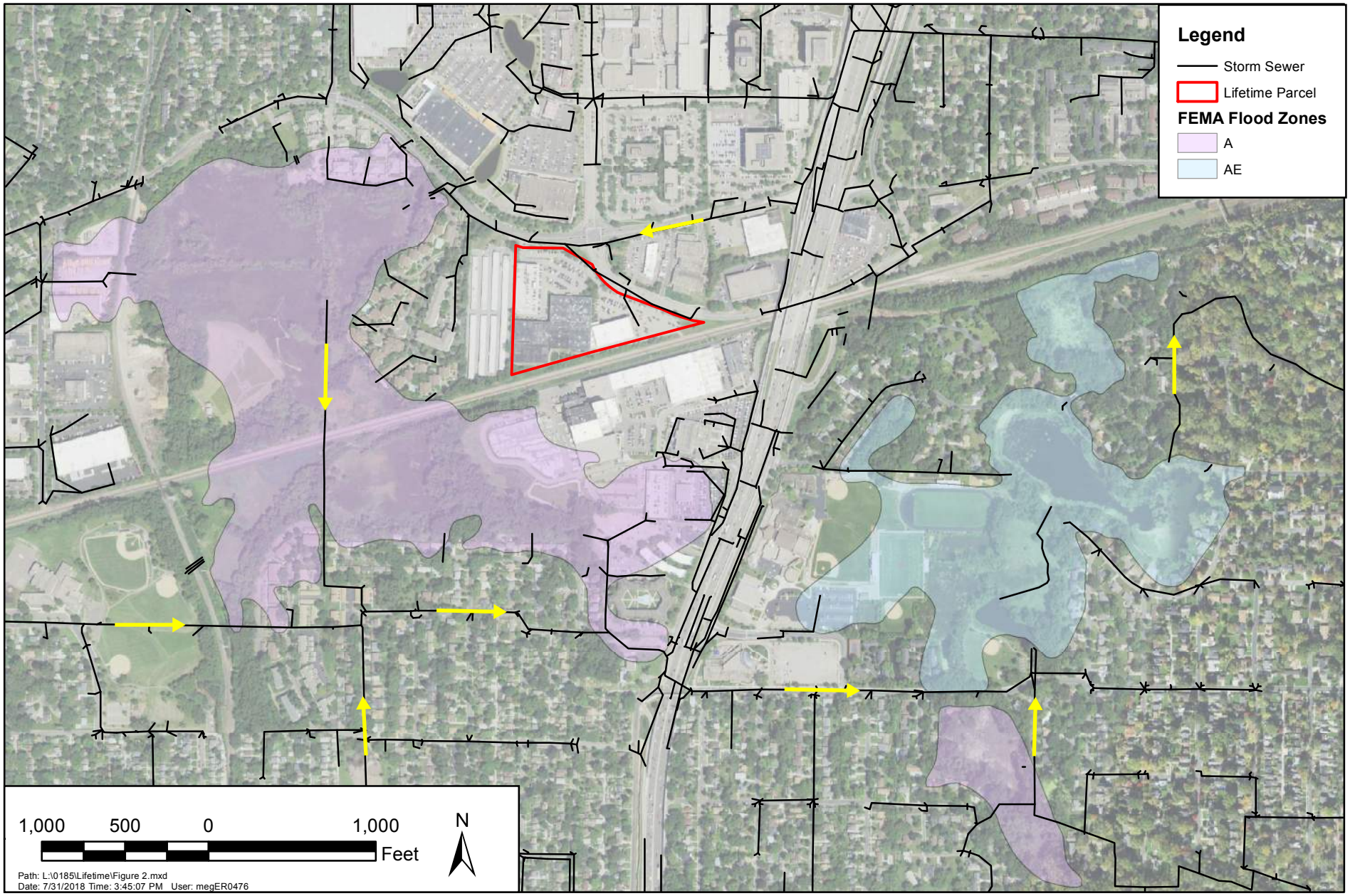
AUG 2018

Figure 1



MINNEHAHA CREEK WATERSHED DISTRICT

FEMA Floodplain and Stormsewer

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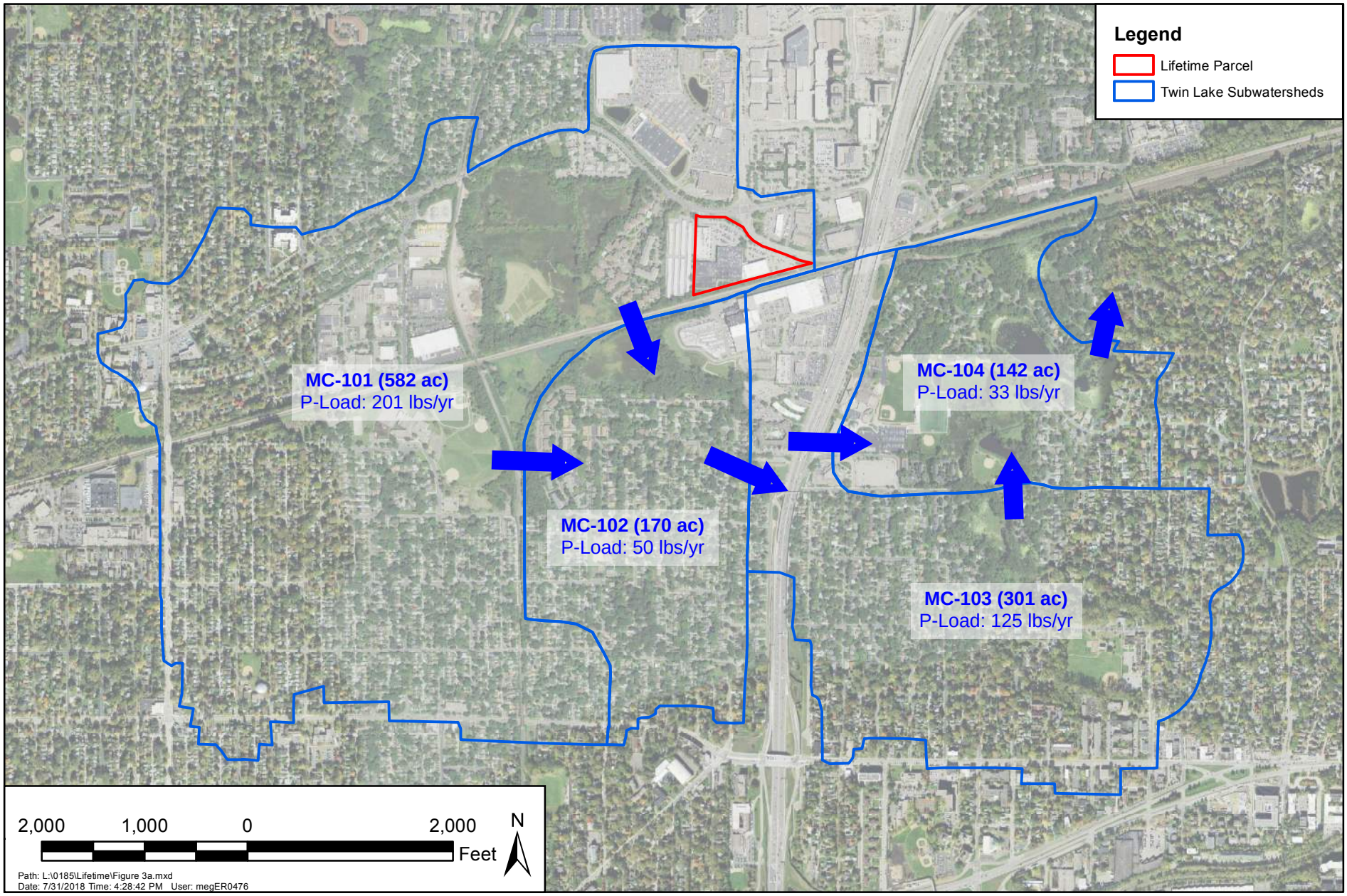
Figure 2



MINNEHAHA CREEK WATERSHED DISTRICT

Subwatersheds

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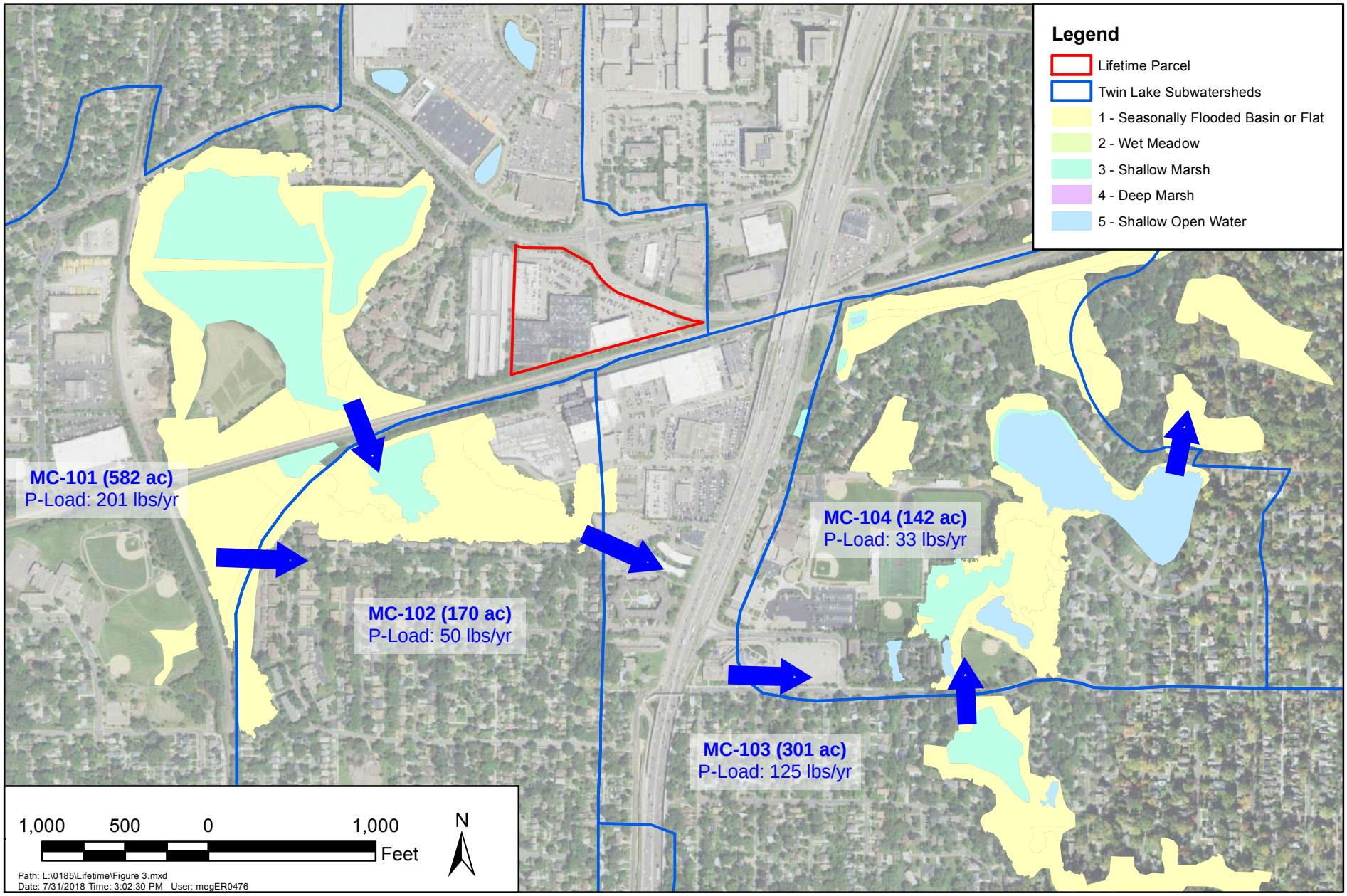
Figure 3A



MINNEHAHA CREEK WATERSHED DISTRICT

Subwaterhseds and NWI Circ 39 Wetlands

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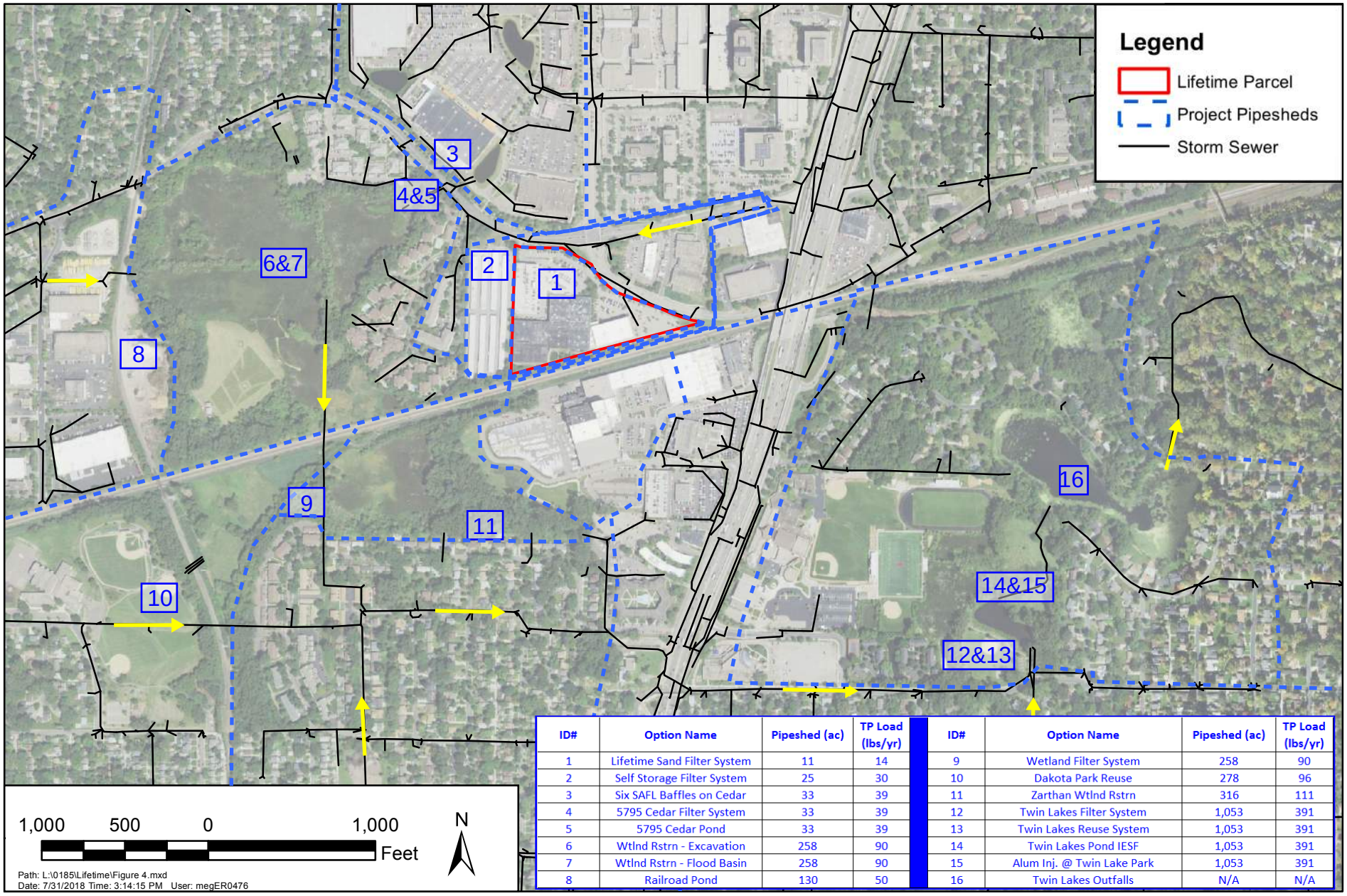
Figure 3B



ID#	Option Name	Pipeshed (ac)	TP Load (lbs/yr)	ID#	Option Name	Pipeshed (ac)	TP Load (lbs/yr)
1	Lifetime Sand Filter System	11	14	9	Wetland Filter System	258	90
2	Self Storage Filter System	25	30	10	Dakota Park Reuse	278	96
3	Six SAFL Baffles on Cedar	33	39	11	Zarthan Wtlnd Rstrn	316	111
4	5795 Cedar Filter System	33	39	12	Twin Lakes Filter System	1,053	391
5	5795 Cedar Pond	33	39	13	Twin Lakes Reuse System	1,053	391
6	Wtlnd Rstrn - Excavation	258	90	14	Twin Lakes Pond IESF	1,053	391
7	Wtlnd Rstrn - Flood Basin	258	90	15	Alum Inj. @ Twin Lake Park	1,053	391
8	Railroad Pond	130	50	16	Twin Lakes Outfalls	N/A	N/A

MINNEHAHA CREEK WATERSHED DISTRICT

Lifetime Regional Options and Pipesheds

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AUG 2018

Figure 4

Attachment D

DRAFT Technical Memo

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To: Erin Manlick, Permitting Assistant

From: Lu Zhang
Todd Shoemaker, PE (MN, IA), CFM

Copy: Chris Meehan, PE (MN), District Engineer

Date: July 7, 2020

Subject: St. Louis Park LifeTime BMP Feasibility Study – 2020 Update

The purpose of this memorandum is to update and expand upon the Wenck memo "Permit 18-153: Variance Analysis" dated August 7, 2018. This memo summarized local and regional stormwater management options throughout the Twin Lake Watershed in lieu of LifeTime Fitness constructing stormwater management as required by MCWD rules at their St. Louis Park facility (5525 Cedar Lake Road).

This update expands the evaluation to the Lamplighter Pond subwatershed (MC-100) immediately west of the 2018 study area and refines four opportunities previously identified in the in 2018 memo (Figure 1). Together, Wenck evaluated the 15 potential BMPs based on net total phosphorus (TP removal), abstraction volume, cost, life cycle cost, and normalized cost. BMPs were ranked using these factors and separated by public and private ownership. In the end, two projects were identified that meet all project goals: one on public property and one on private property.

Project goals identified in the "Alternative Stormwater Management Agreement" with LifeTime include total project budget not to exceed $490,000; TP reduction of 7.2 lb/yr; and abstraction volume of 28,734 cf.

Background

Wenck previously evaluated 16 BMPs within Twin Lakes subwatershed to improve pollutant removal, decrease runoff rates, and provide volume abstraction in the Twin Lake Subwatershed. Over the past two years, MCWD staff determined most of the BMPs to no longer be feasible or favorable for implementation. Of the 16, MCWD requested four to be refined and updated in 2020.

Since 2018, MCWD has conducted a more detailed investigation into two of the twelve no longer feasible or favorable from the 2018 study: BMP IDs 6 and 7 within the CTD property (north of the railroad and south of Cedar Lake Road). Further investigation revealed that the wetland is contaminated by lithium. As noted in a Wenck memo dated May 11, 2020, approximately 32,000 tons of white-colored, clay-like media is present over approximately 60% to 65% of the land area. The thickness of the waste media ranges from a thin layer (approximately 6") to up to about 10 feet. Regulatory approval would be necessary for any earth work in the area, and remedial options include removal and capping.

The estimated cost of removal approaches $2,000,000 and the cost of capping would likely be $700,000. These remedial costs make the two identified BMPs not cost-efficient. Therefore, they are no longer under consideration by MCWD.

Methods

Wenck determined potential BMP locations by cross-referencing vacant public and private land, public storm sewer, and 2020-2024 public works projects scheduled by the City of St. Louis Park (City). Using GIS and viewing data provided by MCWD and the City, Wenck identified six potential BMP locations.

MCWD directed Wenck to focus on "traditional", proven types of BMPs (i.e. stormwater ponds, infiltration basins), rather than developing or demonstration-type BMPs (i.e. reuse, manufactured treatment devices). Therefore, at five of the six potential locations, Wenck evaluated both an infiltration basin and stormwater pond. All soils within the study area are listed in the Web Soil Survey as "urban land", so further evaluation of soils is necessary if the MCWD or City wishes to move forward with one of the infiltration BMPs.

Wenck evaluated the performance of the fifteen BMPs (eleven from 2020 and four from 2018) using the MIDS Calculator. Evaluation assumptions included:

- For the areas without assigned soil hydrologic group, we assumed a type B soil with an infiltration rate of 0.45 in/hr;
- For stormwater ponds, we assumed an average depth of 3 ft;
- We assumed 0% dissolved phosphorus removal from stormwater ponds;
- For iron-enhanced sand filters, we assumed an average depth of 18 in;
- The MIDS Calculator assigns pollutant removal for ponds and iron-enhanced sand filters based on full treatment of the runoff from a 1.1-inch rainfall event. Most of the identified ponds and filters cannot treat this volume of water, so Wenck "prorated" pollutant removal using the ratio of the treatment depth to 1.1 inches.
- Most of the identified infiltration BMPs are undersized due to space limitations. The MIDS Calculator accounts for this through bypass of larger rain events.

Results

Figures 2 and 3 show the 15 potential BMPs at ten different locations throughout watersheds MC-100 and MC-101. Of the ten locations, six are publicly owned and four have private ownership.

For each of the 15 potential BMPs, Wenck calculated TP removal, abstraction volume, cost, life cycle cost, and normalized cost. We then ranked the BMPs using a "point system" and separated them by public and private ownership. For example, the project with the lowest construction cost was assigned a point value of 15 compared to the costliest project, which was assigned a point value of one. In the end, two projects were identified that meet all project goals: one on public property and one on private property.

Tables 1 and 2 summarize the BMP point rankings and note whether the BMP satisfies project goals.

- Recall that project goals were specified as total project budget not to exceed $490,000; TP reduction of 7.2 lb/yr; and abstraction volume of 28,734 cf.
- Project ID's in yellow font achieve all three goals.

- Project ID's in red font do not achieve at least one project goal. Bold red font does not achieve project goal.
- It may be possible to combine some projects to achieve all project goals.
- All pond BMPs do not meet the abstraction requirement.
- The four BMPs carried over from the 2018 are BMP IDs 3, 5, 11 and 14.

Table 1. Point ranking for BMPs under public ownership.

BMP ID	Points - Public Ownership					Abstraction (cf)	TP Red (lb/yr)	Construction Cost
	NetTP	ConstCost	LifeCost	NormCost	Total			
20a	14	10	10	15	49	45,227	43.2	$215,470
14	4	15	14	7	40	**8,784**	**3.4**	$140,671
19	7	11	11	9	38	**17,548**	**6.9**	$211,431
18a	15	3	4	13	35	47,329	52.0	**$571,964**
3	1	14	15	1	31	**0**	**0.4**	$185,000
5	12	4	2	11	29	**0**	35.9	**$485,500**
20b	6	7	7	8	28	**0**	**6.8**	$278,321
18b	8	2	3	4	17	**0**	**7.1**	**$637,528**

Table 2. Point ranking for BMPs under private ownership.

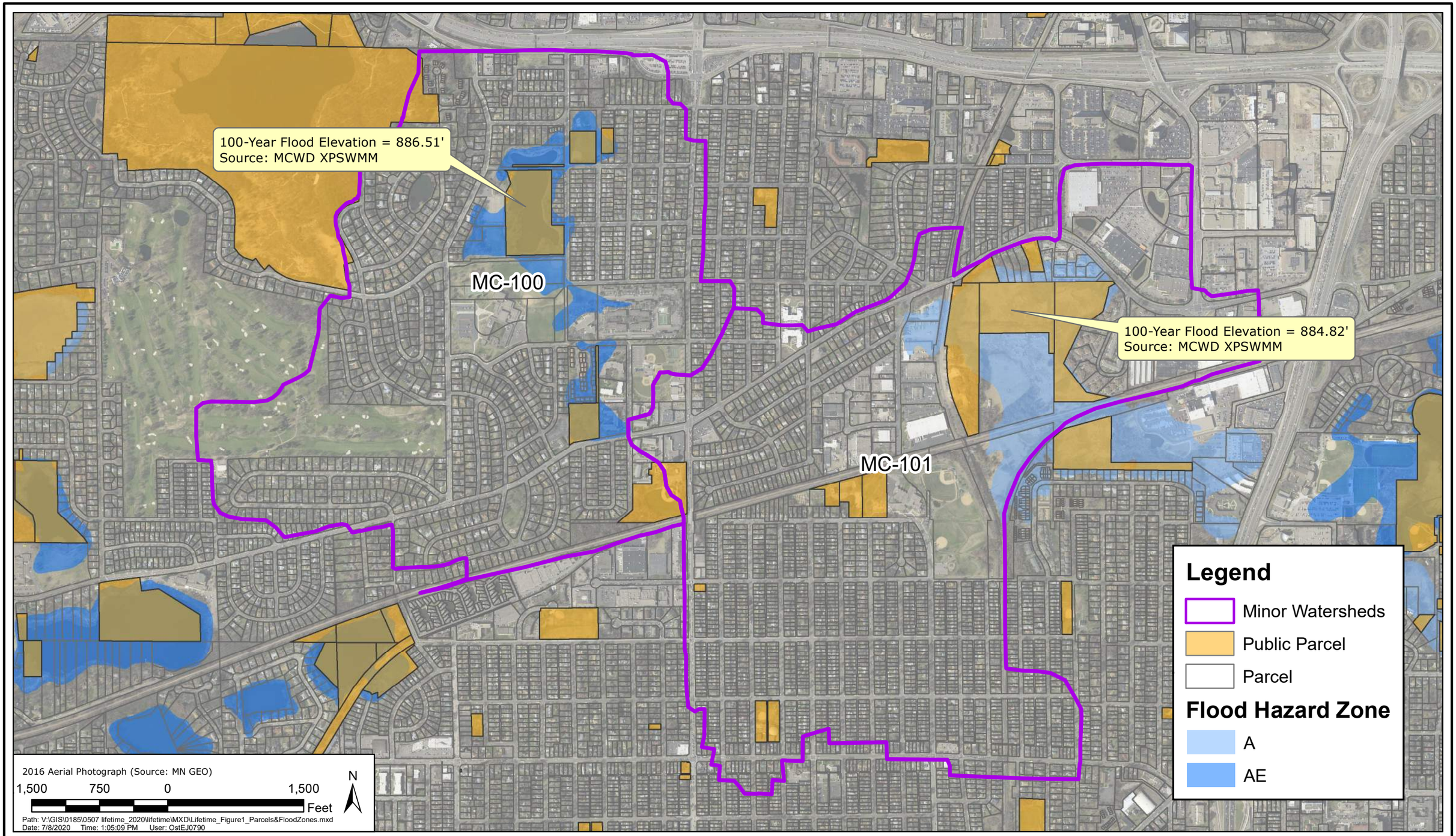
BMP ID	Points - Private Ownership					Abstraction (cf)	TP Red (lb/yr)	Construction Cost
	NetTP	ConstCost	LifeCost	NormCost	Total			
21a	9	13	12	10	44	**18,616**	8.5	$195,079
22a	13	8	8	14	43	**18,616**	37.9	$257,507
17a	11	9	9	12	41	80,116	24.6	$255,020
21b	2	12	13	2	29	**0**	**1.2**	$209,413
17b	5	5	5	6	21	**0**	**5.3**	$363,299
22b	3	6	6	3	18	**0**	**2.7**	$305,317
11	10	1	1	5	17	**0**	12.8	**$940,147**

Conclusions & Recommendations

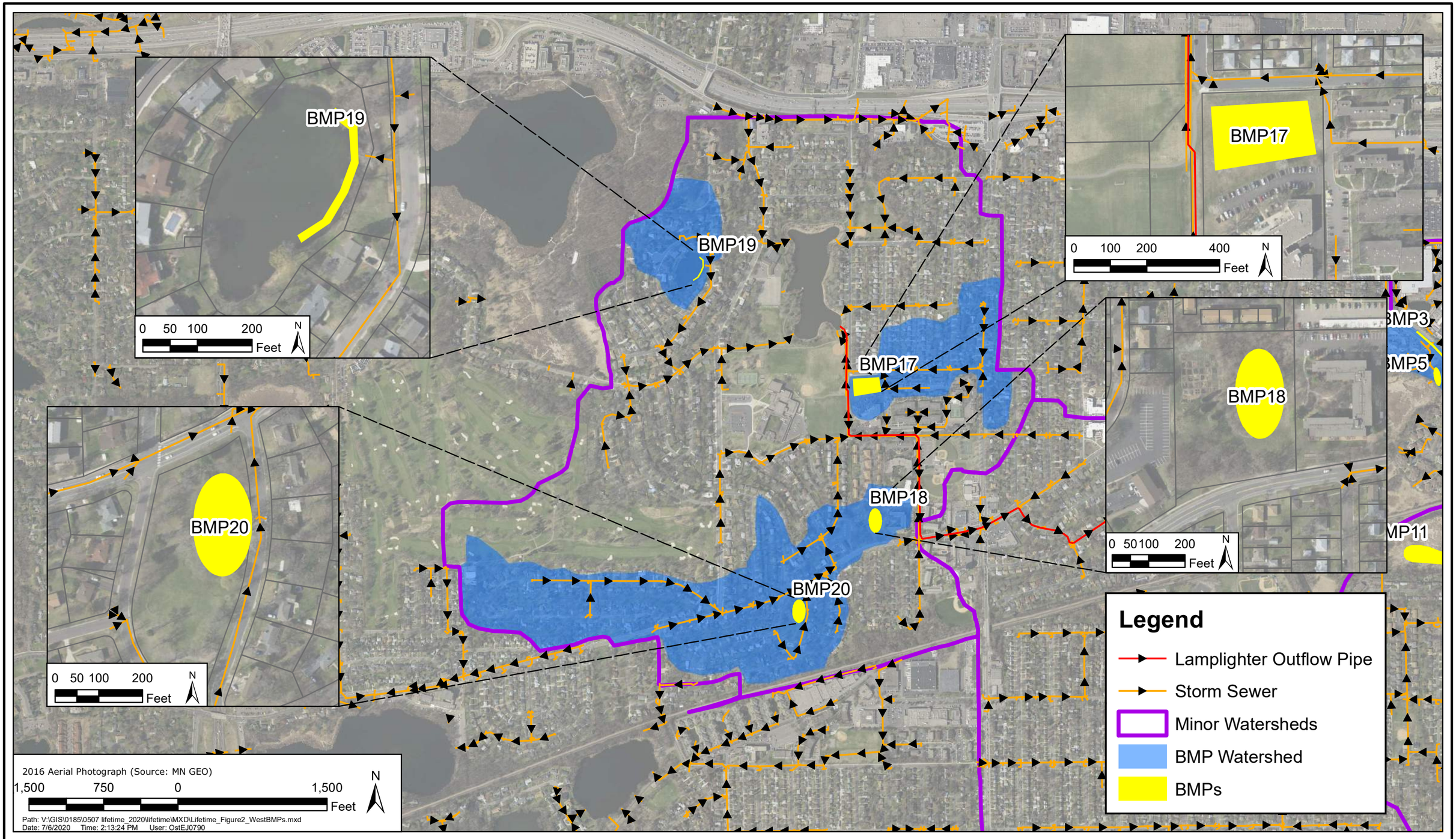
This memo detailed how Wenck refined four BMPs from a 2018 feasibility study and identified eleven additional BMPs west of the 2018 study area. Of the fifteen BMP options, Wenck found that BMP IDs 17a and 20a achieve all three study goals related to project cost, TP removal, and abstraction. However, the thirteen remaining BMPs should not be removed from consideration; some nearly satisfied the project goals, and with more study or information, could be more effective candidates than BMPs 17a and 20a. Additionally, it may be practical to combine two or more BMPs that individually do not to achieve project goals.

We recommend MCWD proceed with the next steps:

1. Further vet potential BMP locations by discussing these study results and recommendations with City staff;
2. Conduct soil borings at potential infiltration BMPs and research levels of possible contamination; and
3. Conduct site-specific topographic and utility surveys.



MINNEHAHA CREEK WATERSHED DISTRICT	WENCK Responsive partner. Exceptional outcomes.	JULY 2020
Parcels and Flood Hazard Zones		Figure 1



MINNEHAHA CREEK WATERSHED DISTRICT

West BMP Locations

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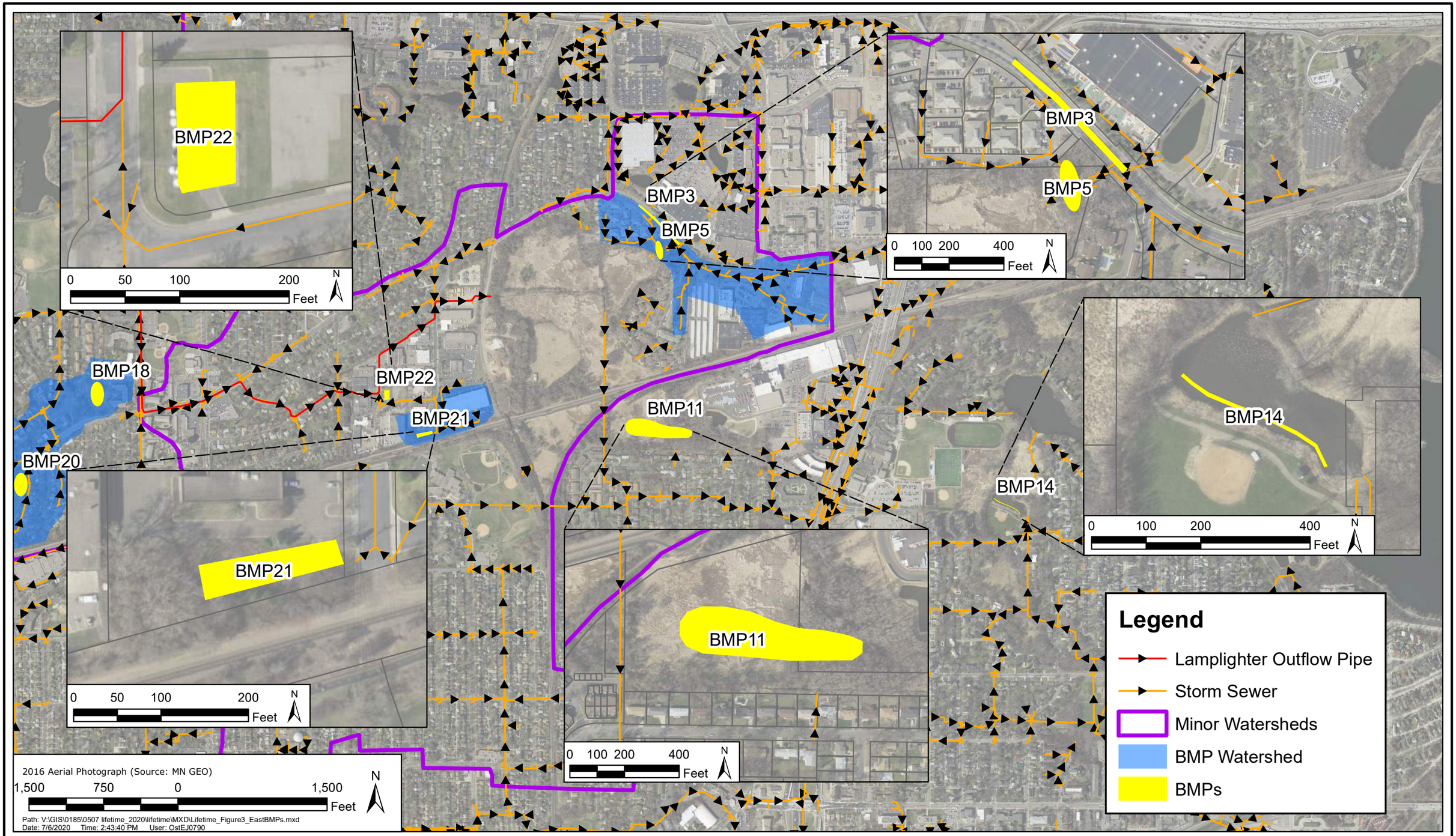
JULY 2020

Figure 2



MINNEHAHA CREEK WATERSHED DISTRICT

East BMP Locations

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JULY 2020

Figure 3

Attachment E

Stantec

Memo

To:	Erin Manlick, Permitting Coordinator	From:	Anne Wilkinson, PhD Todd Shoemaker, PE (MN, IA), CFM
File:	LifeTime Memo 2021	Date:	June 4, 2021

Introduction

This memorandum updates and expands upon the Wenck memos "Permit 18-153: Variance Analysis" (dated August 7, 2018), and "St. Louis Park LifeTime BMP Feasibility Study – 2020 Update" (July 7, 2020). Since the 2020 analysis, we understand that Minnehaha Creek Watershed District (MCWD) staff met with City of St. Louis Park (City) staff, discussed the options presented in the July 7, 2020 memo, and identified four additional sites. Therefore, this third iteration of the analysis provides an overview of the first two iterations and summarizes our analysis of the four sites identified by the City:

1. 1800 Pennsylvania Ave S. (Lamplighter Pond)
2. 2001 Pennsylvania Ave S. (St. Louis Park Middle School)
3. 2541 Nevada Ave S. and 2601 Pennsylvania Ave S. (Cedar Knoll Park)
4. 6211 Cedar Lake Rd (CTD House Parcel) and adjacent City-owned parcels

Purpose and Background

The MCWD Board of Managers approved a variance in 2018 for LifeTime Fitness to contribute a fee in-lieu of constructing a stormwater management BMP at their site in St. Louis Park. Variance conditions of the "Alternative Stormwater Management Agreement" with LifeTime include a total project budget not to exceed $490,000; TP reduction of 7.2 lb/yr; abstraction volume of 28,734 cf; and for MCWD to advance the project before the agreement's expiration on August 23, 2023.

Since approving the variance, MCWD has evaluated a number of potential sites and BMPs in the Twin Lake Watershed. In the 2018 analysis ("Permit 18-153: Variance Analysis"), Wenck evaluated 16 BMPs within Twin Lakes subwatershed to improve pollutant removal, decrease runoff rates, and provide volume abstraction in the Twin Lake Subwatershed. Over the past two years, MCWD staff determined most BMPs to no longer be feasible or favorable for implementation. Of the 16, MCWD requested four to be refined and updated in 2020.

The "St. Louis Park LifeTime BMP Feasibility Study – 2020 Update" memo detailed how Wenck refined four BMPs from the 2018 study and identified eleven additional BMPs west of the 2018 study area. After reviewing these options with City staff, MCWD requested Stantec to review the additional site locations noted above and summarized below.

Potential BMP Feasibility

Methods/Assumptions

Stantec determined potential BMPs by cross-referencing vacant public land, public storm sewer, and 2020-2024 public works projects scheduled by the City. Stantec evaluated the five BMPS based on the following assumptions:

General Assumptions

- Filtration is necessary at all sites because of potential soil contamination or poorly infiltrating soils.
- Filtration doubles the treatment volume requirement (50% credit) per MCWD permitting requirements (57,500 cf).
  - Treatment volume requirement for filtration systems can be reduced by using MCWD Rule N 3.c.2.
  - This requires additional modeling to prove the proposed filtration systems can provide equivalent TP/TSS reduction to an infiltration system.
- Watersheds delineated based on City storm sewer (Figure 1).
- For the areas without assigned soil hydrologic group, we assumed a type B soil.

Location 1 - 1800 Pennsylvania Ave S. (Lamplighter Pond)

BMP 1 – MTD from Lamplighter Pond

- Infeasible to tie into the existing force main from the lift station and replacing the lift station is cost prohibitive.
- Add auxiliary pump, filter runoff through a manufactured treatment device (MTD), and discharge back to Lamplighter Pond.
- TP concentration calculated from modeling the outflow from Lampligher Pond in P8 (25 ppm TP).
- Prorated the modeled TP concentration to the required abstraction volume to determine the TP load.
  - 25 ppm TP X 57,500 cf = 86.2 lbs TP directed to filter from abstraction volume
  - For comparison, 1.1-inch rainfall generates 286 lb TP to Lamplighter Pond.
- Pump and cartridge system based on required abstraction:
  - 57,500 cf X 48 hrs = 0.33 cfs
  - Cartridge flow rates vary from 5-22 gpm = 0.01-0.049 cfs
  - Will need filter vault with 7-33 cartridges
- MTD achieves approximately 70% TP removal.
- DNR Public Water Permit may be required due to disturbance of the shoreline and/or modification of pump system.
- Coordination needed with City Public Works to better understand lift station operation, limitations, viability of adding an auxiliary pump, and design considerations.

Location 2 - 2001 Pennsylvania Ave S. (St. Louis Park Middle School)

BMP 2.1 Underground Storage System and MTD

- Sized based on filtration volume treatment requirement (57,500 cf).
- Also, could be evaluated per MCWD Rule N 3.c.2.
- Divert runoff from the 42” pipe to the north of the school, attenuate runoff within storage system, filter runoff through MTD, and then discharge directly to Lamplighter Pond.

- MTD achieves approximately 70% TP removal.
- Conduct additional hydraulic modeling to refine hydraulic design and calculate high water levels (HWL).
- Conduct soil borings to determine if infiltration may be feasible and/or if special disposal is necessary for excavated soils (i.e. contamination).
- Construction access may be limited to summer due to school operations and activities.

BMP 2.2 Stormwater reuse system to irrigate sports fields

- MIDS Calculator to determine the cistern size and water quality.
- Underground cistern sized for abstraction requirement (28,734 cf).
- Irrigation area is 10 acres of St Louis Park Middle School ball fields.
- Design cost includes irrigation system, cistern, and infrastructure to house the control systems.
- Conduct additional hydraulic modeling to refine hydraulic design and calculate high water levels (HWL).
- Conduct soil borings to determine if special disposal is necessary for excavated soils (i.e. contamination).
- Construction access may be limited to summer due to school operations and activities.

Location 3 - 2541 Nevada Ave S. and 2601 Pennsylvania Ave S. (Cedar Knoll Park)

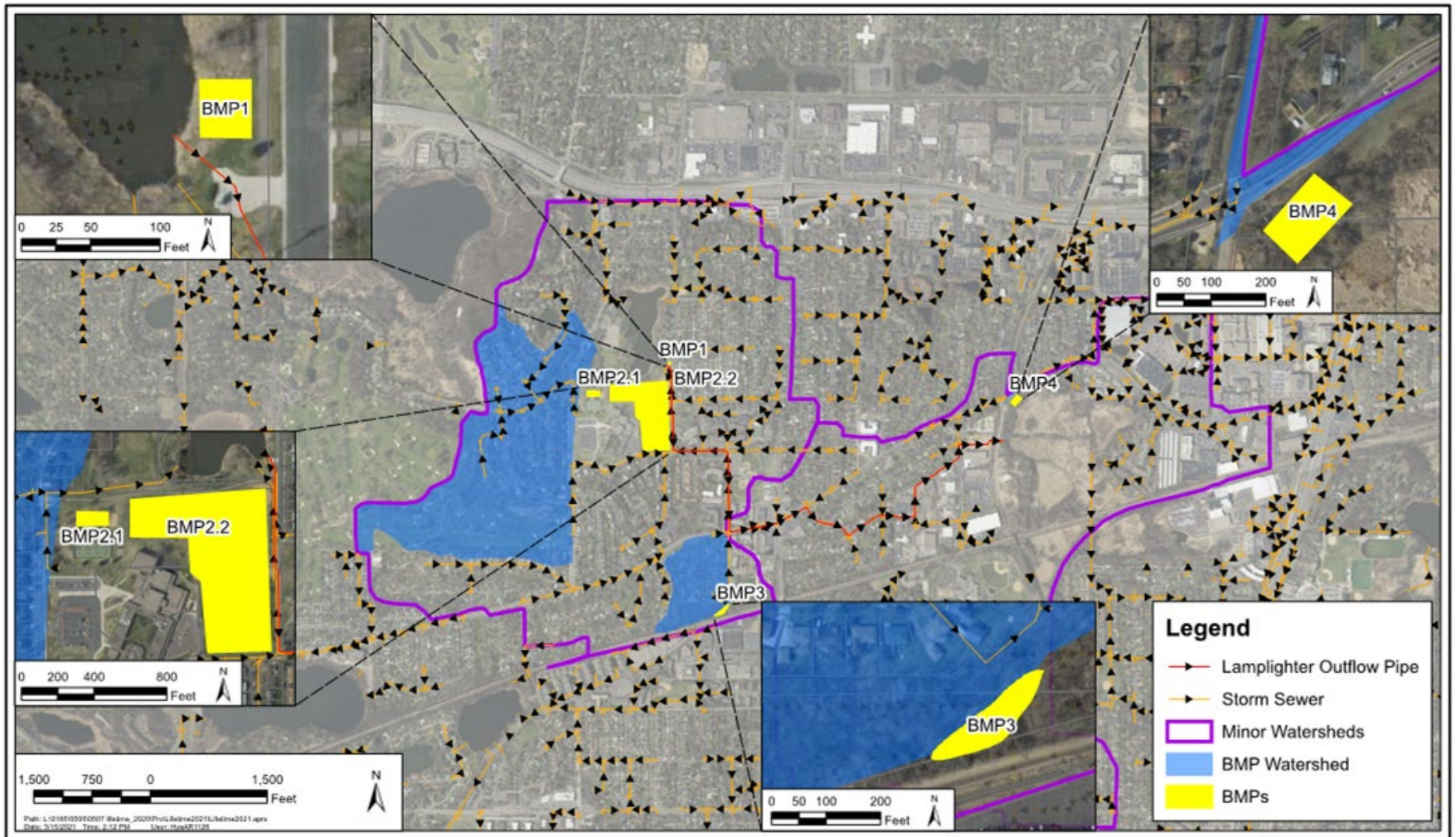
BMP 3 – Stormwater Pond with Iron-Enhanced Sand Filter (IESF)

- Neighborhood to the north drains to new stormwater pond with IESF.
- Separate inlet to and outlet from new pond to improve removal efficiency.
- Conduct multiple site visits and stormwater monitoring to evaluate potential to grow duckweed in future pond. Previous Stantec experience indicates presence of duckweed and a basin protected from wind can affect IESF performance.
- Calculations assume average pond depth of 4 ft; footprint approximates existing topography; 1.1-inch runoff from watershed is 27,252 cf; pond is approximately 1 acre; size bench to increase 6” for filter; anything more will use outlet structure.
- Conduct additional hydraulic modeling to refine hydraulic design and calculate high water levels (HWL).
- Conduct soil borings to determine if special disposal is necessary for excavated soils (i.e. contamination).
- Conduct off-site wetland delineation to determine if further on-site investigation is necessary.
- Project likely requires significant tree removal and replacement per City ordinance.

Location 4 - 6211 Cedar Lake Rd (CTD House Parcel) and adjacent City-owned parcels

BMP 4 – Stormwater Pond with IESF

- Small watershed from Cedar Lake Rd generates 0.61 lb/yr TP, which is well below 7.2 lb/yr goal.
- Analysis only considered two manholes on Cedar Lake Rd east of the railroad.
- Drainage west of the railroad could be included, but additional and likely lengthy permitting needed from railroad.
- Conduct multiple site visits and stormwater monitoring to evaluate potential to grow duckweed in future pond. Previous Stantec experience indicates presence of duckweed and a basin protected from wind can affect IESF performance.
- Additional investigation and permits for wetland, soil borings/contamination, and demolition of existing house.



MINNEHAHA CREEK WATERSHED DISTRICT		MARCH 2021
BMP Locations		Figure 1

BMP Ranking

As in the 2020 analysis and memo, Stantec calculated TP removal, abstraction/filtration volume, construction cost, life cycle cost, and normalized cost (Appendix 1). We then ranked the BMPs using a "point system" (Table 1 and Figure 2). For example, the project with the lowest construction cost was assigned a point value of 5 compared to the costliest project, which was given a point value of one. The construction costs listed in Table 1 include 10% for permits and legal fees; 30% for engineering design and construction observation; and a 20% contingency. We also included the column "Timeframe to Implement" to quantify how quickly these projects could be implemented when compared to each other.

Table 1. Point ranking for proposed BMPs.

	Points							
BMP	Net TP	Construction Cost	Life Cycle Cost	Normalized Cost	Timeframe to Implement	Total Points	TP Reduction (lb/yr)	Construction Cost
1	5	3	3	5	3	19	60	$430,200
2.1	4	1	1	2	2	10	25	$997,900
2.2	3	2	2	3	2	12	13	$577,464
3	2	5	5	4	5	21	12	$260,676
4	1	4	4	1	4	14	0.1	$322,146

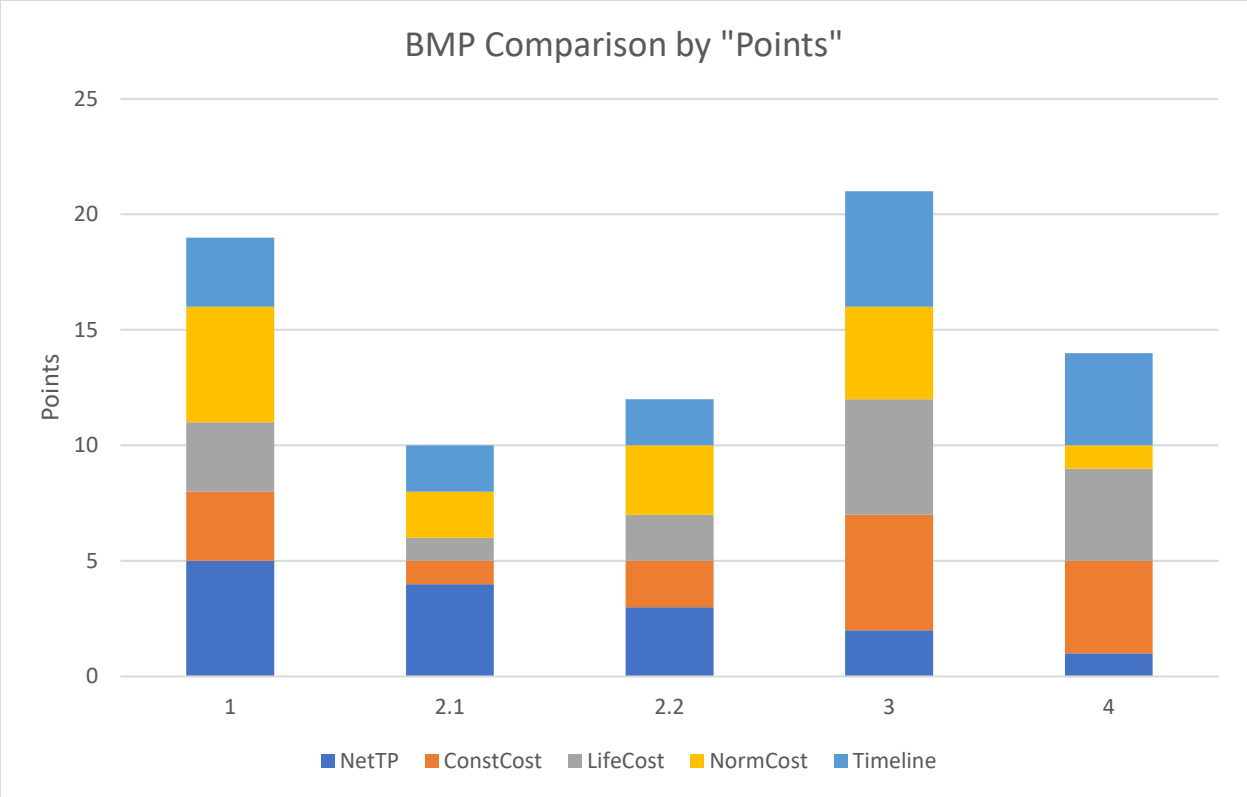


Figure 2: Point ranking comparison

Recommendations & Next Steps

Based on the variance/project requirements and the point ranking, Stantec recommends further consideration of BMPs 1 and 3. Both BMPs proposed at location 2 are cost prohibitive and the watershed at location 4 is not large enough to provide the required TP reduction. However, BMPs 2.1 and 2.2 could still be considered if size/volume, and therefore cost, is reduced to meet MCWD Rule N 3.c.2.

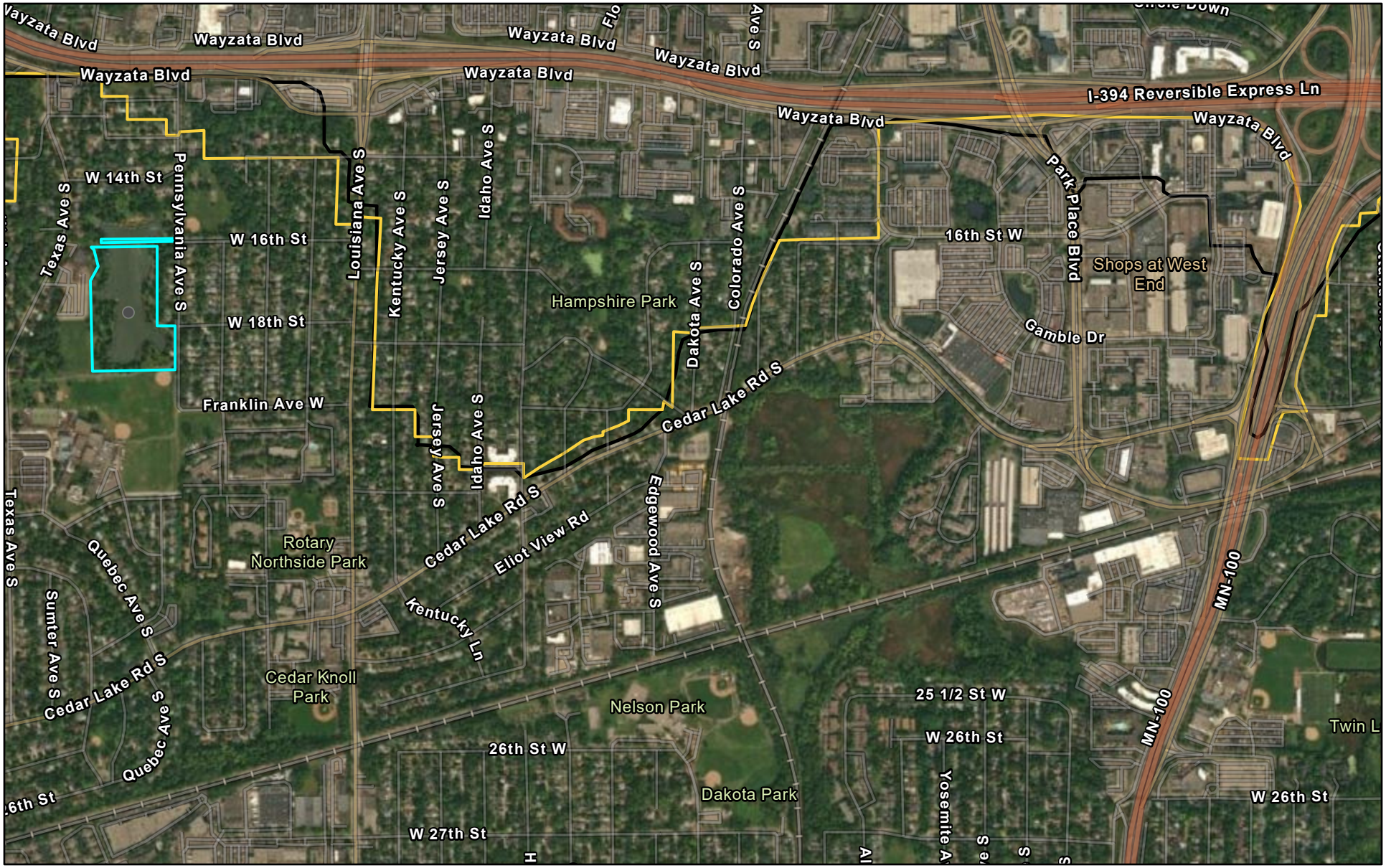
Key considerations for BMP 1 include obtaining a DNR Public Waters Permit and incorporating the filter without negatively affecting the primary function of the lift station. Significant coordination with City staff will be necessary to understand operation and maintenance of the existing lift station and designing the auxiliary pump and filter to fit that system.

For BMP 3, key considerations include wetland delineation and permitting, if necessary, soil borings and coordination with the City regarding tree removal and replacement. Hydraulic modeling will also be important to ensure function of the IESF and that the project does not negatively affect any adjacent property or structures.

The analysis provided here-in for all BMPs was conducted with the best available data. Should any one of these BMPs move forward, site-specific topographic, boundary and utility surveys will be necessary to confirm assumptions.

Attachment F

Lamplighter Pond - 1800 Pennsylvania Avenue



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MCWD Legal Boundary

MCWD Hydrologic Boundary

1:18,056

0 0.1 0.2 0.4 mi

0 0.17 0.35 0.7 km

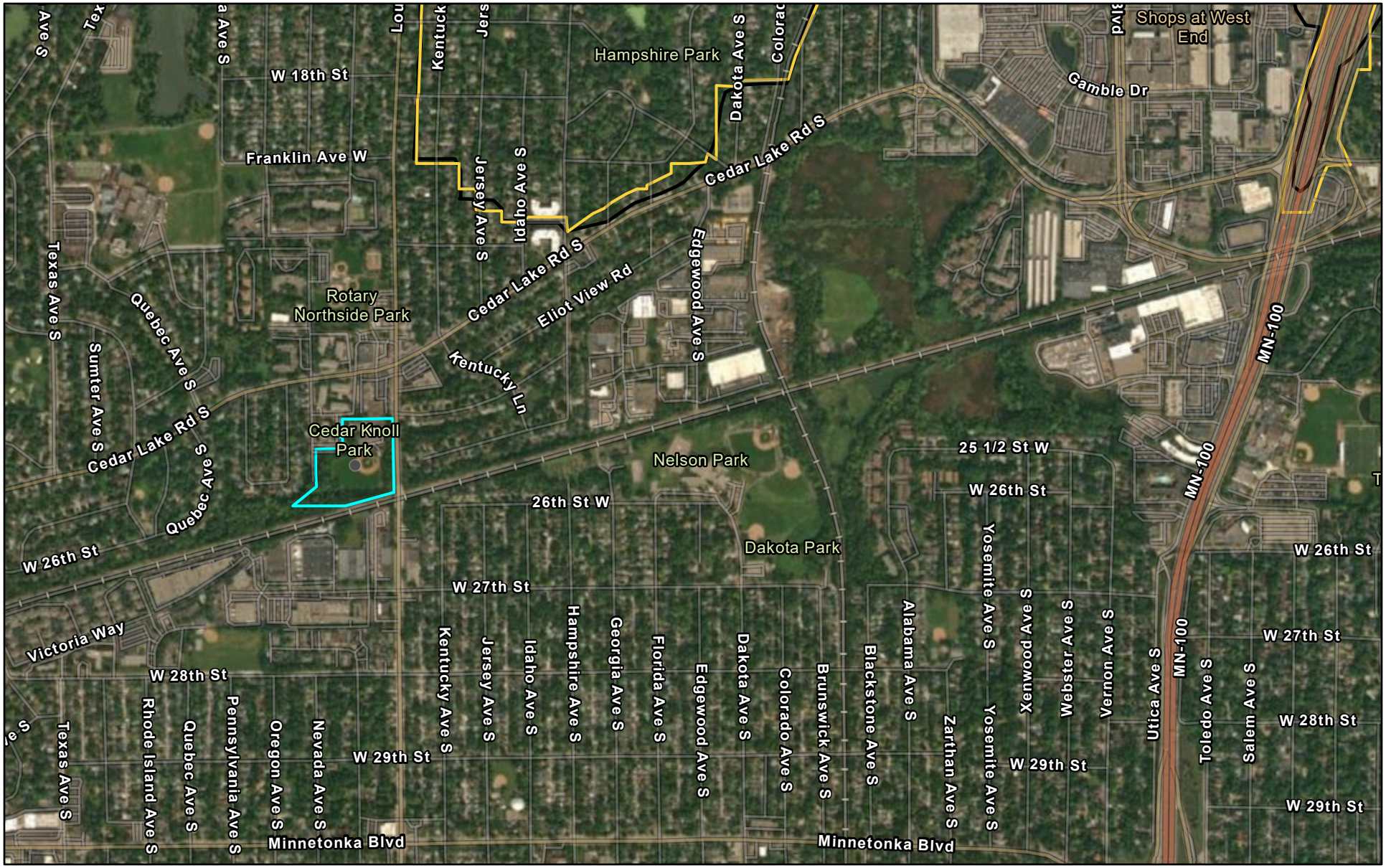
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Sources: Esri,

MCWD

Earthstar Geographics | MNGeo, MNDOT, Foth | Source: USDA NRCS, Esri | Airbus,USGS,NGA,NASA,CGIAR,NCEAS,NLS,OS,NMA,Geodatastyrelsen,GSA,GSI and the GIS User Community | Minnesota Department of Natural Resources (DNR) | John R. Borchert

Attachment G

Cedar Knoll Park - 2541 Nevada Ave S



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MCWD Legal Boundary

MCWD Hydrologic Boundary

1:18,056

0 0.1 0.2 0.4 mi

0 0.17 0.35 0.7 km

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Sources: Esri,

MCWD

Earthstar Geographics | MNGeo, MNDOT, Foth | Source: USDA NRCS, Esri | Airbus,USGS,NGA,NASA,CGIAR,NCEAS,NLS,OS,NMA,Geodatastyrelsen,GSA,GSI and the GIS User Community | Minnesota Department of Natural Resources (DNR) | John R. Borchert