Minnehaha Creek Watershed District *REQUEST FOR BOARD ACTION*

MEETING DATE: December 19, 2019

TITLE: Authorization to Release RFP for MCWD Campus Improvements Design Services

RES. NUMBER: 19-109

PREPARED BY: Laura Domyancich

E-MAIL: ldomyancich@minnehahacreek.org **TELEPHONE:** 952-641-4582

REVIEWED BY: ☐ Administrator ☐ Counsel ☒ Program Mgr.: Michael Hayman
☐ Board Committee ☐ Engineer ☐ Other

WORKSHOP ACTION:

☐ Advance to Board mtg. Consent Agenda. ☐ Advance to Board meeting for discussion prior to action.

☐ Refer to a future workshop (date):_____ ☐ Refer to taskforce or committee (date):_____

☐ Return to staff for additional work. ☐ No further action requested.

☒ Other (specify): Seeking approval at December 19, 2019 Board Meeting

PURPOSE or ACTION REQUESTED:
Authorization to release a request for proposals (RFP) for design and construction oversight for campus improvements at the Minnehaha Creek Watershed District office.

PROJECT/PROGRAM LOCATION:
15320 Minnetonka Blvd, Minnetonka

PROJECT TIMELINE:

December 2019	Issue RFP for design services
February 2020	Award design contract
April 2020	90% design plans complete
Spring/Summer 2020	Project construction

PROJECT/PROGRAM COST:
2020 budgeted cost: $414,000

PAST BOARD ACTION:
Not applicable

SUMMARY:
The Minnehaha Creek Watershed District (MCWD or District) has identified the need to make improvements to the MCWD campus. This need was initially identified in 2013, shortly after the District moved its offices to the building at 15320 Minnetonka Boulevard, Minnetonka. At that time, staff noted issues such as limited parking, the lack of greenspace, and minimal stormwater treatment for the extent of impervious surfaces. The desire to correct these issues and incorporate best management practices to serve as a demonstration for visitors to the office led to the District contracting with Barr Engineering to develop design plans to implement an exterior

landscaping and stormwater management plan. Design progressed to the 60% phase with cost estimates reaching over $600,000. The cost, combined with limited opportunities to use the landscape as a demonstration site, led the Board of Managers to defer the design plans and instead approve smaller, discrete campus improvements over the last six years. This has included minor repairs to the parking lot surface and small landscape improvements. The parking lot patching has proved inadequate due to underlying drainage issues within the site and the poor condition of the base underlying the parking areas causing water to pond in low areas, further degrading the bituminous surface and causing icing issues in the winter. This work has also been cumulatively costly due to the frequency with which repairs are needed. In addition to the poor condition of the lot surface, the number of parking stalls is inadequate, and the ADA-accessible parking stalls need improvement.

In June 2019, staff worked with Wenck to investigate full replacement and expansion of the parking lot and driveway to the west of the building, drainage improvements within the parking lot and sidewalks, stormwater reuse potential, incorporation of a storage and a refuse enclosure into the site, and broader landscape enhancements. The parking lot work was determined to disturb more than 5,000 square feet requiring additional stormwater treatment for the site. This investigation led to the development of three concept plans: 1) a base plan which contemplated only a mill and overlay of the existing bituminous surface, 2) a more advanced plan which included a full replacement of the parking lot and stormwater treatment to meet city of Minnetonka stormwater requirements, and 3) a more comprehensive plan that replaced the parking lot and shared drive, provided additional stormwater treatment, and included broader landscape improvements. During the July 11, 2019 Operations and Programs Committee meeting discussion regarding 2020 budget priorities, the Committee directed staff to pursue full-site improvements with a budget of $414,000 set for design and construction.

The driveway to the west of the District office is a shared drive with Campbell-Sevey (C-S), and staff have coordinated with the owners of C-S to discuss the concept plan for the District campus and C-S's participation in this project. C-S would like to replace its side of the driveway and participate financially, but have concerns over cost estimates developed as part of the concept plan. To attenuate these concerns, staff will structure future bid documents to include the C-S work as a range of bid alternates including: 1) saw-cutting down the property line and doing no improvements, 2) doing only a mill and overlay on the C-S portion, and 3) full replacement of the entire shared drive, which will allow C-S to proceed with a full understanding of cost.

With this initial investigation and concept level plans complete, staff recommend the solicitation of design services, which may include landscape architecture and engineering, through a competitive request for proposals (RFP) process. Staff's expectation is for the consultant team to utilize the concept plans as a base and advance the design through final plans and bid documents. In the interest of creating a robust design that is responsive to existing conditions and long-term goals for the site, the RFP seeks a team that will creatively address obstacles of a space-constrained site, use stormwater management as an amenity, and link currently discrete landscaped areas into a cohesive design.

The RFP (attached) is organized into four discrete sections:

- Background and Project Overview: includes project information, including an overview of each anticipated design element and a summary of work completed to date through the development of the preliminary concept plan;
- Scope of Services: a preliminary overview of required tasks, including project design, bid document creation and bid support, and construction management;
- Instructions to Proposers: an overview of submittal requirements, timeline, and selection criteria;
- Disclosures: documentation of the District's rights and proposers liabilities in the preparation of responses to the RFP.

The RFP will be open for approximately four weeks with an anticipated release date of December 23, 2019 and a submittal deadline of January 20, 2020. The proposals will be evaluated by District staff. Staff anticipates seeking Board approval of the design contract and consultant selection at the February 13, 2020 meeting.

ATTACHMENTS:

- Request for Proposals for MCWD Campus Improvement Project

RESOLUTION

RESOLUTION NUMBER: 19-109

TITLE: Authorization to Release RFP for MCWD Campus Improvements Design Services

WHEREAS the Minnehaha Creek Watershed District has identified the need to make site-wide improvements to its campus at 15320 Minnetonka Boulevard, Minnetonka;

WHEREAS on July 11, 2019, the MCWD Operations and Programs Committee directed staff to pursue comprehensive site improvements that include replacement of parking areas, walkways, and a shared driveway, associated stormwater treatment and drainage improvements, on-site storage, and landscaping;

WHEREAS staff have coordinated with representatives from Campbell-Sevey, with which MCWD shares a driveway requiring replacement;

WHEREAS a concept plan has been developed which has provided estimated costs incorporated into the 2020 MCWD budget and which will inform future design direction; and

WHEREAS staff drafted the request for proposals (RFP) to ensure that the scope and solicitation process fulfill long-term goals for the site including accommodating staff and visitor parking and safe movement through the exterior of the site, enhanced stormwater management, on-site equipment storage, and a cohesive landscape;

NOW, THEREFORE, BE IT RESOLVED that the Minnehaha Creek Watershed District Board of Managers authorizes the release of the request for proposals for design services for the MCWD campus improvements and allows for the administrator to make non-substantive edits to the document and schedule based on advice of MCWD legal counsel.

Resolution Number 19-109 was moved by Manager _____, seconded by Manager _____. Motion to adopt the resolution ___ ayes, ___ nays, ___abstentions. Date: December 19, 2019.

_____ Date: _____
Secretary

MINNEHAHA CREEK WATERSHED DISTRICT

QUALITY OF WATER QUALITY OF LIFE

REQUEST FOR PROPOSALS

Landscape Architecture and Engineering for

MINNEHAHA CREEK WATERSHED DISTRICT CAMPUS IMPROVEMENT PROJECT

15320 Minnetonka Blvd, Minnetonka, MN 55345

Minnehaha Creek Watershed District

PART 1: BACKGROUND AND PROJECT OVERVIEW

General

The Minnehaha Creek Watershed District (MCWD or District) is seeking a qualified consultant to provide landscape architecture and engineering design services for the MCWD Campus Improvement Project. The project involves design, cost analysis, plans and specifications, interpretive signage, permitting, adjacent landowner engagement, and construction oversight with the District for the construction of site improvements.

MCWD will host an optional informational meeting on this RFP on January 7, 2020 at 1:00 pm at the MCWD office. You are encouraged to RSVP to Laura Domyancich, MCWD Planner-Project Manager.

This project is focused on implementation of site improvements within the parking areas and shared driveway, improvement and expansion of stormwater management, and enhancement of the existing landscape within the campus. The goals for this project include:

- Replace, rather than repair, the parking lot and shared drive and use this opportunity to increase parking for the site.
- Build an enclosure for refuse and recycling dumpsters and build a simple storage garage for MCWD field equipment.
- Cost-effectively make campus improvements that address long-term drainage issues, enhance existing landscaping, and integrate stormwater management into the landscaping.
- Use these improvements as a demonstration of basic stormwater features that could be implemented in both residential and commercial sites.

This may be a shared project with Campbell-Sevey, the property owner to the west of the MCWD campus, as the continuous driveway is shared by the two entities, which would require both the District and Campbell-Sevey to be engaged in the design process for the shared drive only. The final design will require approval by both the District Board of Managers and Campbell-Sevey, should Campbell-Sevey participate, and the warranty associated with the design will run to both the District and Campbell-Sevey.

The selected consultant will be required to enter into agreement terms as substantially set forth in the contract template, Attachment A of this document. The submittal requirements and timeline can be found on pages 8-9 of this RFP.

Project Description

The MCWD campus is approximately 1.1 acres, including 0.2 acre of wetland and wetland buffer which is part of the larger wetland complex associated with Minnehaha Creek. A constructed stormwater pond meeting wetland criteria was also delineated in the project area, but the City of Minnetonka will not regulate this as wetland. The remaining 0.9 acre of the site is upland with 0.6 acre of impervious surfaces. The extent of impervious surface within the campus guided the MCWD to incorporate into the concept plan enhanced stormwater management that is integrated into the site with vegetation improvements.

The poor condition of the existing parking lot and shared drive is related to age and poor drainage. Water pools in specific areas causing unsafe winter conditions and leading to degradation of the bituminous surface. Because the underlying base material of the lot and drive create the pooling of water and poor drainage, the District desires to remove the existing bituminous surface, correct the base material, and lay a new bituminous surface that slightly expands the parking area and improves accessibility.

Given the area of disturbance the project will create, stormwater management is needed on the site to attenuate drainage issues, meet stormwater regulatory requirements, and fulfill a desire of MCWD to integrate highly effective stormwater management into the site as a whole. The concept plan developed by Wenck Associates (Attachment B) includes expansion of the existing infiltration basin at the north extent of the property and its conversion to a filtration basin as well as other minor drainage improvements.

The inclusion of a small cistern to capture roof runoff at the southwest corner of the building has been considered, but should be investigated further by weighing cost and overall utility given the current configuration of downspouts on the building.

The District is also looking to incorporate stormwater management into landscape improvements while enhancing the campus landscaping overall. An existing prairie garden adjacent to Minnetonka Boulevard is to be expanded, turf on the west side of the building is to be reduced and replaced with a prairie planting, and the wetland buffer at the northern extent of the property is to be enhanced.

This project also seeks to address on-site storage issues and a long-standing requirement of the 1986 Planned Unit Development (PUD) Agreement to build an enclosure for the refuse and recycling dumpsters at the northwest corner of the lower parking lot. The concept plan shows a potential configuration.

Additional detail on these project elements is included below.

Parking Lot, Parking Expansion, and Shared Drive

The existing parking lots at the north and south ends of the property and the shared drive between the MCWD building and the Campbell-Sevey building have a bituminous surface with concrete curbs. The surface has been patched many times but continues to degrade due to age and poor drainage, which

also causes safety issues with ice. Due to its condition, this project will include the complete removal of the bituminous surface and full reconstruction including repairing the base material to correct drainage, a small expansion of the parking area along the shared drive, and incorporating stormwater infrastructure within the parking area and curbs. The existing concept design proposes removal of a small median and a portion of the turf area to the west of the MCWD building to increase parking by 7 spaces. Through restriping of the north parking lot to compact-size parking stalls, space could be gained to place an approximately 12' x 22' storage garage.

Incorporated into the parking lot are a portion of the proposed stormwater management improvements including downspout extensions and perforated pipe to outlet run-off at curb faces and trench drains that direct this roof run-off to pre-treatment structures and the filtration basin.

Several underground utilities lie in the shared drive and parking lot areas.

Stormwater Management

Increased impervious surface and the extent of site disturbance related to the project requires total phosphorus, stormwater rate, and volume control regulatory requirements to be met by stormwater improvements. The concept plan proposes three improvements to meet these stormwater requirements: expansion of the existing infiltration basin and its conversion to a filtration basin with an outlet structure, enhancement of the wetland buffer on the north of the property, and conversion of a large turf area west of the building to prairie.

The existing infiltration basin on the north end of the site receives surface flow from the parking lot via two curb cuts. Based on aerial photo review, it has been determined that this basin was excavated from surrounding upland. A 2019 wetland delineation indicated that the basin met wetland criterion including saturation and high water table. However, the City of Minnetonka's Notice of Determination (Attachment H) for the delineation confirmed that the pond was created for the purpose of holding stormwater and would not be regulated as wetland. This determination allows the basin to receive additional stormwater, be expanded, and be converted to a filtration basin with an outlet structure. The concept plan proposes the installation of two pre-treatment structures (Rain Guardian) in the curb to the south of the basin which will receive both surface flow and roof run-off via two trench drains connected to either solid wall or perforated pipe running from downspouts on the northwest and northeast corners of the building.

The concept plan also proposes to enhance the wetland buffer of the large wetland complex to the north for additional stormwater credit. The existing buffer has been managed for invasive species, but fluctuating water levels in this area support a low-diversity plant community and invasive species including narrow-leaf cattail and reed canary grass persist. The buffer could be enhanced by more intensive management of the invasive species and supplemental seeding and/or planting.

The large turf area to the west of the building is proposed to be reduced slightly with expansion of the bituminous surface of the shared drive to establish 5 parallel parking stalls along the new curb. The remaining turf area could be converted to native prairie further contributing to stormwater credits required for the site. New plantings should be designed to a standard of low maintenance and inputs and utilization of Minnesota-native plants.

Stormwater Reuse

The inclusion of a small cistern to capture roof runoff at the southwest corner of the building has been considered, but should be investigated further by weighing cost and overall utility given the current configuration of downspouts on the building. The majority of the roof drainage goes to the southeast and northwest corners of the building, which may rule out a cistern as an option. Another consideration is the opportunity to incorporate a cistern to be a site amenity, architectural feature, or public education feature despite the potentially limited stormwater benefit.

Refuse Enclosure

The 1986 Planned Unit Development (PUD) Agreement between the developer for the MCWD office property and the City of Minnetonka required an enclosure for the refuse and recycling dumpsters which are currently located in the northwest corner of the parking lot. The City of Minnetonka will approve the design of the refuse enclosure.

Storage Garage

Currently, field equipment used by both monitoring and operations staff is stored off-site as the MCWD building lacks adequate storage space. In order to bring stored equipment on-site, this project proposes the construction of a simple storage garage to be placed in the north parking lot. This garage need not be heated or powered, but should be sized appropriately for the equipment to be stored.

Landscape Improvements

While not contemplated in the concept plan, the design process should consider expansion of the existing native planting on the wide boulevard along Minnetonka Boulevard. The planting is at its southern extent due to county right-of-way, but there is potential to expand the planting east, west, and north and include the small median with an existing linden tree. Landscape improvements should be designed to a standard of low maintenance and utilization of Minnesota-native plants suited for the site conditions. A number of underground utilities are located in this area. These features will be developed in conjunction with District staff and will be consistent with branding developed by the District.

Removal and Replacement of Concrete

In addition to curb removal and replacement necessary to reconstruct the parking lot and shared drive, concrete removal and replacement of the two slabs at the north entrance doors and the sidewalk at the south entrance door is needed. The slabs at the north doors are subject to frost heave and the doors become unusable in winter and spring. The sidewalk at the south door is adjacent to the accessible parking stall, but the slope of the sidewalk does not allow for safe access.

Educational Signage and Site Features

The site design may include signage or other educational features. The focus of these elements will be around water and watershed education by describing the stormwater management on site. These features will be developed in conjunction with District staff and will be consistent with messaging and branding developed by the District.

See Attachment B for the site concept plan and Attachment C for associated construction cost estimates.

Work to Date

The District previously contracted with the District engineering firm (Wenck Associates) to develop the preliminary concept and gather baseline site information. All information gathered to date will be transmitted to the consultant upon contract award. The information is summarized below. The consultant's proposal should assume all information gathered is complete and accurate.

Concept plan and estimated project budget (Attachments B and C)

- B: Site concept plan completed in July 2019
- C: Engineering cost estimate for proposed site concept *to serve as basis of project budget moving forward* completed in July 2019

Site Information (Attachments D-H)

- D: 2014 Utilities Plan
- E: 2014 Drainage Divides
- F: Soil Boring
- G: Wetland Delineation
- H: Approved boundary and type determination (Notice of Decision)

Project Team

Laura Domyancich
Planner-Project Manager, MCWD
ldomyancich@minnehahacreek.org
952-641-4582

Deb Johnson
Assistant Operations Manager, MCWD
djohnson@minnehahacreek.org
952-471-0590

PART 2: SCOPE OF SERVICES

The capital construction cost of this project, including contingency, is anticipated to be approximately $360,000. The consultant will work closely with the District to complete tasks 1-3 with construction oversight being a shared responsibility between the consultant and the District.

District staff will play a prominent role throughout the duration of the project. The process, as detailed below, will include:

1. Project Design (60-90%)
2. Bid Document Creation and Bid Support
3. Construction Oversight

The consultant will complete 90% design for presentation to the District Board of Managers no later than DATE. Approval of 90% design will then allow the consultant to prepare final design and bid the project in DATE.

The scope of services for this work may include, but will not be limited to, the tasks described as follows:

Task 1: Project Design

The consultant will take the plans from concept plan through 90% design. Site layout and elements will conform substantially to the developed concept plan, but the concept should be reviewed with a critical eye towards feasibility and cost. Special attention by the design team should be paid to developing concepts for the special areas described in the above Project Description. The consultant is responsible for ADA and all other legal compliance requirements associated with design and project specifications. The staff team does not expect major changes to the concept plan due to limited possible adjustments to a developed site. Specific tasks include:

60% Design (Design Development)

The consultant will develop 60% plans that conform substantially to the concept plan in both site layout and expected costs. 60% design will be vetted by District staff and reviewed by the MCWD Board prior to further advancing design.

Permitting

The consultant will assist staff by providing materials for all required permits, including permits required by the City of Minnetonka, the District, USACE, and any other public agencies. Staff will lead in the preparation and submission of the permits, with the consultant supporting through the preparation of required exhibits and calculations. The consultant is responsible for ensuring site design complies with all applicable rules and regulations, including District and City of Minnetonka rules for stormwater, wetland protection, and erosion control.

90% Design

The consultant will produce all elements standard to 90% design, including drawings, draft technical specifications, an opinion of probable costs, and any other needed figures identified by the consultant and client. The consultant is expected to apply a value engineering approach to work within the established project budget.

MCWD Board Meeting Attendance

Attendance at two meetings of the MCWD Board of Managers with the first one occurring at 60% design and the second at 90% design. *The presentations will be staff led with the consultants attendance required for Q&A.*

Task 2: Bid Document Development and Bidding

100% Design Plans

Prepare plans and technical specifications, which will include site layout plans, grading and utilities, stormwater management, landscaping plans, geotechnical plans, parking area and shared drive details, and any and all other necessary details to construct the project. The final design will include engineering estimates to accompany the final project design. The consultant will further develop specification and bid documents for construction contracting. The consultant will provide all front end documentation for the bid packet, and a draft and final bid packet for review. The consultant will coordinate with the District on the choice of standard contract documents and specifications.

Bid Period Support

In addition to developing the bid packet, the consultant will provide support during project bidding. This will include participation at a pre-bid meeting, responding to requests for information from prospective contractors, attending the bid opening, reviewing bid responses, and making an award recommendation.

Task 3: Construction Oversight

The consultant will provide construction oversight and management services in partnership with District staff, including construction administration and observation services. Required tasks will include participation in the preconstruction meeting, site staking, pay application review, submittal review, on-site construction observation of major tasks, responding to requests for information, providing post-construction as-builts, and any other construction administration, oversight, and management activities deemed necessary to complete the project as designed. The consultant should assume that the District will provide some routine on-site observation, and will have ultimate approval authority. In preparing the response to the construction oversight task, the consultant should clearly state all assumptions, including estimated numbers for any tasks requiring the review of submittals, pay applications, etc.

PART 3: INSTRUCTION TO PROPOSERS

Submittal Requirements

Responses to the RFP should be submitted to Laura Domyancich no later than 4:00 pm on January 23, 2020. Digital copies are sufficient, but if you prefer submittal of a paper copy please drop them off at the District Offices (15320 Minnetonka Blvd., Minnetonka, MN).

No page limit is required, however respondents will be evaluated on clarity and concision. Each proposal should include the follow items:

1. Cover Letter – please provide a primary point of contact through the transmission of a cover letter.
2. Project understanding – describe your understanding of the scope of work, the approach to be taken, and your vision for the project. Identify any additional information the District will need to supply or obtain to enhance your understanding of the project and successfully complete the work and/or any issues you might anticipate in performing the work.
3. Approach and methodology – provide a detailed description of your approach to the scope of work, including how you will coordinate with District staff. Include a description of all anticipated tasks, and any supplemental tasks not described in the RFP. The proposal should include a spreadsheet showing tasks, project team member, and associated hours. The proposal should also include a schedule and cost proposal. Include major assumptions impacting cost and time allocation.
4. Qualifications and experience – Provide an overview of the firm(s') and project team members' qualifications and experience. Include descriptions of projects undertaken by the firm(s) and team members similar in nature to that being proposed. Speak to the team's availability to deliver the project on time and on budget.
5. References – Provide three recent references for your proposed principal team members, including names, addresses, email addresses, and phone numbers.
6. District Resources – note a list of resources, expectations, or requirements which the consultant expects from the District in order to complete the project as proposed.
7. Subcontracting – if the consultant intends to use any subcontracting, submit the firm's information and an overview of the team members proposed from the firm.

Timeline

A review committee led by the project managers, MCWD Planner-Project Manager Laura Domyancich, MCWD Assistant Operations Manager Deb Johnson, and other select staff will evaluate proposals and recommend a consultant to the MCWD Board of Managers which will be required to concur in the staff selection.

The anticipated timeline for the proposal review process, which is subject to change, is as follows:

- Submit RFP Questions: January 3, 2020 at 4:00 pm (Answers will be reviewed at informational meeting)
- RFP informational meeting (optional): January 7, 2020 at 1:00 pm at Minnehaha Creek Watershed District offices

- Deadline for receipt of proposals: January 23, 2020 at 4:00 pm
- Interviews: February 3 or 4, 2020
- Award recommendation: February 7, 2020
- Scope adjustments: February 17, 2020
- Consultant selection and contract approval: February 27, 2020 (MCWD Board Meeting)

Selection Criteria

Methodology

1. Project understanding: The consultant understands the scope, goals and requirements of the project, and must be willing to work closely with MCWD staff.
2. Completeness and specificity: The proposal concisely and comprehensively explains what the consultant will do to meet all facets of the project, including a project schedule.
3. Identification of needs: The proposal outlines what resources will be required to complete the tasks, including MCWD staff time, additional information, etc.

Experience

1. Expertise and experience with design of comparable projects, including those that integrate components of retrofit construction, stormwater management, and landscaping.
2. Project team has a proven track record for completing projects on time and within budget.
3. Project team has demonstrated ability to bring project from design through construction.

Cost

1. Fee structure: The proposal must clearly outline the fees and costs to complete all aspects of this project. Include hourly rates for each project team member along with hours for each task. The final fee structure and contract price are subject to negotiation.

Contact

Any questions, RSVPs to the informational meeting, and response submittals should be directed to Laura Domyancich (952-641-4582 or ldomyancich@minnehahacreek.org).

PART 4: DISCLOSURES

Non-Binding

The District reserves the right to accept or reject any or all responses, in part or in whole, and to waive any minor informalities, as deemed in the District's best interests. In determining the most advantageous proposal, the District reserves the right to consider matters such as, but not limited to, consistency with the District's watershed management plan goals and the City's comprehensive land use plan, and the quality and completeness of the consultant's completed projects similar to the proposed project.

This RFP does not obligate the respondent to enter into a contract with the District, nor does it obligate the District to enter into a relationship with any entity that responds, or limit the District's right to enter into a contract with any entity that does not respond, to this RFP. The District also reserves the right, in its sole discretion, to cancel this RFP at any time for any reason.

Each respondent is solely responsible for all costs that it incurs to respond to this RFP and, if selected, to engage in the process including, but not limited to, costs associated with preparing a response or participating in any interviews, presentations or negotiations related to this RFP.

Right to Modify, Suspend, and Waive

The District reserves the right to:

- Modify and/or suspend any or all elements of this RFP;
- Request additional information or clarification from any or all respondents;
- Allow one or more respondents to correct errors or omissions or otherwise alter or supplement a proposal;
- Waive any unintentional defects as to form or content of the RFP or any response submitted.

Any substantial change in a requirement of the RFP will be disseminated in writing to all parties that have given written notice to the District of an interest in preparing a response.

Disclosure and Disclaimer

This RFP is for informational purposes only. Any action taken by the District in response to proposals made pursuant to this RFP, or in making any selection or failing or refusing to make any selection, is without liability or obligation on the part of the District or any of its officers, employees or advisors. This RFP is being provided by the District without any warranty or representation, expressed or implied, as to its content, accuracy or completeness. Any reliance on the information contained in this RFP, or on any communications with District officials, employees or advisors, is at the consultant's own risk. Prospective consultants must rely exclusively on their own investigations, interpretations and analysis in connection with this matter. This RFP is made subject to correction of errors, omissions, or withdrawal without notice.

The District will handle proposals and related submittals in accordance with the Minnesota Data Practices Act, Minnesota Statutes §13.591, subdivision 3(b).

AGREEMENT BETWEEN
MINNEHAHA CREEK WATERSHED DISTRICT and
[CONSULTANT]

[Project Title]

This agreement is entered into by the Minnehaha Creek Watershed District, a public body with powers set forth at Minnesota Statutes chapters 103B and 103D (MCWD), and [CONSULTANT], a Minnesota corporation ("CONSULTANT"). In consideration of the terms and conditions set forth herein and the mutual exchange of consideration, the sufficiency of which hereby is acknowledged, MCWD and CONSULTANT agree as follows:

1. Scope of Work

CONSULTANT will perform the work described in the [DATE] Scope of Services attached as Exhibit A (the "Services"). Exhibit A is incorporated into this agreement and its terms and schedules are binding on CONSULTANT as a term hereof. MCWD, at its discretion, in writing may at any time suspend work or amend the Services to delete any task or portion thereof. Authorized work by CONSULTANT on a task deleted or modified by MCWD will be compensated in accordance with paragraphs 5 and 6. Time is of the essence in the performance of the Services.

2. Independent Contractor

CONSULTANT is an independent contractor under this agreement. CONSULTANT will select the means, method and manner of performing the Services. Nothing herein contained is intended or is to be construed to constitute CONSULTANT as the agent, representative or employee of MCWD in any manner. Personnel performing the Services on behalf of CONSULTANT or a subcontractor will not be considered employees of MCWD and will not be entitled to any compensation, rights or benefits of any kind from MCWD.

3. Subcontract and Assignment

CONSULTANT will not assign, subcontract or transfer any obligation or interest in this agreement or any of the Services without the written consent of MCWD and pursuant to any conditions included in that consent. MCWD consent to any subcontracting does not relieve CONSULTANT of its responsibility to perform the Services or any part thereof, nor in any respect its duty of care, insurance obligations, or duty to hold harmless, defend and indemnify under this agreement.

4. Duty of Care; Indemnification

CONSULTANT will perform the Services with due care and in accordance with national standards of professional care. CONSULTANT will defend MCWD, its officers, board members, employees and agents from any and all actions, costs, damages and liabilities of any nature arising from; and hold each such party harmless, and indemnify it, to the extent due to: (a) CONSULTANT's negligent or otherwise wrongful act or omission, or breach of a specific contractual duty; or (b) a subcontractor's negligent or otherwise wrongful act or omission, or breach of a specific contractual duty owed by CONSULTANT to MCWD. For any claim subject to this paragraph by an employee of CONSULTANT or a subcontractor, the indemnification obligation is not limited by a limitation on the amount or type of damages, compensation or benefits payable by or for

CONSULTANT or a subcontractor under workers' compensation acts, disability acts or other employee benefit acts.

5. Compensation

MCWD will compensate CONSULTANT for the Services on [an hourly OR a lump-sum] basis and reimburse for direct costs in accordance with Exhibit A. Invoices will be submitted monthly for work performed during the preceding month. Payment for undisputed work will be due within 30 days of receipt of invoice. Direct costs not specified in Exhibit A will not be reimbursed except with prior written approval of the MCWD administrator. Subcontractor fees and subcontractor direct costs, as incurred by CONSULTANT, will be reimbursed by MCWD at the rate specified in MCWD's written approval of the subcontract.

[The total payment for each task will not exceed the amount specified for that task in Exhibit A.] The total payment for the Services will not exceed [$_____]. Total payment in each respect means all sums to be paid whatsoever, including but not limited to fees and reimbursement of direct costs and subcontract costs, whether specified in this agreement or subsequently authorized by the administrator.

CONSULTANT will maintain all records pertaining to fees or costs incurred in connection with the Services for six years from the date of completion of the Services. CONSULTANT agrees that any authorized MCWD representative or the state auditor may have access to and the right to examine, audit and copy any such records during normal business hours.

6. Termination; Continuation of Obligations

This agreement is effective when fully executed by the parties and will remain in force until [DATE] unless earlier terminated as set forth herein.

MCWD may terminate this agreement at its convenience, by a written termination notice stating specifically what prior authorized or additional tasks or services it requires CONSULTANT to complete. CONSULTANT will receive full compensation for all authorized work performed, except that CONSULTANT will not be compensated for any part performance of a specified task or service if termination is due to CONSULTANT's breach of this agreement.

Insurance obligations; duty of care; obligations to defend, indemnify and hold harmless; and document-retention requirements will survive the completion of the Services and the term of this agreement.

7. No Waiver

The failure of either party to insist on the strict performance by the other party of any provision or obligation under this agreement, or to exercise any option, remedy or right herein, will not waive or relinquish such party's rights in the future to insist on strict performance of any provision, condition or obligation, all of which will remain in full force and affect. The waiver of either party on one or more occasion of any provision or obligation of this agreement will not be construed as a waiver of any subsequent breach of the same provision or obligation, and the consent or approval by either party to or of any act by the other requiring consent or approval will not render unnecessary such party's consent or approval to any subsequent similar act by the other.

Notwithstanding any other term of this agreement, MCWD waives no immunity in tort. This agreement creates no right in and waives no immunity, defense or liability limit with respect to any third party.

8. Insurance

At all times during the term of this Agreement, CONSULTANT will have and keep in force the following insurance coverages:

A. General: $1.5 million, each occurrence and aggregate, covering both CONSULTANT's work and completed operations on an occurrence basis and including contractual liability.

B. Professional liability: $1.5 million each claim and aggregate. Any deductible will be CONSULTANT's sole responsibility and may not exceed $50,000. Coverage may be on a claims-made basis, in which case CONSULTANT must maintain the policy for, or obtain extended reporting period coverage extending, at least three (3) years from completion of the Services.

C. Automobile liability: $1.5 million combined single limit each occurrence coverage for bodily injury and property damage covering all vehicles on an occurrence basis.

D. Workers' compensation: in accordance with legal requirements applicable to CONSULTANT.

CONSULTANT will not commence work until it has filed with MCWD a certificate of insurance clearly evidencing the required coverages and naming MCWD as an additional insured for general liability, along with a copy of the additional insured endorsement establishing coverage for CONSULTANT's work and completed operations as primary coverage on a noncontributory basis. The certificate will name MCWD as a holder and will state that MCWD will receive written notice before cancellation, nonrenewal or a change in the limit of any described policy under the same terms as CONSULTANT.

9. Compliance With Laws

CONSULTANT will comply with the laws and requirements of all federal, state, local and other governmental units in connection with performing the Services and will procure all licenses, permits and other rights necessary to perform the Services.

In performing the Services, CONSULTANT will ensure that no person is excluded from full employment rights or participation in or the benefits of any program, service or activity on the ground of race, color, creed, religion, age, sex, disability, marital status, sexual orientation, public assistance status or national origin; and no person who is protected by applicable federal or state laws, rules or regulations against discrimination otherwise will be subjected to discrimination.

10. Data and Information

All data and information obtained or generated by CONSULTANT in performing the Services, including documents in hard and electronic copy, software, and all other forms in which the data and information are contained, documented or memorialized, are the property of MCWD. CONSULTANT hereby assigns and transfers to MCWD all right, title and interest in: (a) its copyright, if any, in the materials; any registrations and copyright applications relating to the materials; and any copyright renewals and extensions; (b) all works based on, derived from or incorporating the materials; and (c) all income, royalties, damages, claims and payments now or hereafter due or payable with respect thereto, and all causes of action in law or equity for past, present or future infringement based on the copyrights. CONSULTANT agrees to execute all papers and to perform such other proper acts as MCWD may deem necessary to secure for MCWD or its assignee the rights herein assigned.

MCWD may immediately inspect, copy or take possession of any materials on written request to CONSULTANT. On termination of the agreement, CONSULTANT may maintain a copy of some or all of the materials except for any materials designated by MCWD as confidential or non-public under applicable law, a copy of which may be maintained by CONSULTANT only pursuant to written agreement with MCWD specifying terms.

11. Data Practices; Confidentiality

If CONSULTANT receives a request for data pursuant to the Data Practices Act, Minnesota Statutes chapter 13 (DPA), that may encompass data (as that term is defined in the DPA) CONSULTANT possesses or has created as a result of this agreement, it will inform MCWD immediately and transmit a copy of the request. If the request is addressed to MCWD, CONSULTANT will not provide any information or documents, but will direct the inquiry to MCWD. If the request is addressed to CONSULTANT, CONSULTANT will be responsible to determine whether it is legally required to respond to the request and otherwise what its legal obligations are, but will notify and consult with MCWD and its legal counsel before replying. Nothing in the preceding sentence supersedes CONSULTANT's obligations under this agreement with respect to protection of MCWD data, property rights in data or confidentiality. Nothing in this section constitutes a determination that CONSULTANT is performing a governmental function within the meaning of Minnesota Statutes section 13.05, subdivision 11, or otherwise expands the applicability of the DPA beyond its scope under governing law.

CONSULTANT agrees that it will not disclose and will hold in confidence any and all proprietary materials owned or possessed by MCWD and so denominated by MCWD. CONSULTANT will not use any such materials for any purpose other than performance of the Services without MCWD written consent. This restriction does not apply to materials already possessed by CONSULTANT or that CONSULTANT received on a non-confidential basis from MCWD or another party. Consistent with the terms of this section 11 regarding use and protection of confidential and proprietary information, CONSULTANT retains a nonexclusive license to use the materials and may publish or use the materials in its professional activities. Any CONSULTANT duty of care under this agreement does not extend to any party other than MCWD or to any use of the materials by MCWD other than for the purpose(s) for which CONSULTANT is compensated under this agreement.

12. MCWD Property

All property furnished to or for the use of CONSULTANT or a subcontractor by MCWD and not fully used in the performance of the Services, including but not limited to equipment, supplies, materials and data, both hard copy and electronic, will remain the property of MCWD and returned to MCWD at the conclusion of the performance of the Services, or sooner if requested by MCWD. CONSULTANT further agrees that any proprietary materials are the exclusive property of MCWD and will assert no right, title or interest in the materials. CONSULTANT will not disseminate, transfer or dispose of any proprietary materials to any other person or entity unless specifically authorized in writing by MCWD.

Any property including but not limited to materials supplied to CONSULTANT by MCWD or deriving from MCWD is supplied to and accepted by CONSULTANT as without representation or warranty including but not limited to a warranty of fitness, merchantability, accuracy or completeness. However, CONSULTANT's duty of professional care under paragraph 4, above, does not extend to materials provided to CONSULTANT by MCWD or any portion of the Services that is inaccurate or incomplete as the result of CONSULTANT's reasonable reliance on those materials.

13. Notices

Any written communication required under this agreement to be provided in writing will be directed to the other party as follows:

To MCWD:

Administrator
Minnehaha Creek Watershed District
15320 Minnetonka Boulevard
Minnetonka, MN 55345

To CONSULTANT:

[Authorized Representative
Organization
Address]

Either of the above individuals may in writing designate another individual to receive communications under this agreement.

14. Choice of Law; Venue

This agreement will be construed under and governed by the laws of the State of Minnesota. Venue for any action will lie in Hennepin County.

15. Whole Agreement

The entire agreement between the two parties is contained herein and this agreement supersedes all oral agreements and negotiations relating to the subject matter hereof. Any

modification of this agreement is valid only when reduced to writing as an amendment to the agreement and signed by the parties hereto. MCWD may amend this agreement only by action of the Board of Managers acting as a body.

IN WITNESS WHEREOF, intending to be legally bound, the parties hereto execute and deliver this agreement.

CONSULTANT

By_____ Date: _____
Its_____

Approved as to Form and Execution

_____
MCWD Attorney

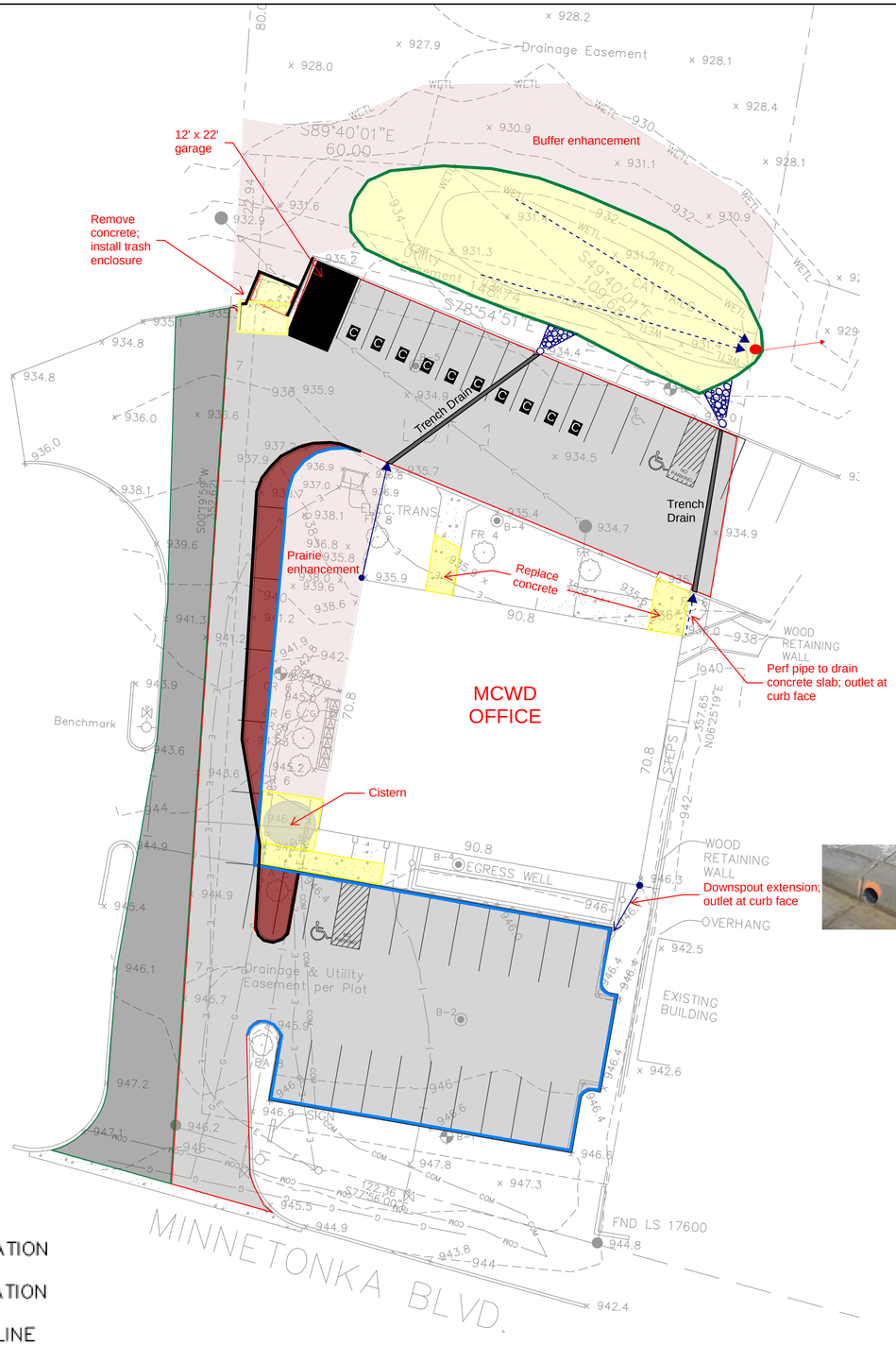
MINNEHAHA CREEK WATERSHED DISTRICT

By_____ Date: _____
Its_____

Exhibit A
Scope of Services

Attachment B Concept Plan

FULL SITE RESTORATION CONCEPT



B-1 BORING LOCATION

B-2 PIEZOMETER LOCATION

—— I —— WATER LINE LOCATION

—— COM —— COMMUNICATION LINE

—— E —— ELECTRICAL LINE

—— G —— GAS LINE

——> —— SANITARY SEWER

EXISTING PARKING:
ACCESSIBLE
= 2 STALLS
STANDARD (8.5'x18')
= 31 STALLS
TOTAL
= 33 STALLS

PROPOSED PARKING:
ACCESSIBLE
= 2 STALLS
STANDARD (8.5'x18')
= 28 STALLS
COMPACT (7.5'x18')
= 10 STALLS
TOTAL
= 40 STALLS

Bituminous expansion (MCWD)

Bituminous full reconstruct (MCWD)

Bituminous full reconstruct (Campbell-Sevey)

Replace concrete sidewalk

Solid wall pipe

Perforated pipe

Riprap

Rain Guardian

Remove & replace curb

Remove concrete curb

C Compact parking stall

Convert Pond to Filtration Basin:
Top of basin = 932.0
Bottom of basin = 931.0
Draintile invert = 930.0
Outlet @ wetland = 929.3
VC storage provided = 3,850 cf
VC credit (50%) = 1,925 cf

Buffer & prairie enhancement (VC credit)

Outlet control structure

12" RCP

N

0 20 40
GRAPHIC SCALE IN FEET

WENCK
Responsive partner. Exceptional outcomes.
7500 OLSON MEMORIAL HWY
SUITE 300
GOLDEN VALLEY, MN 55427
PHONE: 763-252-6800
FAX: 952-831-1268
WWW.WENCK.COM

SUB CONSULTANT:

CLIENT:
MINNEHAHA CREEK WATERSHED DISTRICT

PROJECT TITLE:
MCWD CAMPUS IMPROVEMENTS
15320 MINNETONKA BLVD
MINNETONKA, MN 55345

ISSUE NO.:	DESCRIPTION:	DATE:
ISSUE #	DESCRIPTION	XXXX/XX/XX

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

NOT FOR CONSTRUCTION

LICENSE NO.:
DATE:

PROJECT NO.: 0185-0133

DWN BY:	CHK'D BY:	APP'D BY:
XXX	XXX	XXX

ISSUE DATE: DATE

ISSUE NO.: ISSUE #

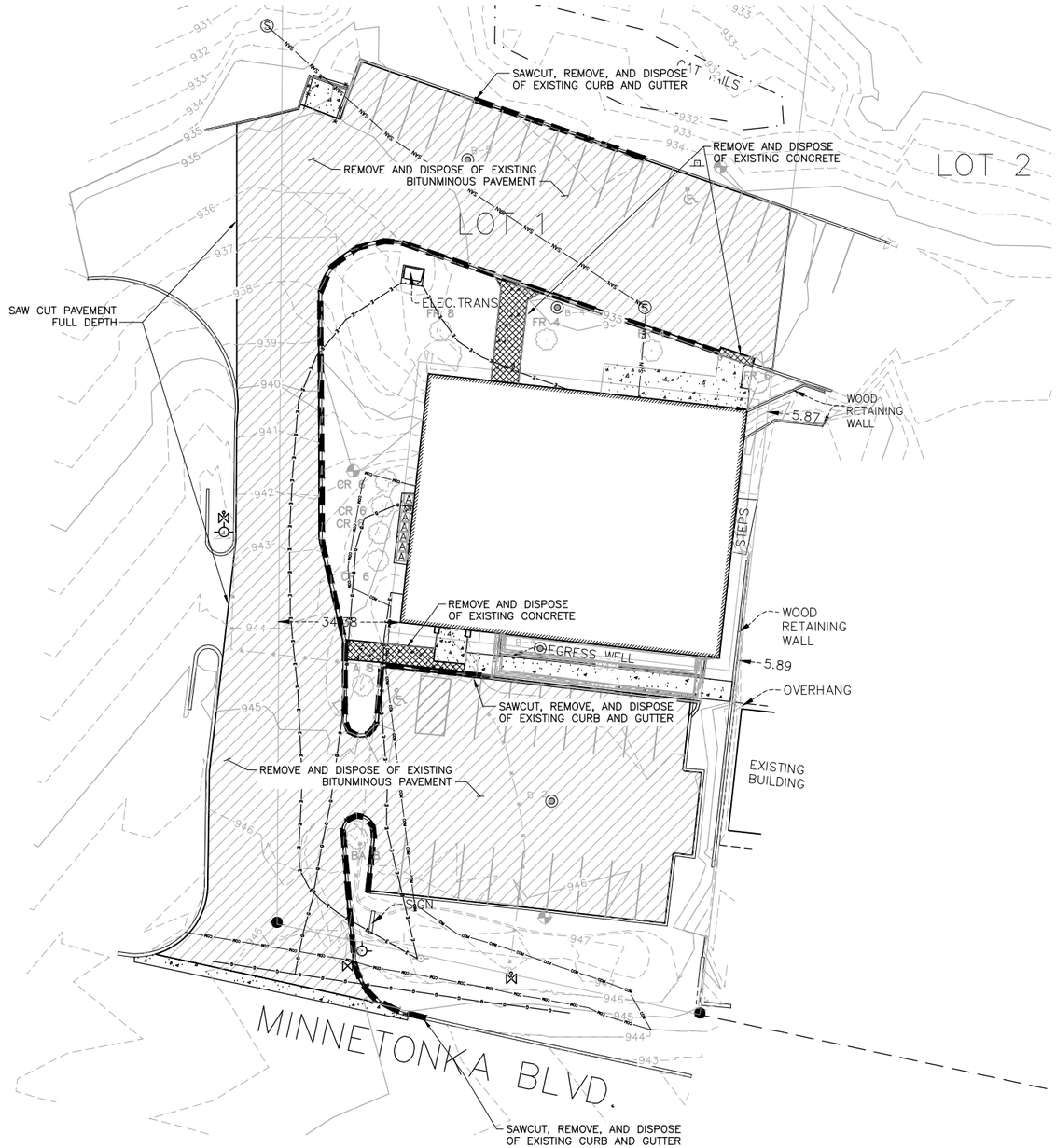
SHEET TITLE:
EXCEED CONCEPT

SHEET NO.:
EX-2

Number	Bid Item	Unit	Quantity	Unit Cost	Extended
PART 1 - MCWD COSTS					
1	Mobilization/Demobilization	LS	1	$ 21,320.00	$ 21,320.00
2	Erosion control	LS	1	$ 7,500.00	$ 7,500.00
3	Bituminous removal	SY	1721	$ 5.50	$ 9,463.67
4	Concrete removal	SY	58	$ 12.00	$ 701.33
5	Curb removal	LF	537	$ 10.00	$ 5,370.00
6	7" Concrete slab	SY	61	$ 100.00	$ 6,133.33
7	Aggregate base class 5	TON	580	$ 20.00	$ 11,599.00
8	Bituminous base course	TON	78	$ 100.00	$ 7,831.44
9	Tack coat	GAL	97	$ 3.00	$ 292.09
10	Bituminous wear course	TON	152	$ 110.00	$ 16,763.51
11	Connect & embed downspout & drain to curb	EA	3	$ 1,000.00	$ 3,000.00
12	Curb & gutter	LF	418	$ 30.00	$ 12,540.00
13	Parking lot striping & signage	LS	1	$ 4,000.00	$ 4,000.00
	Curb cut with Rain Guardian Turret	EA	2	$ 2,500.00	$ 5,000.00
	Trench drain	LF	97	$ 175.00	$ 16,975.00
	MnDOT Class II riprap	CY	8	$ 125.00	$ 1,000.00
	6" HDPE drain pipe (solid)	LF	33	$ 30.00	$ 990.00
	6" HDPE drain pipe (perforated)	LF	160	$ 60.00	$ 9,600.00
	6" HDPE cleanouts, fittings & standpipes	EA	3	$ 500.00	$ 1,500.00
	Muck excavation & haul off-site (CV)	CY	139	$ 25.00	$ 3,465.94
	Filtration media	CY	139	$ 75.00	$ 10,397.82
	Basin grading	EA	1	$ 5,000.00	$ 5,000.00
	Rain garden & filtration basin plugs (5' OC)	EA	705	$ 5.00	$ 3,524.00
	Outlet control structure	EA	1	$ 10,000.00	$ 10,000.00
	12" RCP	LF	18	$ 75.00	$ 1,350.00
	Buffer enhancement	LS	1	$ 10,000.00	$ 10,000.00
	Prairie enhancement	LS	1	$ 5,000.00	$ 5,000.00
	Utility relocation	LS	1	$ 10,000.00	$ 10,000.00
	Shredded hardwood mulch	CY	44	$ 45.00	$ 1,957.78
	Sod / Turf restoration	LS	1	$ 2,000.00	$ 2,000.00
	Cistern concrete slab & footings	LS	1	$ 15,000.00	$ 15,000.00
	Irrigation, control & treatment system	LS	1	$ 8,000.00	$ 8,000.00
	Cistern & exterior piping	LS	1	$ 15,000.00	$ 15,000.00
	Vortex fine filter	LS	1	$ 1,000.00	$ 1,000.00
	Trash enclosure	LS	1	$ 20,000.00	$ 20,000.00
	Storage shed/garage	LS	1	$ 10,000.00	$ 10,000.00
				25% CONTINGENCY	$ 68,318.73
				10% DESIGN	$ 36,313.00
					$ 377,906.65
PART 2 - PARTNER COSTS					
16	Mobilization/Demobilization	EA	1	$ 4,680.00	$ 4,680.00
17	CS bituminous removal	SY	396	$ 5.00	$ 1,977.78
	CS Aggregate base class 5	TON	125	$ 20.00	$ 2,500.00
18	CS Bituminous base course	TON	44	$ 100.00	$ 4,400.00
19	CS Tack coat	GAL	14	$ 3.00	$ 42.00
20	CS Bituminous wear course	TON	33	$ 110.00	$ 3,630.00
				25% CONTINGENCY	$ 4,307.44
				10% DESIGN	$ 2,179.00
					$ 23,716.22

TOTAL ESTIMATED COST $ 401,622.87

Attachment D Utilities Plan



REMOVALS LEGEND

- BITUMINOUS REMOVAL
- CONCRETE WALK REMOVAL
- CURB & GUTTER REMOVAL
- B-01 SOIL BORING

1 C-01 PLAN: EXISTING CONDITION AND REMOVALS
1"=20'-0"

0 20 40
SCALE IN FEET

PRELIMINARY DRAFT

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
A	KJN2	CMH2	MAK	05/16/2014	60% DRAFT NOT FOR CONSTRUCTION

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

SIGNATURE

PRINTED NAME MICHELLE A. KIMBLE

DATE _____ REG. NO. 42012

	05/16						
CLIENT	—	—	—	—	—	—	—
BID	—	—	—	—	—	—	—
CONSTRUCTION	—	—	—	—	—	—	—
	—	—	—	—	—	—	—
	—	—	—	—	—	—	—
RELEASED TO/FOR	A	B	C	0	1	2	3
	DATE RELEASED						

BARR
Corporate Headquarters: Minneapolis, Minnesota
Ph: 1-800-632-2277

Project Office:
BARR ENGINEERING CO.
4700 WEST 77TH STREET
MINNEAPOLIS, MN.
55435-4803
Ph: 1-800-632-2277
Fax: (952) 832-2601
www.barr.com

Scale	AS SHOWN
Date	05/16/14
Drawn	KJN2
Checked	CMH2
Designed	MAK
Approved	MAK

MINNEHAHA CREEK WATERSHED DISTRICT
15320 MINNETONKA BOULEVARD, MINNETONKA, MN

MCWD HEADQUARTERS STORMWATER RETROFIT
MINNETONKA, MN

EXISTING CONDITIONS AND REMOVALS

BARR PROJECT No. 23/27-1357.00
CLIENT PROJECT No.
DWG. No. C-01
REV. A

Attachment E Drainage Divides

1 PLAN: EXISTING DRAINAGE DIVIDES
1"=20'-0"

0 20 40
SCALE IN FEET

NOT FOR CONSTRUCTION

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION

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

SIGNATURE _____

PRINTED NAME _____

DATE _____ REG. NO. _____

	05/15						
CLIENT							
BID							
CONSTRUCTION							
RELEASED TO/FOR	A	B	C	0	1	2	3
DATE RELEASED							

BARR
Corporate Headquarters:
Minneapolis, Minnesota
Ph: 1-800-632-2277

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MINNEAPOLIS, MN.
55435-4803
Ph: 1-800-632-2277
Fax: (952) 832-2601
www.barr.com

Scale	AS SHOWN
Date	05/14/2014
Drawn	CMH2
Checked	MAK
Designed	MAK
Approved	MAK

MINNEHAHA CREEK WATERSHED DISTRICT
15320 MINNETONKA BOULEVARD, MINNETONKA, MN

MCWD HEADQUARTERS STORMWATER RETROFIT
MINNETONKA, MN

EXISTING DRAINAGE DIVIDES

BARR PROJECT No. 23/27-1357.00
CLIENT PROJECT No.
DWG. No.
REV. No.

CADD USER: Michelle Kimble FILE: M:\DESIGN\23271357.00\23271357_EXISTING_DRAINAGE_AREAS.DWG PLOT SCALE: 1:2 PLOT DATE: 5/15/2014 6:26 PM
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kjn2 M:\Design\23271357.00\23271357_C-01_EXISTING_REMOVALS.dwg Plot at 1 05/13/2014 10:46:16

Wenck Associates, Inc.
1800 Pioneer Creek Center
Maple Plain, MN 55359
Telephone: 763-479-4200
Fax: 763-479-4242

WELL NUMBER B-1

CLIENT Minnehaha Creek Watershed District
PROJECT NAME Office Subsurface Investigation and Piezometer Installation
PROJECT NUMBER 0185-5083
PROJECT LOCATION 15320 Minnetonka Boulevard, Minnetonka, MN
DATE STARTED 8/14/13 **COMPLETED** 8/14/13
GROUND ELEVATION 946.2 ft **HOLE SIZE** 4.25 Inch
DRILLING CONTRACTOR Glacial Ridge
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger
▽ **AT TIME OF DRILLING** 20.0 ft / Elev 926.2 ft
LOGGED BY Jason Warne **CHECKED BY** Jason Warne
AT END OF DRILLING ---
NOTES Top of Casing Elevation = 949.21
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0				OL		Topsoil: Black, silty, organics present, moist. Fill. 1.0 / 945.2	Cement Seal
	SS 1	89	1-7-9 (16)	SP		Sand: Light brown, dense, fine grained, slightly silty, few pebbles. Fill. 3.5 / 942.7	
5	SS 2	72	2-4-5 (9)	CL		Sandy Clay: Black to dark brown, medium stiff, moderately cohesive, blocky texture, few pebbles, moist. Fill.	Grout
	SS 3	61	4-5-5 (10)				2 -inch PVC Riser
10	SS 4	89	1-2-3 (5)			12.5 / 933.7	
				SW		Sand: Light brown, fine-coarse grained, some gravel, dense, oxidation staining present, dry.	Bentonite Seal
15	SS 5	100	1-7-7 (14)			16.0 / 930.2	Filter Pack
				CL		Sandy Clay: Grayish brown, some sand, cohesive, moderately stiff, oxidation staining present, moist to wet.	2- inch PVC Screen, 10-slot
20	SS 6	100	3-4-5 (9)			▽ 21.0 / 925.2	
						Bottom of hole at 21.0 feet.	

GENERAL BH / TP / WELL PIEZOMETER BORING LOGS.GPJ WENCK.GDT 9/11/13

Wenck Associates, Inc.
1800 Pioneer Creek Center
Maple Plain, MN 55359
Telephone: 763-479-4200
Fax: 763-479-4242

BORING NUMBER B-2

CLIENT Minnehaha Creek Watershed District
PROJECT NAME Office Subsurface Investigation and Piezometer Installation
PROJECT NUMBER 0185-5083
PROJECT LOCATION 15320 Minnetonka Boulevard, Minnetonka, MN
DATE STARTED 8/14/13 **COMPLETED** 8/14/13
GROUND ELEVATION 945.2 ft **HOLE SIZE** 4.25 Inch
DRILLING CONTRACTOR Glacial Ridge
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger
▽ **AT TIME OF DRILLING** 17.0 ft / Elev 928.2 ft
LOGGED BY Jason Warne **CHECKED BY** Jason Warne
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0						0.5 Asphalt Pavement	944.7
						1.0 Class 5 Aggregate	944.2
						Silty Sand: Light brown, fine to medium, dense, few pebbles, glass pieces present, moist. Fill.	
	SS 1	78	6-7-8 (15)	SM			
5	SS 2	89	6-14-11 (25)			Becoming dark brown to black.	
						7.0	938.2
	SS 3	56	14-9-7 (16)	SC		Clayey Sand: Dark brown, fine to medium, dense/stiff, lenses of black clayey sand present, few pebbles, moist. Fill.	
						9.5	935.7
10	SS 4	56	2-3-3 (6)	CL		Sandy Clay: Dark brown, silty, moderately cohesive, few pebbles, blocky texture, moist. Fill.	
						14.0	931.2
15	SS 5	100	2-3-4 (7)	CL		Sandy Clay: Light brown to brown, cohesive, soft to medium, iron oxidation present, slight horizontal structure evident, moist.	
						17.0 ▽	928.2
				SP		Sand: Brown, medium to coarse, few pebbles, wet.	
20	SS 6	33	4-6-5 (11)			21.0	924.2
						Bottom of hole at 21.0 feet.	

GENERAL BH / TP / WELL PIEZOMETER BORING LOGS.GPJ WENCK.GDT 9/11/13

Wenck Associates, Inc.
1800 Pioneer Creek Center
Maple Plain, MN 55359
Telephone: 763-479-4200
Fax: 763-479-4242

WELL NUMBER B-3

CLIENT Minnehaha Creek Watershed District
PROJECT NAME Office Subsurface Investigation and Piezometer Installation
PROJECT NUMBER 0185-5083
PROJECT LOCATION 15320 Minnetonka Boulevard, Minnetonka, MN
DATE STARTED 8/14/13 **COMPLETED** 8/14/13
GROUND ELEVATION 942.2 ft **HOLE SIZE** 4.25 Inch
DRILLING CONTRACTOR Glacial Ridge
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger
▽ **AT TIME OF DRILLING** 14.0 ft / Elev 928.2 ft
LOGGED BY Jason Warne **CHECKED BY** Jason Warne
AT END OF DRILLING ---
NOTES Top of Casing Elevation = 945.21
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0				OL		Topsoil: Black silty clay, organics present, soft, moist. 1.0 / 941.2	Cement Seal
	SS 1	72	3-7-7 (14)			Sandy Clay: Dark gray to black, medium stiff, few pebbles, slightly cohesive, blocky texture, moist. Fill.	
5	SS 2	0	10-14-11 (25)	CL			Grout
	SS 3	67	3-3-4 (7)				2 inch PVC Riser
						9.5 / 932.7	
10	SS 4	89	2-2-2 (4)	OL		Silty Clay: Dark gray to black, medium stiff, plant material present, slightly cohesive, moist.	
						12.0 / 930.2	
						Gravelly Sand: Brown, fine to coarse, medium dense becoming very dense with depth, wet.	Bentonite Seal
						▽	
15	SS 5	17	4-5-8 (13)				Filter Pack
							2 inch PVC Screen, 10-slot
20	SS 6	78	4-5-5 (10)			Becoming gray.	
						21.0 / 921.2	
						Bottom of hole at 21.0 feet.	

Wenck Associates, Inc.
1800 Pioneer Creek Center
Maple Plain, MN 55359
Telephone: 763-479-4200
Fax: 763-479-4242

BORING NUMBER B-4

CLIENT Minnehaha Creek Watershed District
PROJECT NAME Office Subsurface Investigation and Piezometer Installation
PROJECT NUMBER 0185-5083
PROJECT LOCATION 15320 Minnetonka Boulevard, Minnetonka, MN
DATE STARTED 8/14/13 **COMPLETED** 8/14/13
GROUND ELEVATION 935.2 ft **HOLE SIZE** 4.25 Inch
DRILLING CONTRACTOR Glacial Ridge
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger
▽ **AT TIME OF DRILLING** 12.0 ft / Elev 923.2 ft
LOGGED BY Jason Warne **CHECKED BY** Jason Warne
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0				SM		Topsoil: Dark brown silty sand, organics present, moist.	
						1.0	934.2
				SM		Silty Sand: Light brown, fine to medium, moderately dense, moderately cohesive, few pebbles, moist. Fill.	
	SS 1	67	6-8-12 (20)				
						4.5	930.7
5	SS 2	67	4-6-7 (13)	SP		Sand: Gray, fine grained, well sorted, medium dense, moist.	
						7.0	928.2
	SS 3	67	2-3-4 (7)	ML		Silt: Dark gray, fin grained, well sorted, medium dense, slightly cohesive, moist.	
						8.0	927.2
				PT		Peat: Reddish brown fiberous plant material, horizontally layered, spongy, dry.	
10	SS 4	78	3-5-7 (12)			10.0	925.2
				SW-SC		Clayey Sand: Gray, fine to coarse, some gravel, dense, moist. ▽	
						14.5	920.7
15	SS 5	67	4-5-5 (10)	SW		Sand: Gray, fine to coarse, some gravel, dense, wet.	
20	SS 6	0	5-5-6 (11)			21.0	914.2
						Bottom of hole at 21.0 feet.	

Wenck Associates, Inc.
1800 Pioneer Creek Center
Maple Plain, MN 55359
Telephone: 763-479-4200
Fax: 763-479-4242

BORING NUMBER B-5

CLIENT Minnehaha Creek Watershed District
PROJECT NAME Office Subsurface Investigation and Piezometer Installation
PROJECT NUMBER 0185-5083
PROJECT LOCATION 15320 Minnetonka Boulevard, Minnetonka, MN
DATE STARTED 8/14/13 **COMPLETED** 8/14/13
GROUND ELEVATION 934.4 ft **HOLE SIZE** 4.25 Inch
DRILLING CONTRACTOR Glacial Ridge
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger
▽ **AT TIME OF DRILLING** 14.0 ft / Elev 920.4 ft
LOGGED BY Jason Warne **CHECKED BY** Jason Warne
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0						0.5 Asphalt Pavement	933.9
						1.0 Class 5 Aggregate	933.4
						Sandy Clay: Light gray, medium stiff, slightly cohesive, blocky texture, dry to moist. Fill.	
	SS 1	67	12-7-8 (15)	CL			
						4.5	929.9
5	SS 2	67	2-3-3 (6)			Silty Clay: Light gray, soft to very soft, moderately cohesive, blocky texture, moist to wet. Fill.	
				CL			
	SS 3	78	1-1-2 (3)				
						8.5	925.9
						Peat: Brown to black, fiberous plant material, spongy, horizontally layered, dry to moist.	
10	SS 4	89	1-2-3 (5)	PT			
						14.0 ▽	920.4
						Sand: Light gray, fine to coarse, dense to very dense, few pebbles, wet.	
15	SS 5	56	6-10-8 (18)	SW			
20	SS 6	100	10-16-8 (24)			21.0	913.4
						Bottom of hole at 21.0 feet.	

GENERAL BH / TP / WELL PIEZOMETER BORING LOGS.GPJ WENCK.GDT 9/11/13

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Maple Plain, MN 55359
Telephone: 763-479-4200
Fax: 763-479-4242

WELL NUMBER B-6

CLIENT Minnehaha Creek Watershed District
PROJECT NAME Office Subsurface Investigation and Piezometer Installation
PROJECT NUMBER 0185-5083
PROJECT LOCATION 15320 Minnetonka Boulevard, Minnetonka, MN
DATE STARTED 8/14/13 **COMPLETED** 8/14/13
GROUND ELEVATION 934.8 ft **HOLE SIZE** 4.25 Inch
DRILLING CONTRACTOR Glacial Ridge
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger
▽ **AT TIME OF DRILLING** 13.0 ft / Elev 921.8 ft
LOGGED BY Jason Warne **CHECKED BY** Jason Warne
AT END OF DRILLING ---
NOTES Top of Casing Elevation = 937.88
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0				SM		Topsoil: Dark brown, silty sand, organics present, moist. 1.0 / 933.8	Cement Seal
	SS 1	67	5-5-6 (11)	ML		Silt: Gray, slightly cohesive, soft, moist. Fill. 4.5 / 930.3	
5	SS 2	72	2-2-3 (5)	CL		Sandy Clay: Dark gray, soft, cohesive, plant material present, moist. Fill. 7.0 / 927.8	Grout
	SS 3	100	1-2-2 (4)	PT		Peat: Light to dark brown, fiberous plant material, spongy, horizontally layered, dry to moist.	2 inch PVC Riser
10	SS 4	100	1-1-2 (3)			▽ 14.0 / 920.8	Bentonite Seal
15	SS 5	56	2-4-6 (10)	SW		Sand: Light gray, fine to coarse, dense, wet.	Filter Pack
							2 inch PVC Screen, 10-slot
20	SS 6	33	8-8-9 (17)			21.0 / 913.8	
						Bottom of hole at 21.0 feet.	

Wenck Associates, Inc.
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WELL NUMBER Egress Well

CLIENT Minnehaha Creek Watershed District
PROJECT NAME Office Subsurface Investigation and Piezometer Installation
PROJECT NUMBER 0185-5083
PROJECT LOCATION 15320 Minnetonka Boulevard, Minnetonka, MN
DATE STARTED 8/21/13 **COMPLETED** 8/21/13
GROUND ELEVATION 936.9 ft **HOLE SIZE** 3 Inch
DRILLING CONTRACTOR Wenck Associates Inc
GROUND WATER LEVELS:
DRILLING METHOD Hand Auger
AT TIME OF DRILLING ---
LOGGED BY Jason Warne **CHECKED BY** Jason Warne
AT END OF DRILLING ---
NOTES Top of Casing Elevation = 937.91
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0		SW		Class 5 Aggregate, dry.	Bentonite Seal; Filter Pack
				3.5 / 933.4	
5		SC		Clayey Sand: Brown, medium dense, moderately cohesive, few pebbles, moist. Fill.	2-inch PVC Screen, 10-slot
				5.0 / 931.9	
				Bottom of hole at 5.0 feet.	


FND 1" IP
N81°46'24"W
159.25
CAT TAILS
80.00
Drainage Easement
WETL
S89°40'01"E
60.00
Utility
Easement 148.74
S78°54'51"E
S49°40'07"E
109.68
CAT TAILS
LOT 1
LOT 2
S00°19'59"W
352.62
EL.EC. TRANS.
FR 8
FR 4
B-4
B-5
EXISTING BUILDING
15320
90.8
70.8
STEPS
N06°25'19"E
357.65
WOOD
RETAINING
WALL
EGRESS WELL
OVERHANG
EXISTING
BUILDING
Benchmark
Drainage & Utility
Easement per Plat
B-1
B-2
SIGN
S77°56'00"E
122.36
FND LS 17600
MINNETONKA BLVD.
BORING LOCATION
PIEZOMETER LOCATION
WATER LINE LOCATION
COMMUNICATION LINE
ELECTRICAL LINE
GAS LINE
SANITARY SEWER

WENCK File #0185-0133
September 2019

Wetland Delineation Report: 15320 Minnetonka Boulevard – MCWD Campus

Prepared for:
Minnehaha Creek
Watershed District

WENCK
Responsive partner.
Exceptional outcomes.

Prepared by:

WENCK Associates, Inc.
1800 Pioneer Creek Center
Maple Plain, MN 55359
Phone: 763-479-4200
Fax: 763-479-4242

Table of Contents

FIGURES

APPENDICES

1.0 Introduction

Wenck Associates, Inc. (Wenck) staff conducted a wetland delineation on the Minnehaha Creek Watershed District Campus at 15320 Minnetonka Boulevard in Minnetonka, Minnesota. The investigation was conducted on the 1.14-acre parcel Hennepin County PID 1611722310015 (see property boundaries, Figure 1). Field work was conducted on June 26, 2019.

1.1 SITE DESCRIPTION

The project area is a commercial office building with associated parking and stormwater features (Figure 1). The project area slopes downward from the southern boundary at Minnetonka Boulevard and abuts a large wetland complex.

Wetlands are defined in the Federal Register (1982) as "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

An area must have 3 elements present in order to be delineated as a wetland:

1) Greater than 50% dominance of hydrophytic plant species.
2) A hydric soil substrate.
3) Wetland hydrology during the growing season.

2.0 Methods

This wetland investigation was conducted by using the on-site methodology set forth in the 1987 U.S. Army Corps of Engineers (COE) Wetlands Delineation Manual (1987 Manual) and the 2010 U.S. Army Corps of Engineers Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Regional Supplement). Potential wetland areas were examined according to guidelines set forth in these documents and wetland boundaries were determined through analysis of the vegetation, soils, and hydrology.

Plant species at both wetland and upland transect points were identified and assigned a wetland indicator status according to the North American Digital Flora: National Wetland Plant List, version 2.4.0 U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. (2016). In the text of this report and on the enclosed data forms, the plant indicator status follows the plant's scientific or common name unless a status has not been assigned. According to the 1987 Manual and Regional Supplement, the hydrophytic plant criteria are met when more than 50% of the dominant species within the vegetative strata were assigned an obligate (OBL), facultative wet (FACW), or facultative (FAC) wetland status.

The presence of current wetland hydrology was determined through direct observation of the primary or secondary wetland hydrology indicators as defined in the 1987 Manual and Regional Supplement. The presence of a single primary indicator is sufficient to conclude that wetland hydrology is present. The direct observation of two or more secondary wetland hydrology indicators is required to conclude that wetland hydrology is present.

Hydric soils were determined through use of the Version 8.1, NRCS Field Indicators of Hydric Soils in the United States. Soils were examined and classified by digging soil pits at sample point transects using a Dutch auger. If the soils exhibited indicators of hydric soils as defined by USDA Soil Conservation Service (1994) - a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part - they were determined to be hydric.

Data sheets were completed for each investigation point and are included in Appendix A. Delineated wetland boundaries were marked every 50 to 100 feet with a handheld Trimble GeoXT GPS unit. The GPS data were post-processed using the Minnesota CORS network of GPS reference stations. The corrected GPS data were then used to create the wetland boundary shapefiles in ArcMap as presented in the report figures.

Wetlands are classified in the Results section by their Eggers and Reed, Circular 39, and Cowardin classification systems based on observed field conditions.

3.0 Results

3.1 OFFSITE INVESTIGATION

The National Wetlands Inventory (NWI) (Figure 2) identified the presence of a PEM1C wetland basin at the northern end of the project area, which extends northeast outside of the project area boundary. Included also in Figure 2 are mapped features from the National Hydrography Dataset (NHD) which also does not indicate any additional wetlands or waterbodies within the project area or vicinity.

The Hennepin County soil survey indicates the presence of soil map unit Urban land-Udipsamments, 0 to 2 percent slopes (0% hydric rating), Malardi-Hawick complex, 6 to 12 percent slopes (0% hydric rating), and Muskego and Klossner soils, 0 to 1 percent slopes, (100% hydric rating) (see Figure 3). Soil survey data is in Appendix B. The Minnesota Public Waters Inventory (Figure 4) identified one PWI Basin (Gray's Bay Outlet - 27076100) at the north end of the property, which is the same basin identified by the NWI.

3.2 ONSITE INVESTIGATION

One wetland and one stormwater pond were identified within the project area (Figure 5). There were no other waterways or wetlands identified on site. Wetland 1 is a portion of the large wetland complex that continues outside of the project area and transitions from a forested fringe to a dense cattail community. The stormwater pond exhibits distinct boundaries and is separated from Wetland 1 by a constructed berm. Wetland 1 is classified by Wenck as:

- PFO1A/PEM1C (*Cowardin*)
- Type 1/3 (*Circular 39*)
- Floodplain Forest/Shallow Marsh (*Eggers and Reed*)

3.2.1 Wetland 1

Soils at the upland transect point (1u/2u) were gravelly and disturbed, as the upland area between Wetland 1 and the stormwater pond was a constructed berm. Soils consisted of 10YR 3/2 gravelly sandy loam at the surface with a mix of 10YR 3/2, 5/4, and 4/3 below. The wetland transect point (1w) featured six inches of 10YR 2/2 gravelly sandy clay loam with redoximorphic concentrations and depletions and a depleted (10YR 4/2 with redoximorphic concentrations) subsurface horizon with gleyed inclusions, meeting F6 – redox dark surface and F3 – depleted matrix.

The wetland community at the transect point was primarily forested, with a partially bare understory. Tree stratum species included black willow (*Salix nigra,* OBL), cottonwood (*Populus deltoides,* FAC), green ash (*Fraxinus pennsylvanica,* FACW), and American elm (*Ulmus americana,* FACW). The understory contained green ash in the herbaceous community, giant goldenrod (*Solidago gigantea,* FACW), reed canary grass (*Phalaris arundinacea,* FACW), buckthorn (*Rhamnus cathartica,* FAC), and jewelweed (*Impatiens capensis,* FACW). The vegetation community transitioned to a dominance of narrowleaf cattail (*Typha angustifolia*, OBL). The upland community included species such as Kentucky bluegrass (*Poa pratensis,* FAC), brome (*Bromus inermis,* FACU), leafy spurge (*Euphorbia esula,* NI), and Canada goldenrod (*Solidago canadensis,* FACU). The wetland boundary was distinguished by a change in topography and a shift to upland vegetation.

Indicators of wetland hydrology observed within the basin included primary indicators saturation and high-water table. Saturation was observed at 10 inches below the surface and free water was present at 12 inches below the surface at the wetland sample point. Secondary indicators included geomorphic position and FAC-neutral vegetation. Precipitation at the time of the site visit was above the normal range (Appendix C).

Wetland 1 looking north into basin and beyond property boundary.

3.2.2 Stormwater Pond

A constructed stormwater pond meeting wetland criterion was delineated in the project area. The upland transect point 1u/2u was shared between both basins. The wetland transect point (2w) featured 12 inches of 10YR 2/2 gravelly sandy clay loam with redoximorphic concentrations and depletions, meeting F6 – redox dark surface.

The wetland community was dominated by a sedge species (*Carex spp.*), giant goldenrod, Kentucky bluegrass, and narrowleaf cattail. The upland community included species such as Kentucky bluegrass, brome, leafy spurge, and Canada goldenrod.

Indicators of wetland hydrology observed within the basin included primary indicators saturation and high-water table. Saturation was observed at the surface and free water was present two inches below the surface at the wetland sample point. Standing water was present within a foot of the soil boring.

Stormwater pond, facing east.

4.0 Conclusion

One wetland and one stormwater pond were identified on the project site. Activities which impact or potentially impact wetlands or other jurisdictional waters may be regulated by the USACE (under Section 404 of the Clean Water Act), the Local Government Unit administering the Wetland Conservation Act and/or the Minnesota DNR. No grading or filling in wetland basins or other jurisdictional waters should commence until all necessary permits have been obtained or a finding of no jurisdiction has been obtained from applicable regulatory agencies. This wetland delineation meets the standards and criteria described in the 1987 Manual and Regional Supplement and the results represent the conditions present at the time of the field investigation.

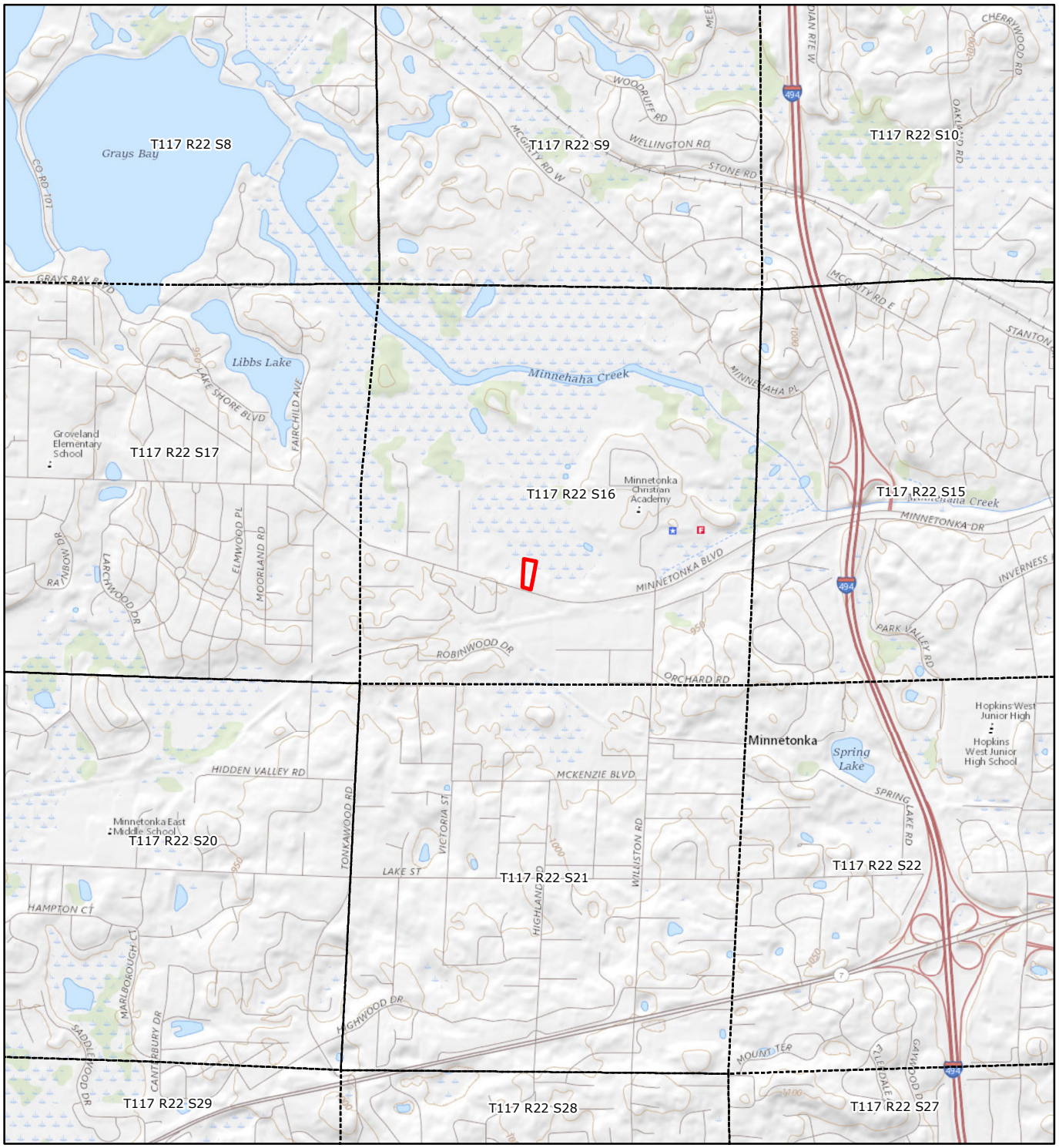
Sincerely,

Wenck Associates, Inc.

Meaghan Watson
Certified Wetland Delineator In-Training
#5202

September 17, 2019
Date

Figures



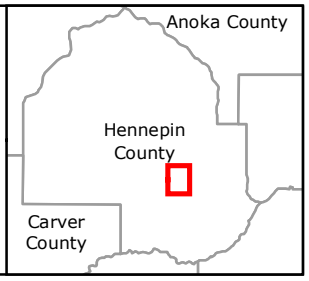
2,000 1,000 0 2,000 Feet

N

Path:
Date: 9/5/2019 Time: 2:09:18 PM User: WatME0697

Legend

- Project Boundary
- Section Boundary



MINNEHAHA CREEK WATERSHED DISTRICT	WENCK Responsive partner. Exceptional outcomes.	SEPT 2019
Site Location Map		Figure 1

2018 Aerial Photograph (Source: Hennepin Co.)

Legend

- Project Boundary
- National Wetland Inventory (NWI)
- NHD Streams
- NHD Waterbody

150 75 0 150 Feet

N

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Date: 9/10/2019 Time: 9:18:38 AM User: WatME0697

MINNEHAHA CREEK WATERSHED DISTRICT

National Wetland Inventory & National Hydrography Dataset

WENCK
Responsive partner. Exceptional outcomes.

SEPT 2019

Figure 2

2018 Aerial Photograph (Source: Hennepin Co.)

Legend

Project Boundary

Hennepin Co. Soils

N

150 75 0 150 Feet

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Date: 9/10/2019 Time: 9:10:52 AM User: WatME0697

MINNEHAHA CREEK WATERSHED DISTRICT	WENCK Responsive partner. Exceptional outcomes.	SEPT 2019
Hennepin County Soil Survey		Figure 3

2018 Aerial Photograph (Source: Hennepin Co.)

Legend

- Project Boundary
- Public Water Watercourse
- Public Ditch/Altered Natural Watercourse
- Public Waters Basins

150 75 0 150 Feet

N

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Date: 9/10/2019 Time: 9:28:49 AM User: WatME0697

MINNEHAHA CREEK WATERSHED DISTRICT

MNDNR Public Waters Inventory (PWI)

WENCK
Responsive partner. Exceptional outcomes.

SEPT 2019

Figure 4

Legend

- Property Boundary
- Transect Points
- Delineated Wetlands

100 50 0 100 Feet

N

Path: L:\0185\0133\mxd\DelineatedWetlands.mxd
Date: 9/17/2019 Time: 9:37:59 AM User: WatME0697

MINNEHAHA CREEK WATERSHED DISTRICT	WENCK Responsive partner. Exceptional outcomes.	SEPT 2019
Delineated Features		Figure 5

Appendix A

Field Data Sheets

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Minnehaha Creek Watershed District Campus | City/County: Minnetonka/Hennepin | Sampling Date: 6/26/2019
Applicant/Owner: MCWD | State: MN | Sampling Point: 1w
Investigator(s): Meaghan Watson, Wenck Associates Inc. | Section, Township, Range: S16, T117, R22
Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): none
Slope (%): 2 | Lat: 44.9387 | Long: -93.4375 | Datum: NAD 83
Soil Map Unit Name: Muskego and Klossner soils, 0-1% slopes, frequently flooded | NWI Classification: None
Subregion (MLRA or LRR): M | Are climatic/hydrologic conditions of the site typical for this time of the year? N
Are vegetation [ ], soil [✓], or hydrology [ ] significantly disturbed? | Are "normal circumstances" present? Y
Are vegetation [ ], soil [ ], or hydrology [ ] naturally problematic? | (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	Y
Hydric soil present?	Y	Corps-regulated?:	
Indicators of wetland hydrology present?	Y	Wetland Type:	PFO1A/PEM1C

Remarks: (Explain alternative procedures here or in a separate report.)
Precipitation was above normal for this period.

VEGETATION -- Use scientific names of plants.

	Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species	Indicator Staus
1	*Populus deltoides*	20	Y	FAC
2	*Salix nigra*	10	Y	OBL
3	*Fraxinus pennsylvanica*	5	N	FACW
4	*Ulmus americana*	5	N	FACW
5				
		40	= Total Cover	
	Sapling/Shrub stratum (Plot size: 15 ft)			
1	*Rhamnus cathartica*	10	Y	FAC
2				
3				
4				
5				
		10	= Total Cover	
	Herb stratum (Plot size: 5 ft)			
1	*Poa pratensis*	60	Y	FAC
2	*Solidago gigantea*	20	Y	FACW
3	*Phalaris arundinacea*	10	N	FACW
4	*Impatiens capensis*	5	N	FACW
5				
6				
7				
8				
9				
10				
		95	= Total Cover	
	Woody vine stratum (Plot size: 30 ft)			
1				
2				
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 5 (A)
Total Number of Dominant Species Across all Strata: 5 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	10	x 1 =	10	
FACW species	45	x 2 =	90	
FAC species	90	x 3 =	270	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	145	(A)	370	(B)

Prevalence Index = B/A = 2.55

Hydrophytic Vegetation Indicators:

- [ ] Rapid Test for Hydrophytic Vegetation
- [X] Dominance test is >50%
- [X] Prevalence index is ≤3.0*
- [ ] Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: 1w

Soil Series: _____ Series Drainage Class: _____

Taxonomy (Subgroup):

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Horizon	Matrix Color (moist)		%	Mottles Color (moist)		%	Type*	Loc**	Texture	Remarks
0-6	1	10YR	2/2	80	10YR	4/2	10	C	M	sandy clay loam	gravelly, mixed
					10YR	4/4	10	D	M		
6-18	2	10YR	4/2	80	10YR	4/6	10	C	M	sandy clay loam	gravelly, mixed
					5BG	6/1	10	D	M		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ☐ Histisol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☑ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ☐ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ☐ Dark Surface (S7) **(LRR K, L)**
- ☐ Iron-Manganese Masses (F12) **(LRR K,L,R)**
- ☐ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Check here if indicators are not present: ☐

Restrictive Layer (if observed):

Type: _____ Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (not tilled) (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted of Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Check here if indicators are not present: ☐

Field Observations:

Surface water present?	Yes	☐	No	☑	Depth (inches):	
Water table present?	Yes	☑	No	☐	Depth (inches):	18
Saturation present? (includes capillary fringe)	Yes	☑	No	☐	Depth (inches):	12

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

water began filling in test hole after 3 minutes

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Minnehaha Creek Watershed District Campus | City/County: Minnetonka/Hennepin | Sampling Date: 6/26/2019
Applicant/Owner: MCWD | State: MN | Sampling Point: 1u/2u
Investigator(s): Meaghan Watson, Wenck Associates Inc. | Section, Township, Range: S16, T117, R22
Landform (hillslope, terrace, etc.): shoulder | Local relief (concave, convex, none): none
Slope (%): 5 | Lat: 44.9388 | Long: -93.4375 | Datum: NAD 83
Soil Map Unit Name: Malardi-Hawick complex, 6-12% slopes | NWI Classification: None
Subregion (MLRA or LRR): M | Are climatic/hydrologic conditions of the site typical for this time of the year? N
Are vegetation [ ], soil [✓], or hydrology [ ] significantly disturbed? | Are "normal circumstances" present? Y
Are vegetation [ ], soil [ ], or hydrology [ ] naturally problematic? | (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	N
Hydric soil present?	N	Corps-regulated?:	N
Indicators of wetland hydrology present?	N	Wetland Type:	

Remarks: (Explain alternative procedures here or in a separate report.)
Shared upland point between basins. Taken on constructed berm separating Wetland 1 and stormwater pond.

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Staus
Tree Stratum (Plot size: 30 ft)			
1 *Populus deltoides*	20	Y	FAC
2			
3			
4			
5			
	20 = Total Cover		
Sapling/Shrub stratum (Plot size: 15 ft)			
1			
2			
3			
4			
5			
	0 = Total Cover		
Herb stratum (Plot size: 5 ft)			
1 *Poa pratensis*	30	Y	FAC
2 *Solidago canadensis*	20	Y	FACU
3 *Carex blanda*	20	Y	FAC
4 *Euphorbia esula*	10	N	UPL
5 *Sonchus arvensis*	5	N	FACU
6 *Asclepias syriaca*	5	N	FACU
7			
8			
9			
10			
	90 = Total Cover		
Woody vine stratum (Plot size: 30 ft)			
1			
2			
	0 = Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across all Strata: 4 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 75.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	70	x 3 =	210	
FACU species	30	x 4 =	120	
UPL species	10	x 5 =	50	
Column totals	110	(A)	380	(B)

Prevalence Index = B/A = 3.45

Hydrophytic Vegetation Indicators:

[ ] Rapid Test for Hydrophytic Vegetation
[X] Dominance test is >50%
[ ] Prevalence index is ≤3.0*
[ ] Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
[ ] Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: 1u/2u

Soil Series: _____ Series Drainage Class: _____

Taxonomy (Subgroup):

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Horizon	Matrix Color (moist)		%	Mottles Color (moist)		%	Type*	Loc**	Texture	Remarks
0-4	1	10YR	3/2	100						sandy clay loam	gravelly, mixed
4-10	2	10YR	4/3	20						sandy clay loam	gravelly, mixed
		10YR	3/2	30							
		10YR	5/4	50							

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ☐ Histisol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ☐ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ☐ Dark Surface (S7) **(LRR K, L)**
- ☐ Iron-Manganese Masses (F12) **(LRR K,L,R)**
- ☐ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Check here if indicators are not present: ☑

Restrictive Layer (if observed):

Type: _____ Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (not tilled) (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted of Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Check here if indicators are not present: ☑

Field Observations:

Surface water present? Yes ☐ No ☑ Depth (inches): _____

Water table present? Yes ☐ No ☑ Depth (inches): _____

Saturation present? Yes ☐ No ☑ Depth (inches): _____

(includes capillary fringe)

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Minnehaha Creek Watershed District Campus | City/County: Minnetonka/Hennepin | Sampling Date: 6/26/2019
Applicant/Owner: MCWD | State: MN | Sampling Point: 2w
Investigator(s): Meaghan Watson, Wenck Associates Inc. | Section, Township, Range: S16, T117, R22
Landform (hillslope, terrace, etc.): toeslope | Local relief (concave, convex, none): none
Slope (%): 10 | Lat: 44.9388 | Long: -93.4375 | Datum: NAD 83
Soil Map Unit Name: Malardi-Hawick complex, 6-12% slopes | NWI Classification: None
Subregion (MLRA or LRR): M | Are climatic/hydrologic conditions of the site typical for this time of the year? N
Are vegetation [ ], soil [✓], or hydrology [ ] significantly disturbed? | Are "normal circumstances" present? Y
Are vegetation [ ], soil [ ], or hydrology [ ] naturally problematic? | (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	N
Hydric soil present?	N	Corps-regulated?:	N
Indicators of wetland hydrology present?	Y	Wetland Type:	

Remarks: (Explain alternative procedures here or in a separate report.)
Stormwater pond. Precipitation was above the normal conditions.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15 ft)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb stratum (Plot size: 5 ft)			
1 *Typha angustifolia*	30	Y	OBL
2 *Carex vulpinoidea*	20	Y	FACW
3 *Solidago gigantea*	20	Y	FACW
4 *Poa pratensis*	20	Y	FAC
5 *Phalaris arundinacea*	10	N	FACW
6 *Rumex crispus*	5	N	FAC
7			
8			
9			
10			
	105	= Total Cover	
Woody vine stratum (Plot size: 30 ft)			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across all Strata: 4 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	30	x 1 =	30	
FACW species	50	x 2 =	100	
FAC species	25	x 3 =	75	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	105	(A)	205	(B)

Prevalence Index = B/A = 1.95

Hydrophytic Vegetation Indicators:

[ ] Rapid Test for Hydrophytic Vegetation
[X] Dominance test is >50%
[X] Prevalence index is ≤3.0*
[ ] Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
[ ] Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: 2w

Soil Series: _____ Series Drainage Class: _____

Taxonomy (Subgroup):

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Horizon	Matrix Color (moist)		Matrix %	Mottles Color (moist)		Mottles %	Mottles Type*	Mottles Loc**	Texture	Remarks
0-12	1	10YR	2/2	80	10YR	5/2	10	D	M	sandy clay loam	gravelly, mixed
					10YR	4/6	10	C	M		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ☐ Histisol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ☐ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ☐ Dark Surface (S7) **(LRR K, L)**
- ☐ Iron-Manganese Masses (F12) **(LRR K,L,R)**
- ☐ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Check here if indicators are not present: ☐

Restrictive Layer (if observed):

Type: _____ Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (not tilled) (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted of Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Check here if indicators are not present: ☑

Field Observations:

Surface water present?	Yes	☑	No	☐	Depth (inches):	12
Water table present?	Yes	☑	No	☐	Depth (inches):	2
Saturation present? (includes capillary fringe)	Yes	☑	No	☐	Depth (inches):	0

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

standing water up to 1 foot depth in basin

Appendix B

Hennepin County Soil Survey

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Hennepin County, Minnesota

September 10, 2019

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:740 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 10 20 40 60

Feet
0 35 70 140 210

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Hennepin County, Minnesota
Survey Area Data: Version 14, Sep 12, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 26, 2014—Sep 7, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
L2C	Malardi-Hawick complex, 6 to 12 percent slopes	0.3	23.3%
L56A	Muskego and Klossner soils, 0 to 1 percent slopes, frequently flooded	0.3	24.6%
U4A	Urban land-Udipsamments (cut and fill land) complex, 0 to 2 percent slopes	0.7	52.1%
Totals for Area of Interest		**1.3**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate

pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Hennepin County, Minnesota

L2C—Malardi-Hawick complex, 6 to 12 percent slopes

Map Unit Setting

National map unit symbol: h4zf
Mean annual precipitation: 23 to 35 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 124 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Malardi and similar soils: 60 percent
Hawick and similar soils: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Malardi

Setting

Landform: Hills on outwash plains, hills on stream terraces
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Outwash

Typical profile

Ap - 0 to 10 inches: sandy loam
Bt - 10 to 15 inches: sandy loam
2Bt - 15 to 29 inches: loamy coarse sand
2C - 29 to 80 inches: gravelly sand

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Available water storage in profile: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: Sandy Upland Savannas (R103XY019MN)
Forage suitability group: Sandy (G103XS022MN)
Hydric soil rating: No

Description of Hawick

Setting

Landform: Hills on outwash plains, hills on stream terraces

Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Outwash

Typical profile

Ap - 0 to 7 inches: sandy loam
Bw - 7 to 11 inches: gravelly loamy coarse sand
C - 11 to 80 inches: gravelly coarse sand

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: Sandy Upland Prairies (R103XY003MN)
Forage suitability group: Sandy (G103XS022MN)
Hydric soil rating: No

Minor Components

Tomall

Percent of map unit: 10 percent
Landform: Swales on outwash plains, swales on stream terraces
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Crowfork

Percent of map unit: 5 percent
Landform: Hills on outwash plains, hills on stream terraces
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

L56A—Muskego and Klossner soils, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: gjbv
Mean annual precipitation: 23 to 35 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 124 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Klossner, frequently flooded, and similar soils: 45 percent
Muskego, frequently flooded, and similar soils: 45 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Klossner, Frequently Flooded

Setting

Landform: Flats on flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Organic material over till

Typical profile

Oa - 0 to 26 inches: muck
2A1 - 26 to 33 inches: silt loam
2A2 - 33 to 40 inches: loam
2Cg - 40 to 80 inches: loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Frequent
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 20 percent
Gypsum, maximum in profile: 1 percent
Available water storage in profile: Very high (about 17.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: B/D
Ecological site: Organic Floodplain Marsh (R103XY035MN)

Forage suitability group: Not Suited (G103XS024MN)
Hydric soil rating: Yes

Description of Muskego, Frequently Flooded

Setting
Landform: Flats on flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Organic material over coprogenous earth

Typical profile
Oa1 - 0 to 9 inches: muck
Oa2 - 9 to 36 inches: muck
Lco - 36 to 60 inches: coprogenous earth

Properties and qualities
Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Frequent
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 80 percent
Available water storage in profile: Very high (about 19.4 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: C/D
Ecological site: Organic Floodplain Marsh (R103XY035MN)
Forage suitability group: Not Suited (G103XS024MN)
Hydric soil rating: Yes

Minor Components

Suckercreek, frequently flooded
Percent of map unit: 10 percent
Landform: Alluvial flats on flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

U4A—Urban land-Udipsamments (cut and fill land) complex, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: glwk

Mean annual precipitation: 23 to 35 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 155 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 70 percent
Udipsamments, cut and fill land, and similar soils: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform: Stream terraces, outwash plains

Description of Udipsamments, Cut And Fill Land

Setting

Landform: Stream terraces, outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Variable sandy material

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

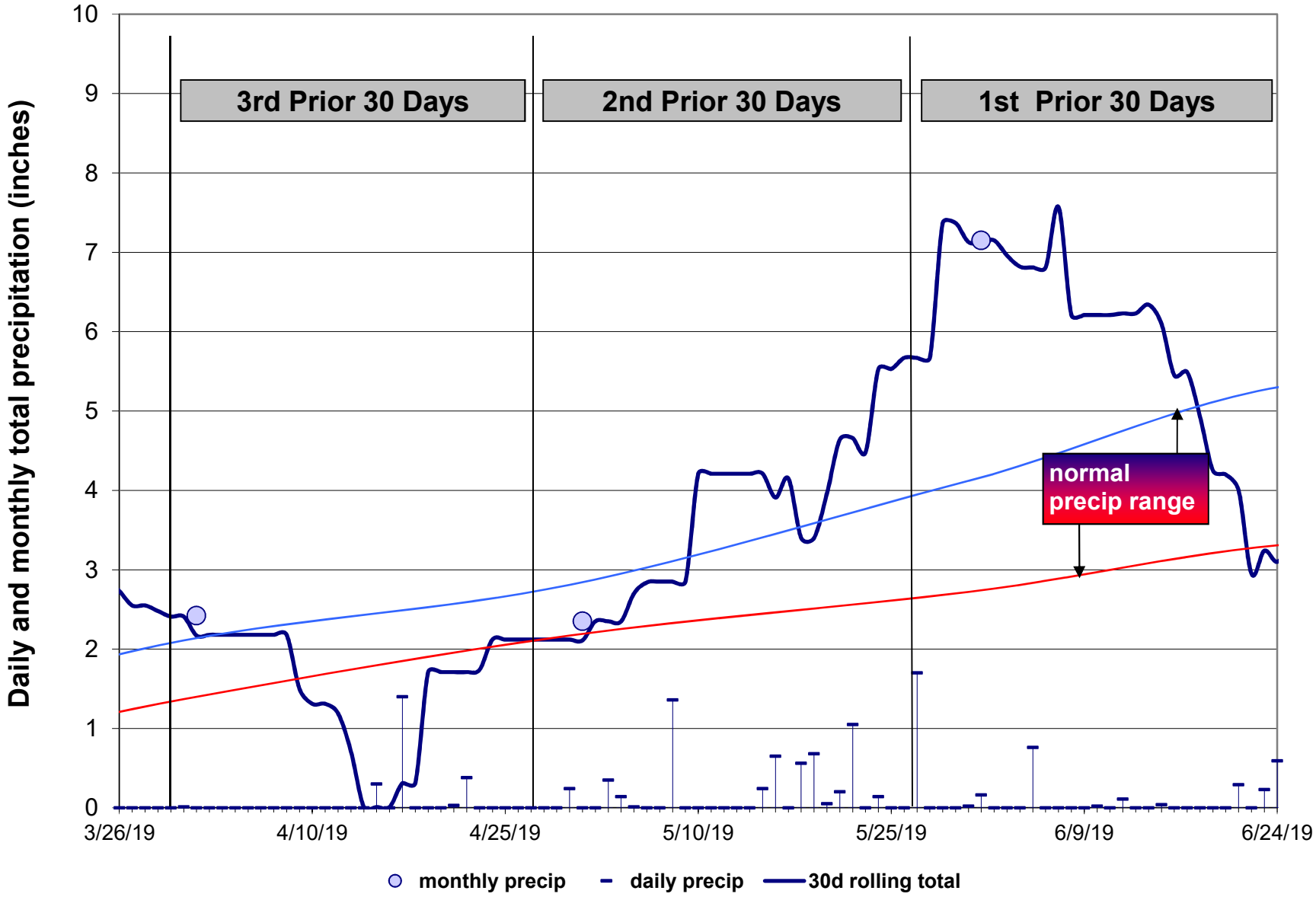
United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix C

Precipitation Data


Daily and monthly total precipitation (inches)
10
9
8
7
6
5
4
3
2
1
0
3rd Prior 30 Days
2nd Prior 30 Days
1st Prior 30 Days
normal
precip range
3/26/19
4/10/19
4/25/19
5/10/19
5/25/19
6/9/19
6/24/19
monthly precip
daily precip
30d rolling total

Minnesota State Climatology Office

Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Hennepin** township number: **117N**
township name: **Minnetonka** range number: **22W**
nearest community: **Groveland** section number: **16**

Aerial photograph or site visit date:
Wednesday, June 26, 2019

Score using 1981-2010 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	first prior month: **May 2019**	second prior month: **April 2019**	third prior month: **March 2019**
estimated precipitation total for this location:	**7.87R**	**3.39**	**2.23**
there is a 30% chance this location will have less than:	2.72	2.17	1.37
there is a 30% chance this location will have more than:	4.12	2.81	2.11
type of month: dry normal wet	**wet**	**wet**	**wet**
monthly score	**3 * 3 = 9**	**2 * 3 = 6**	**1 * 3 = 3**
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	**18 (Wet)**		

Other Resources:

- retrieve daily precipitation data
- view radar-based precipitation estimates
- view weekly precipitation maps
- *Evaluating Antecedent Precipitation Conditions* (BWSR)

Responsive partner.
Exceptional outcomes.

Minnesota Wetland Conservation Act
Notice of Decision

Local Government Unit (LGU)	Address
City of Minnetonka	**11522 Minnetonka Blvd** **Minnetonka, MN 55305**

1. PROJECT INFORMATION

Applicant Name	Project Name	Date of Application	Application Number
Minnehaha Creek Watershed District	**MCWD Campus - 15320 Minnetonka Blvd**	**09/27/2019**	**15320 Minnetonka Blvd 2019**

☒ Attach site locator map.

Type of Decision:

☒ Wetland Boundary or Type ☐ No-Loss ☐ Exemption ☐ Sequencing
☐ Replacement Plan ☐ Banking Plan

Technical Evaluation Panel Findings and Recommendation (if any):

☐ Approve ☐ Approve with conditions ☐ Deny

Summary (or attach):

2. LOCAL GOVERNMENT UNIT DECISION

Date of Decision:

☒ Approved ☐ Approved with conditions (include below) ☐ Denied

LGU Findings and Conclusions (attach additional sheets as necessary):

The City received a request for a wetland boundary and type determination for the Minnehaha Creek Watershed District campus located at 15320 Minnetonka Boulevard. A field site visit was completed on June 26, 2019 to document the presence of wetlands on the site. Findinsg include:

Wetland 1: portions of a Type 1/3 (PFO1A/PEM1C) wetland extend onto the north portion of the property. This wetland area is part of a larger wetland complex associated with Minnehaha Creek.

A constructed stormwater pond meeting wetland criteria was also delineated in the project area. City staff reviewed the delineation on October 18, 2019 with MCWD field staff. The City did not suggest any changes to the delineation, including for the constructed stormwater pond adjacent to the wetland. It is agreed by the City that the pond was created in upland conditions for the purposes of holding stormwater, and would not be regulated as wetland.

For Replacement Plans using credits from the State Wetland Bank:

Bank Account #	Bank Service Area	County	Credits Approved for Withdrawal (sq. ft. or nearest .01 acre)

Replacement Plan Approval Conditions. In addition to any conditions specified by the LGU, the approval of a Wetland Replacement Plan is conditional upon the following:

☐ **Financial Assurance:** For project-specific replacement that is not in-advance, a financial assurance specified by the LGU must be submitted to the LGU in accordance with MN Rule 8420.0522, Subp. 9 (List amount and type in LGU Findings).

☐ **Deed Recording:** For project-specific replacement, evidence must be provided to the LGU that the BWSR "Declaration of Restrictions and Covenants" and "Consent to Replacement Wetland" forms have been filed with the county recorder's office in which the replacement wetland is located.

☐ **Credit Withdrawal:** For replacement consisting of wetland bank credits, confirmation that BWSR has withdrawn the credits from the state wetland bank as specified in the approved replacement plan.

Wetlands may not be impacted until all applicable conditions have been met!

LGU Authorized Signature:

Signing and mailing of this completed form to the appropriate recipients in accordance with 8420.0255, Subp. 5 provides notice that a decision was made by the LGU under the Wetland Conservation Act as specified above. If additional details on the decision exist, they have been provided to the landowner and are available from the LGU upon request.

Name	Title	
Leslie Yetka	**Natural Resources Manager**	
Signature	Date	Phone Number and E-mail
	October 24, 2019	**952-988-8415** **lyetka@eminnetonka.com**

THIS DECISION ONLY APPLIES TO THE MINNESOTA WETLAND CONSERVATION ACT. Additional approvals or permits from local, state, and federal agencies may be required. Check with all appropriate authorities before commencing work in or near wetlands.

Applicants proceed at their own risk if work authorized by this decision is started before the time period for appeal (30 days) has expired. If this decision is reversed or revised under appeal, the applicant may be responsible for restoring or replacing all wetland impacts.

This decision is valid for three years from the date of decision unless a longer period is advised by the TEP and specified in this notice of decision.

3. APPEAL OF THIS DECISION

Pursuant to MN Rule 8420.0905, any appeal of this decision can only be commenced by mailing a petition for appeal, including applicable fee, within thirty (30) calendar days of the date of the mailing of this Notice to the following as indicated:

Check one:

☒ Appeal of an LGU staff decision. Send petition and $---- fee (if applicable) to: **Leslie Yetka** **Natural Resources Manager** **City of Minnetonka** **11522 Minnetonka Blvd** **Minnetonka, MN 55305**	☐ Appeal of LGU governing body decision. Send petition and $500 filing fee to: Executive Director Minnesota Board of Water and Soil Resources 520 Lafayette Road North St. Paul, MN 55155

4. LIST OF ADDRESSEES

☒ SWCD TEP member: **Stacey Lijewski, stacey.lijewski@hennepin.us**
☒ BWSR TEP member: **Ben Carlson, ben.carlson@state.mn.us**
☒ LGU TEP member (if different than LGU Contact): **Aaron Schwartz, aschwartz@eminnetonka.com**
☒ DNR TEP member: **leslie.parris@state.mn.us**
☒ DNR Regional Office (if different than DNR TEP member)
☒ WD or WMO (if applicable): **wca@minnehahacreek.org**
☒ Applicant and Landowner (if different)
☒ Members of the public who requested notice:
None

☒ Corps of Engineers Project Manager
☐ BWSR Wetland Bank Coordinator (wetland bank plan decisions only)

5. MAILING INFORMATION

➢For a list of BWSR TEP representatives: www.bwsr.state.mn.us/aboutbwsr/workareas/WCA_areas.pdf

➢For a list of DNR TEP representatives: www.bwsr.state.mn.us/wetlands/wca/DNR_TEP_contacts.pdf

➢Department of Natural Resources Regional Offices:

NW Region:	NE Region:	Central Region:	Southern Region:
Reg. Env. Assess. Ecol. Div. Ecol. Resources 2115 Birchmont Beach Rd. NE Bemidji, MN 56601	Reg. Env. Assess. Ecol. Div. Ecol. Resources 1201 E. Hwy. 2 Grand Rapids, MN 55744	Reg. Env. Assess. Ecol. Div. Ecol. Resources 1200 Warner Road St. Paul, MN 55106	Reg. Env. Assess. Ecol. Div. Ecol. Resources 261 Hwy. 15 South New Ulm, MN 56073

For a map of DNR Administrative Regions, see: http://files.dnr.state.mn.us/aboutdnr/dnr_regions.pdf

➢For a list of Corps of Project Managers: www.mvp.usace.army.mil/regulatory/default.asp?pageid=687 or send to:

US Army Corps of Engineers
St. Paul District, ATTN: OP-R

180 Fifth St. East, Suite 700
St. Paul, MN 55101-1678

➢For Wetland Bank Plan applications, also send a copy of the application to:
Minnesota Board of Water and Soil Resources
Wetland Bank Coordinator
520 Lafayette Road North
St. Paul, MN 55155

6. ATTACHMENTS

In addition to the site locator map, list any other attachments:

- ☒ **Wetland delineation report**
- ☒ **Joint Application Form**
- ☐
- ☐
- ☐