Permit Application No.: **15-445**

Rules: **Erosion Control, Wetland Protection, & Stormwater Management**

Applicant: **BPS Properties, LLC**

Project: **Mooney Lake Preserve**

Location: **300 Sixth Ave. N., Orono**

Received: **8-24-15**

Complete: **9-15-15**

Noticed: **9-16-15**

Recommendation:

Approval with conditions:

- Submission of a draft Declaration for maintenance of Wetland Buffers and Stormwater Facilities for MCWD approval, then recordation;
- Submission of a Financial Assurance in the amount of $11,000.00;
- Submission of documentation of NPDES permit application and number; and
- Reimbursement of Fees.

And stipulations:

- The applicant must submit buffer monumentation for approval prior to installation; and
- The applicant must submit as-built drawings of all stormwater facilities on completion of construction; and
- The applicant must verify the emergency overflow (EOF) elevation of Wetland 6 against the low opening elevation of the structure to be built on Lot 2 Block 2, to affirm 2 vertical feet of separation from the 100-year high water elevation;

Background:

BPS Properties, LLC has applied for a Minnehaha Creek Watershed District permit for Erosion Control, Wetland Protection, and Stormwater Management for the construction of an 11-lot subdivision located at 300 Sixth Ave. N. in the City of Orono. The project will result in a 3.72 acre increase in impervious surface on the 89.09 acre lot, which ultimately drains to Mooney Lake, with 1.55 acres draining to Hadley Lake.

The applicant has submitted all exhibits, plans and materials necessary to analyze compliance with the MCWD rules. No variances from MCWD rule provisions are needed for approval of the permit. Rather this permit is before the Board of Managers for determination at the request of a member of the public. In accordance with Resolution 049-2004 delegating permitting authority to staff, staff attempted to meet with the individual who made the request to address concerns about the proposed work. Since the requesting party is a plaintiff in the suit related to the project that is the subject of the permit, MCWD legal counsel attempted to set up an informal meeting between the requesting party and staff to address concerns, but counsel for the party declined.

Erosion Control:

The District exercises regulatory authority for erosion control in the City of Orono.

The District's Erosion Control rule is applicable for any project exceeding 5,000 square feet of land disturbance or 50 cubic yards of excavation. The proposed project involves approximately 8.0 acres of disturbance within the City of Orono, the rule is triggered. The erosion and sediment control practices proposed for the project meet District standards. Erosion and sediment control best management practices (BMPs) provided include: silt fence, bio-logs, rock construction entrances, concrete washout locations, inlet protection, seeding, sodding, and vegetation protection, where applicable. The proposed erosion control plan is consistent with requirements outlined in Section 5 of the District's Erosion Control rule, including: identification of onsite water features; location of trees and vegetation on-site; location of all structures; existing and proposed grading; erosion control measures; existing and proposed stormwater management features; and conforms to all criteria outlined in Section 5(b). The proposed erosion control plan meets the District's Erosion Control rule.

Wetland Conservation Act & Wetland Protection:

The District exercises regulatory authority for Wetland Protection in the City of Orono. The District administers the Wetland Conservation Act in the City of Orono.

A complete Wetland Conservation Act (WCA) wetland boundary & type application (W15-14) for the parcels associated with the above mentioned permit application was submitted to the District on May 21, 2015. A WCA Notice of Decision approving the boundaries & types for 14 wetlands on the project parcels was issued on July 10, 2015.

The proposed redevelopment project does not propose wetland impacts, such as would trigger a need for the applicant to apply for replacement-plan approval under WCA. Because the project triggers the District's Stormwater Management rule, under sections 3(b), 4(a) and 5(a) of the Wetland Protection Rule wetland buffers must be provided on each wetland on the property downgradient from land-disturbing activity to be undertaken for the project. The applicant's plans leave existing wetland buffers undisturbed, therefore the requirements for revegetation of buffer areas in paragraph 7(c) of the rule do not apply. However, in accordance with paragraph 7(a) of the rule, the applicant is required to record a declaration ensuring continued protection and maintenance of the buffer areas. Plans submitted provide for installation of buffer monumentation approved at the required spacing throughout the project area, in accordance paragraph 5(d); the applicant must submit monumentation designs/language for verification by MCWD staff prior to installation.

Of the 14 wetlands on the project parcels, eight wetlands are located downgradient of the proposed work. Paragraphs 6(b) and 6(c) of the District's Wetland Protection Rule allow reductions in buffer width when the applicant submits documentation of beneficial slope or soil conditions (Section 6(b)), or demonstrated site constraints (Section 6(c)). The applicant is not proposing reductions in buffer width based on either of these criteria, and is applying the full applicable buffer width as shown in Table 1. The applicant is not utilizing the buffer width averaging provided in paragraph 6(c) of the rule to reduce buffer widths at any location on the project site, and the minimum applied buffer widths in paragraph 6(a) of the rule – 16 feet for Manage 3 wetlands, 24 feet for manage 2 wetlands – is maintained throughout the project area.

Wetland	Management Class	Base Buffer Width	Provided Buffer Width
Wetland 1	Manage 2	30'	30'
Wetland 2	Manage 3	20'	20'
Wetland 6	Manage 3	20'	20'
Wetland 7*	Manage 2	30'	30'
Wetland 8	Manage 3	20'	20'
Wetland SW	Manage 3	20'	20'
Wetland ML	Manage 2	30'	30'
Wetland P	Manage 2	30'	30'

Table 1:Wetland Buffer Widths

*The management class of Wetland 7 was not listed on the District's Functional Assessment of Wetlands inventory; thus, in accordance with the Wetland Protection rule, on August 27th, 2015 the applicant submitted a Minnesota Routine Assessment Method (MnRAM) report evaluating the management class. The District reviewed and approved the output of the report, which classified the wetland as Manage 2.

All wetlands and corresponding buffer areas are depicted in Attachment 5 & 6.

The plan meets the District's Wetland Protection rule.

Stormwater Management:

The District exercises regulatory authority for stormwater management in the City of Orono.

The District's Stormwater Management rule is applicable for any project proposing new or replacing existing impervious surface. Because the proposed work constitutes redevelopment involving the addition of 3.72 acres (162,043 square feet) of new impervious surface to the present 1.38 acres of impervious area on a site larger than

one acre, paragraph 5(b) of the rule requires the applicant to provide stormwater management meeting the District's stormwater criteria for the entire site area.

The table below summarizes the impervious surface increase on-site:

Size of Site (ac)	Site Drains To	Existing Impervious (ac)	Proposed Impervious (ac)
89.09 (8.0 disturbed)	Mooney Lake and Hadley Lake	1.38	5.10

Table 2: Increase in Impervious Surface

The proposed project will construct two new stormwater ponds (one containing a filtration bench), two infiltration basins, and 9 lot-specific raingardens. All proposed BMPs are designed and will be installed in accordance with generally accepted design practices and guidance of the Minnesota Pollution Control Agency's *Minnesota Stormwater Manual*. In accordance with Section 3(d) of the District's Stormwater Management rule, BMPs have been incorporated to provide the necessary volume of abstraction through on-site infiltration and peak flow control and to limit pollutant discharge from the site. Paragraph 3(c)(1) of the District's Stormwater Management rule requires an applicant's stormwater management plan to provide for the abstraction of the first one inch of rainfall from the site's impervious surface. Here, that calculation results in a required 18,513 cubic feet of abstraction (i.e., stormwater retained onsite). The submitted stormwater management plan for the project provides an abstraction volume of 20,625 cubic feet of runoff, as shown in Table 3 below.

The abstraction volume is provided by the following stormwater practices:

Source of Impervious Surface	Area (ac)	Required Abstraction (cf)	Provided Abstraction (cf)	BMP Proposed
Existing Drive	0.37	1,333	1,350	Infiltration Basin (south)
New West Road and 2 Houses w/ Driveways	0.89	3,233	3,450	Infiltration Basin (north)
New East Road	0.36	1,300	1,650	Filtration Bench
9 Houses with Driveways	3.48	12,646	14,175	Raingardens
Totals	5.10	18,513	20,625	

Table 3: Abstraction by Stormwater Practice

All infiltration practices were designed and sized to draw down within 48 hours. The District's engineer analyzed the design and sizing of the proposed infiltration practices based on the infiltration rates through the soil media, and determined the applicant has met the volume control criteria. The infiltration rates were based on soil information provided by the applicant and soil borings, which match the infiltration rates prescribed by MPCA guidelines.

The stormwater-management plan for the project provides phosphorus control by virtue of its meeting the volume control requirement in 3(c)(1).

The rate control requirement in paragraph 3(b) of the District's Stormwater Management rule requires no net increase in the peak runoff rate for the 1-, 10-, and 100-year over the site's impervious surface. The proposed stormwater ponds and infiltration practices will reduce runoff below the existing rates for the 1-, 10-, and 100-year TP40 rain events. Thus, in accordance with Section 3(b)(2), no rate increase will occur within any drainage area of the site. The applicant has shown that the criteria of Stormwater rate and volume control were met.

After review of HydroCAD calculations, the grading plan, and the location of proposed impervious surfaces, the project as proposed will not increase the bounce and inundation of any wetland or waterbody beyond the limits

outlined in the Stormwater Management rule Section 8(b)(1-2). Also, the project does not propose any changes to runout control elevations for any waterbody or wetland which satisfies the criteria of Rule 8(b)(3).

Table 4 below lists the pre- and post-construction runoff rates for the proposed disturbed areas at the downgradient site boundaries and discharge locations:

Drainage Area	1-year event		10-year event		100-year event	
	Pre-	*Post-*	*Pre-*	*Post-*	*Pre-*	*Post-*
Hadley Lake	0.13	0.11	1.75	0.97	6.30	3.91
Mooney Lake	0.52	0.19	6.17	2.85	7.87	6.67
Total (Disturbed)	0.65	0.30	7.92	3.82	14.17	10.58

Table 4: Existing and Proposed Runoff Rates

The applicant has also provided analysis showing that the raingardens would provide phosphorus, rate, and volume for each lot.

Based upon the elevation of the proposed building pads in relation to adjacent stormwater facilities, wetlands or other waterbodies, all low openings of structures are proposed to have two feet of vertical separation from the 100-year high water elevations, with the exception of the building pad located on Lot 2, Block 2. The criteria of the rule will be met on the stipulation that, the emergency overflow (EOF) elevation of wetland 6 be verified and maintained and the low openings on Lot 2 Block 2 be verified to show 2 feet of vertical separation.

The proposed peak runoff rates meet the District's rate-control requirements. The proposed stormwater management system satisfies the District's requirements.

Summary:
BPS Properties, LLC is proposing an 11-lot subdivision project that will trigger the District's Erosion Control, Wetland Protection, and Stormwater Management rules. The project as proposed meets applicable requirements under each of these District rules. Staff recommends approval of this application with the conditions provided above.

Attachments:
1. Permit Application
2. Site Plan – North Detail
3. Site Plan – South Detail
4. Notice of Decision – Approved July 10, 2015
5. Wetland Buffer Plan – North
6. Wetland Buffer Plan – South

_____

Tom Dietrich Date: 10/22/15

Print Form

15-445

WATER RESOURCE PERMIT APPLICATION FORM

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

YOU MUST OBTAIN ALL REQUIRED AUTHORIZATIONS BEFORE BEGINNING WORK.

1. Name of each property owner: BPS Properties L.L.C. (George W. Stickney
Mailing Address: Coldwell Banker Burnet Realty Attn. ↑ City: Wayzata State: MN. Zip: 55391
Email Address: Gstick@cbburnet.com Phone: 952 476-3694 Fax: 952 216-0055

2. Property Owner Representative Information (not required) (licensed contractor, architect, engineer, etc…)
Business Name: GRONBERG + ASSOCIATES, INC. Representative Name: MARK GRONBERG
Business Address: 945 N. WILLOW DRIVE City: LONG LAKE State: MN Zip: 55356
Email Address: Markg@gronbergassoc.com Phone: 952-473-4141 Fax: 952-473-4435

3. Project Address: 300 SIXTH AVE. N. City: ORONO
State: MN Zip: 55391 Qtr Section(s): SE Section(s): 25 Township(s): 118 Range(s): 23
Lot: N/A Block: N/A Subdivision: N/A PID: 25-118-23-41-0001
25-118-23-43-0001
25-118-23-44-0003

4. Size of project parcel (square feet or acres): 89.09 ± AC. EXCL. ROAD R/W
Area of disturbance (square feet): 3 ± AC. NOW 8 ± AC. EVENTUALLY Volume of excavation/fill (cubic yards): 10,000
Area of existing impervious surface: 1.38 ± AC Area of proposed impervious surface: 5.10 ± AC.
Length of shoreline affected (feet): N/A Waterbody (& bay if applicable): MOONEY LAKE

5. Type of permit being applied for (Check all that apply):

- ☒ EROSION CONTROL
- ☐ FLOODPLAIN ALTERATION
- ☒ WETLAND PROTECTION
- ☐ DREDGING
- ☐ SHORELINE/STREAMBANK STABILIZATION
- ☐ WATERBODY CROSSINGS/STRUCTURES
- ☒ STORMWATER MANAGEMENT
- ☐ APPROPRIATIONS
- ☐ ILLICIT DISCHARGE

6. Project purpose (Check all that apply):

- ☐ SINGLE FAMILY HOME
- ☒ ROAD CONSTRUCTION
- ☐ UTILITIES
- ☐ DREDGING
- ☐ SHORELINE/STREAMBANK STABILIZATION
- ☐ MULTI FAMILY RESIDENTIAL (apartments)
- ☐ COMMERCIAL or INSTITUTIONAL
- ☒ SUBDIVISIONS (include number of lots) 11
- ☐ LANDSCAPING (pools, berms, etc.)
- ☐ OTHER (DESCRIBE):

7. NPDES/SDS General Stormwater Permit Number (if applicable): WILL BE APPLYING WHEN A CONTRACTOR IS SELECTED.

8. Waterbody receiving runoff from site: MOONEY LAKE

9. Project Timeline: Start Date: FALL 2015 Completion Date: FALL 2015

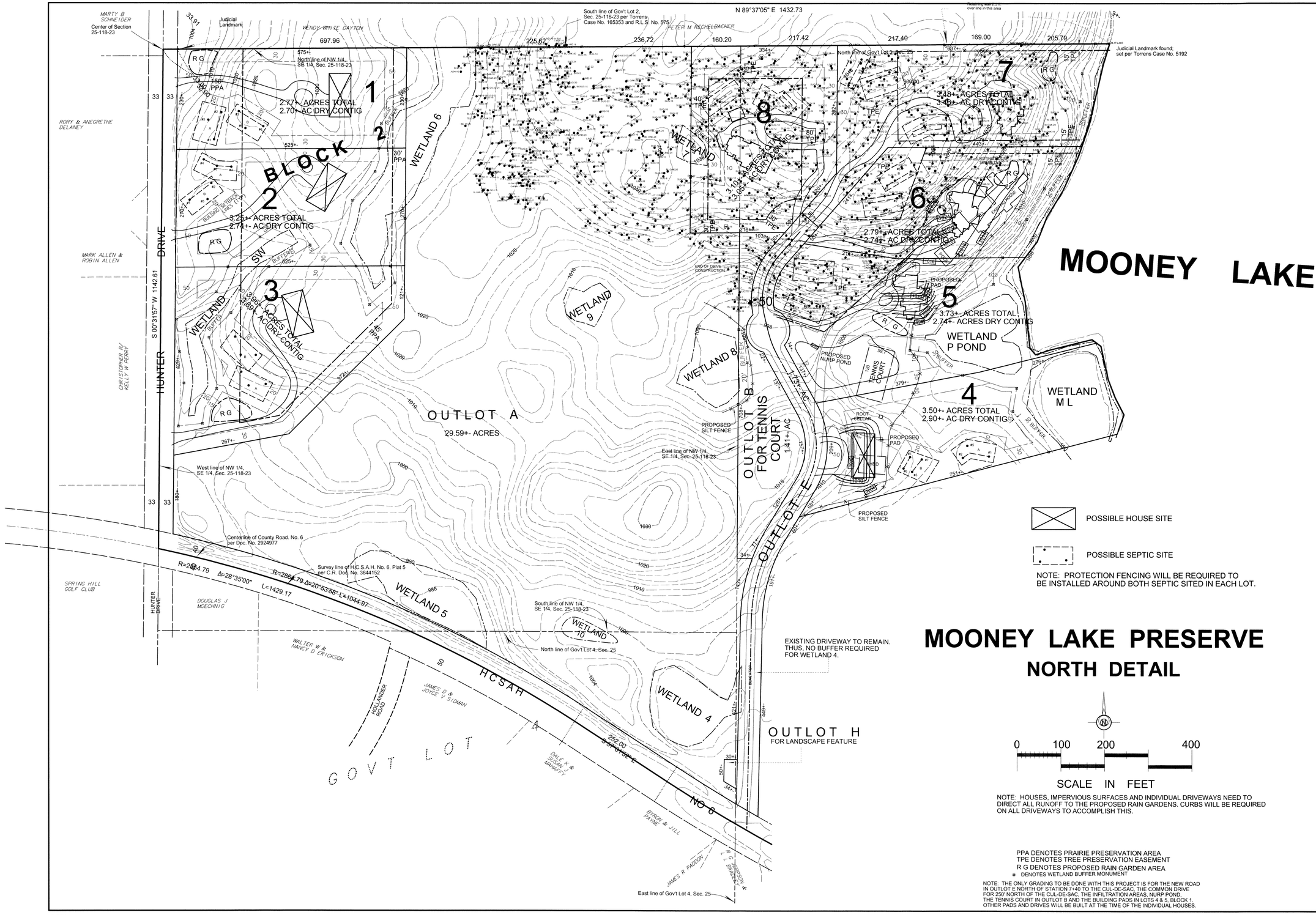
Permits have been applied for: City ☐ County ☒ MN Pollution Control Agency ☐ DNR ☐ COE ☐
Permits have been received: City ☐ County ☐ MN Pollution Control Agency ☐ DNR ☐ COE ☐

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

BPS Properties L.L.C. 08/24/15
Signature of Each Property Owner Date

RECEIVED
AUG 24 2015
By

MOONEY LAKE PRESERVE
NORTH DETAIL



NOTE: HOUSES, IMPERVIOUS SURFACES AND INDIVIDUAL DRIVEWAYS NEED TO DIRECT ALL RUNOFF TO THE PROPOSED RAIN GARDENS. CURBS WILL BE REQUIRED ON ALL DRIVEWAYS TO ACCOMPLISH THIS.

PPA DENOTES PRAIRIE PRESERVATION AREA
TPE DENOTES TREE PRESERVATION EASEMENT
R G DENOTES PROPOSED RAIN GARDEN AREA
⊠ DENOTES WETLAND BUFFER MONUMENT

NOTE: THE ONLY GRADING TO BE DONE WITH THIS PROJECT IS FOR THE NEW ROAD IN OUTLOT E NORTH OF STATION 7+40 TO THE CUL-DE-SAC, THE COMMON DRIVE FOR 250' NORTH OF THE CUL-DE-SAC, THE INFILTRATION AREAS, NURP POND, THE TENNIS COURT IN OUTLOT B AND THE BUILDING PADS IN LOTS 4 & 5, BLOCK 1. OTHER PADS AND DRIVES WILL BE BUILT AT THE TIME OF THE INDIVIDUAL HOUSES.

REVISIONS

DATE	BY	REMARKS
5-21-15		REVISED LOT LINES
6-1-15		
8-22-15		
9-3-15		
9-25-15		
10-12-15		

DESIGNED
DRAWN
CHECKED

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
DATE 10-12-15 MINN. LICENSE NUMBER 17727

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 Land Surveyor under the laws of the State of Minnesota.
DATE 10-12-15 MINN. LICENSE NUMBER 17727

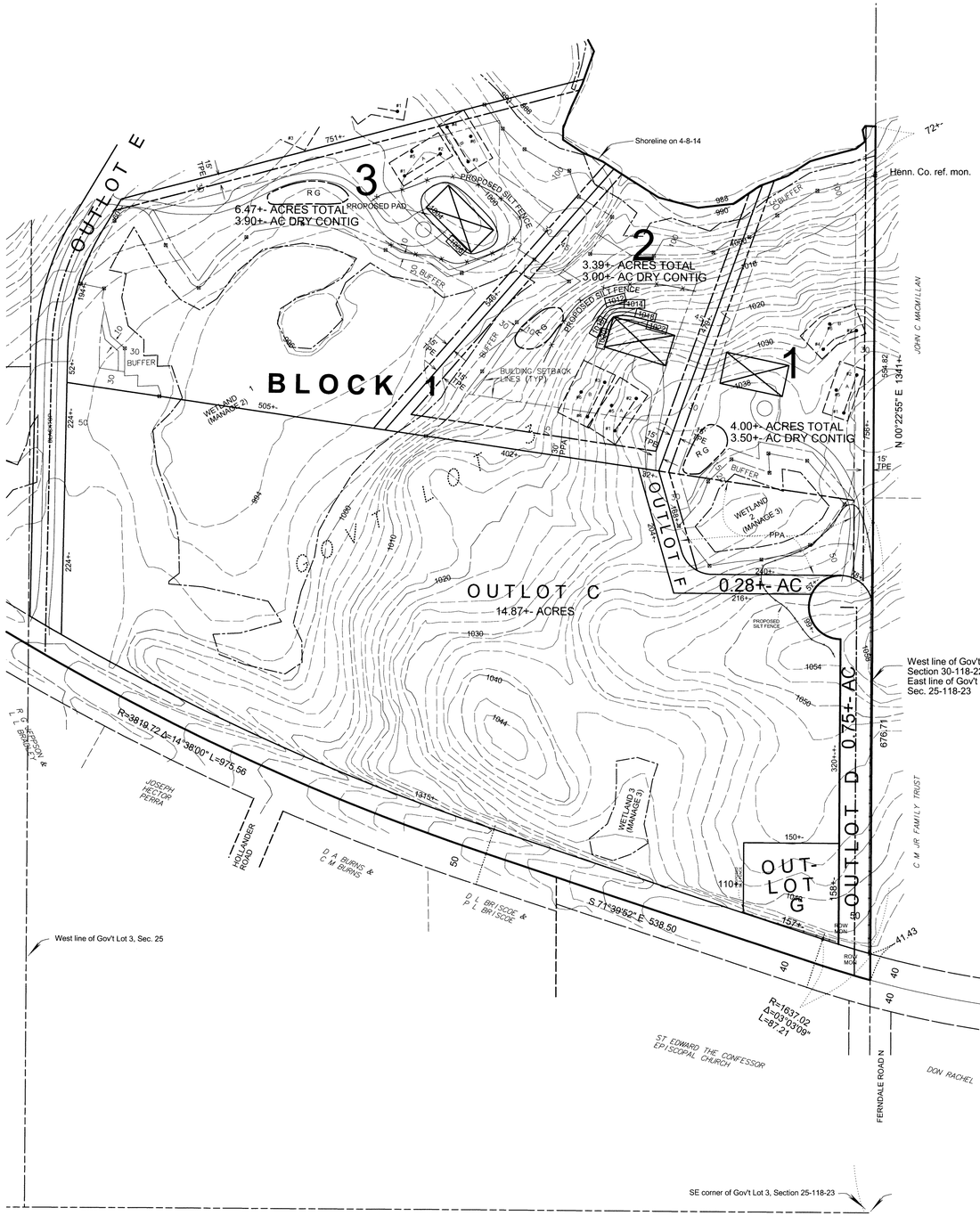
GRONBERG & ASSOCIATES, INC.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS
445 N. WILLOW DRIVE LONG LAKE, MN 55356
PHONE: 952-473-4141 FAX: 952-473-4435

JOB NO. 5-5-15
SCALE 1"=100'
JOB NO. 15-052
SHEET NO. OF SHEETS

15-052

MOONEY LAKE PRESERVE

SOUTH DETAIL



0 100 200 400

SCALE IN FEET

POSSIBLE HOUSE SITE

SEPTIC SITE

PPA DENOTES PRAIRIE PRESERVATION AREA
TPE DENOTES TREE PRESERVATION EASEMENT
R G = PROPOSED RAIN GARDEN

NOTE: HOUSES, IMPERVIOUS SURFACES AND INDIVIDUAL DRIVEWAYS NEED TO DIRECT ALL RUNOFF TO THE PROPOSED RAIN GARDENS. CURBS WILL BE REQUIRED ON ALL DRIVEWAYS TO ACCOMPLISH THIS.

R G DENOTES PROPOSED RAIN GARDEN AREA

⊠ DENOTES WETLAND BUFFER MONUMENT

NOTE: THE ONLY GRADING TO BE DONE WITH THIS PROJECT IS FOR THE NEW ROAD IN OUTLOT D, THE NURP POND IN OUTLOT G AND THE BUILDING PAD IN LOT 3, BLOCK 2. OTHER PADS AND DRIVES WILL BE BUILT AT THE TIME OF THE INDIVIDUAL HOUSES.

GRONBERG & ASSOCIATES, INC.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS
445 N. WILLOW DRIVE LONG LAKE, MN 55356
PHONE: 952-473-4141 FAX: 952-473-4435

DATE 5-5-15 | SCALE 1"=±100' | JOB NO. 15-052 | SHEET OF SHEETS

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 Land Surveyor under the laws of the State of Minnesota.

Mark A. Gronberg

DATE 10-12-15 MINN. LICENSE NUMBER 12737

DESIGNED | DRAWN | CHECKED

REVISIONS

DATE	BY	REMARKS
6-4-15		
7-27-15		REVISED LOT LINES
8-22-15		
9-3-15		
9-25-15		
10-12-15		

15-052

Minnesota Wetland Conservation Act
Notice of Decision

Local Government Unit (LGU)	Address
Minnehaha Creek Watershed District	**15320 Minnetonka Blvd** **Minnetonka, MN 55345**

1. PROJECT INFORMATION

Applicant Name	Project Name	Date of Application	Application Number
George Stickney (BPS Properties, LLC) Wendy Dayton (Landowner)	**300 6th Ave N**	**4/20/15 (Incomplete)** **6/17/15 (Complete)**	**W15-14**

☒ 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:

2. LOCAL GOVERNMENT UNIT DECISION

Date of Decision:

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

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

George Stickney (BPS Properties, LLC) and Wendy Dayton (landowner) applied for a wetland boundary and type confirmation for the wetlands located at 300 6th Ave N in the City of Orono. Legal description: Section 25, Township 118N, Range 23W (PID 2511823410001, 2511823130006, 2511823440003, and 2511823430001).

A wetland delineation was conducted by Svoboda Ecological Resources on November 3, 4, 6, 11, 2014 and April 4 and 10, 2015. A complete delineation report was submitted on May 21, 2015. Thirteen wetlands were delineated on site, including the fringe of one DNR Public Water (Lake Mooney). Two additional areas were investigated for wetland characteristics and determined to be upland. The subject area is approximately 80 acres in size.

Wetland one was classified as a Type 3-4 excavated shallow/deep fresh marsh surround by a Type 2 fresh meadow wetland, Wetland two was a type 1 floodplain forest, Wetland three was a Type 2 fresh wet meadow, Wetland four was a Type 4 deep marsh, Wetland five was a Type 1-2 fresh wet meadow/floodplain forest, Wetland six was a Type 1 floodplain forest, Wetland seven was a Type 1 seasonally flooded basin, Wetland eight was a Type 2 fresh wet meadow, Wetland nine was a Type 2 fresh wet meadow, Wetland ten was a Type 2 fresh wet meadow, Wetland "ML" was a Type 2 fresh wet meadow that fringes Mooney Lake, and Wetland "P" surrounds a pond and is a Type 3 shallow

marsh.

Wenck Associates, representing MCWD, and BWSR reviewed the boundaries in the field on 6/11/15. Wetland boundary revisions were requested and an additional wetland, Wetland 11 (Type 1, seasonally flooded basin), was identified and delineated during the field visit. Final updated materials from SER were received by MCWD on 6/17/15.

MCWD approves the wetland boundaries and types as delineated in the field and documented in the updated SER materials. This decision is valid for five years. A future project located on this property may require a permit from the MCWD.

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 **Beth Brown**	Title **Permitting Technician**	
Signature Elizabeth Brown	Date 7/10/15	Phone Number and E-mail **(952) 641-4504** **ebrown@minnehahacreek.org**

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 $0 fee (if applicable) to: **Minnehaha Creek Watershed District** **15320 Minnetonka Blvd** **Minnetonka, MN 55345**	☐ 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@co.hennepin.mn.us**
☒ BWSR TEP member: **Ben Meyer – ben.meyer@state.mn.us**
☐ LGU TEP member (if different than LGU Contact):
☐ DNR TEP member: **Kate Drewry- kate.drewry@state.mn.us**
☒ DNR Regional Office (if different than DNR TEP member): **Brooke Haworth - brooke.haworth@state.mn.us**
☐ WD or WMO (if applicable):
☒ **George Stickney (BPS Properties, LLC) gstickney@cbburnet.com**
☒ Members of the public who requested notice: **Frank Svoboda (Svoboda Ecological Resources) franks@gpsinnovations.com; Christine Mattson - cmattson@ci.orono.mn.us; Melanie Curtis - mcurtis@ci.orono.mn.us**
☒ Corps of Engineers Project Manager (notice only): **Melissa Jenny – melissa.m.jenny@usace.army.mil**
☐ BWSR Wetland Bank Coordinator (wetland bank plan applications 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

➢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:

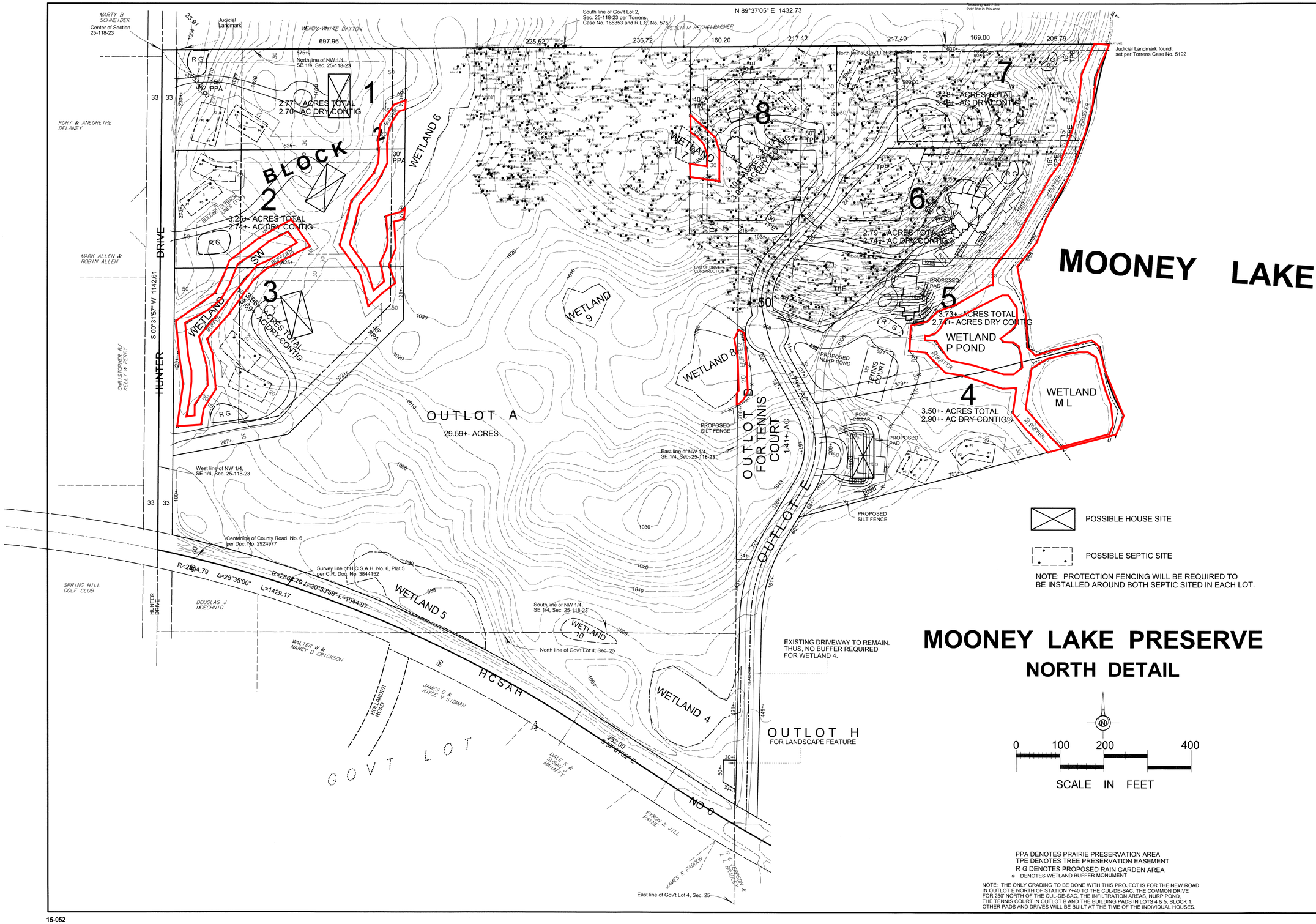
Minnesota Board of Water and Soil Resources
Wetland Bank Coordinator
520 Lafayette Road North
St. Paul, MN 55155

6. ATTACHMENTS

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

☒ **Approved wetland boundaries**
☒ **SER technical memo**
☐

MOONEY LAKE PRESERVE
NORTH DETAIL



PPA DENOTES PRAIRIE PRESERVATION AREA
TPE DENOTES TREE PRESERVATION EASEMENT
R G DENOTES PROPOSED RAIN GARDEN AREA
⊠ DENOTES WETLAND BUFFER MONUMENT

NOTE: THE ONLY GRADING TO BE DONE WITH THIS PROJECT IS FOR THE NEW ROAD IN OUTLOT E NORTH OF STATION 7+40 TO THE CUL-DE-SAC. THE COMMON DRIVE FOR 250' NORTH OF THE CUL-DE-SAC, THE INFILTRATION AREAS, NURP POND, THE TENNIS COURT IN OUTLOT B AND THE BUILDING PADS IN LOTS 4 & 5, BLOCK 1. OTHER PADS AND DRIVES WILL BE BUILT AT THE TIME OF THE INDIVIDUAL HOUSES.

15-052

GRONBERG & ASSOCIATES, INC.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS
445 N. WILLOW DRIVE LONG LAKE, MN 55356
PHONE: 952-473-4141 FAX: 952-473-4435

DATE 5-5-15
SCALE 1"=100'
JOB NO. 15-052
SHEET NO. OF SHEETS

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.
Richard L. Gronberg
DATE 9-25-15 MINN. LICENSE NUMBER 17255

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 Land Surveyor under the laws of the State of Minnesota.
Richard L. Gronberg
DATE 9-25-15 MINN. LICENSE NUMBER 17255

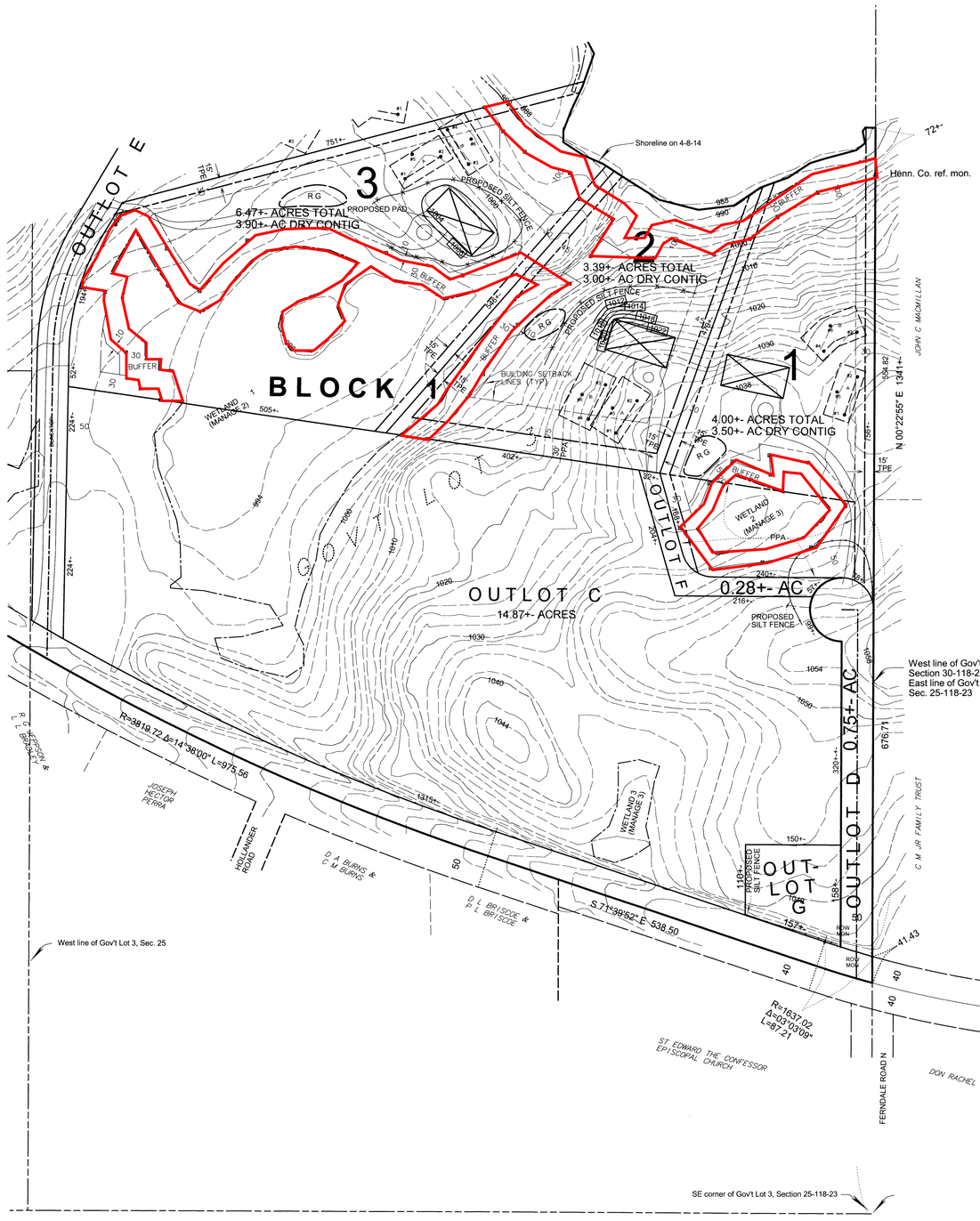
DESIGNED
DRAWN
CHECKED

REVISIONS

DATE	BY	REMARKS
5-21-15		REVISED LOT LINES
6-1-15		
8-22-15		
9-3-15		
9-25-15		

MOONEY LAKE PRESERVE

SOUTH DETAIL



POSSIBLE HOUSE SITE

SEPTIC SITE

PPA DENOTES PRAIRIE PRESERVATION AREA
TPE DENOTES TREE PRESERVATION EASEMENT
R G = PROPOSED RAIN GARDEN

R G DENOTES PROPOSED RAIN GARDEN AREA

⊠ DENOTES WETLAND BUFFER MONUMENT

NOTE: THE ONLY GRADING TO BE DONE WITH THIS PROJECT IS FOR THE NEW ROAD IN OUTLOT D, THE NURP POND IN OUTLOT G AND THE BUILDING PAD IN LOT 3, BLOCK 2. OTHER PADS AND DRIVES WILL BE BUILT AT THE TIME OF THE INDIVIDUAL HOUSES.

GRONBERG & ASSOCIATES, INC.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS
445 N. WILLOW DRIVE LONG LAKE, MN 55356
PHONE: 952-473-4141 FAX: 952-473-4435

DATE 5-6-15
SCALE 1"=100'
JOB NO. 15-052
SHEET OF SHEETS

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 Land Surveyor under the laws of the State of Minnesota.

Richard J. Gronberg

DATE 9-25-15 MINN. LICENSE NUMBER 12755

DESIGNED
DRAWN
CHECKED

REVISIONS

DATE	BY	REMARKS
6-1-15		REVISED LOT LINES
7-27-15		
8-22-15		
9-3-15		
9-25-15		

15-052

MINNEHAHA CREEK WATERSHED DISTRICT
QUALITY OF WATER QUALITY OF LIFE

Memo

To: Board of Managers

From: Tom Dietrich, Permit & Compliance Coordinator

Date: October 19th, 2015

Re: **Board Packet Material for Permit #15-445: Mooney Lake Preserve**

Managers,

Attached is an affidavit and memo that were filed Friday, October 16, on behalf of the plaintiffs in the Healy/Mooney Lake Preserve litigation. (As you know, Minnehaha Creek Watershed District is a defendant.) The affidavit and memo are from Cecilio Olivier of Emmons and Olivier Resources and relate to stormwater management for the proposed redevelopment, which is the subject of permit 15-445 on the managers' agenda for the October 22 meeting. Staff and the MCWD engineer have reviewed the Olivier memo and are preparing a response for the managers' review. The responsive memo will be uploaded/delivered as soon as possible, prior to the meeting.

In addition, another affidavit and report were filed in the Mooney Lake Preserve litigation Friday, October 16, from Doug Mensing from Applied Ecological Services. The Mensing memo addresses topics that need not be considered by the managers, but one point from the Mensing memo will be addressed by the staff/engineer response:

> 15. Wetland 7 represents a vernal pool, also known as an ephemeral pool. This type of wetland plays a critical role in the life cycle of certain species, including uncommon species such as salamanders, as well as commoner toads and frogs. Proposed Lot 8 encroaches on this wetland. Land alteration, tree clearing, and runoff from this lot may adversely impact this sensitive and important wetland type.

If you have any questions or concerns prior to the October 22nd meeting, please feel free to contact me.

Sincerely,

Tom Dietrich
Permit & Compliance Coordinator

STATE OF MINNESOTA **DISTRICT COURT**

COUNTY OF HENNEPIN **FOURTH JUDICIAL DISTRICT**

Case Type:

Anne Healey, Tobias Shapiro,
Audra Nestler Holm, Karl Pokorny,
Jennifer and Jeff Mendeloff,
Rebecca Ribich, Mark and Karen Reed,
Eric and Karen Lunden, and Marilyn Miller

Case No. _____

Plaintiffs,

v.

AFFIDAVIT OF CECILIO OLIVIER, MS, PE

George Stickney, owner/officer, BPS Properties, LLC,
George Stickney in his individual capacity,
BPS Properties, LLC,
Minnehaha Creek Watershed District, and
City of Orono

Defendants.

STATE OF MINNESOTA)
) ss
COUNTY OF HENNEPIN)

I, Cecilio Olivier, MS, PE, being first duly sworn, states and deposes as follows:

1. Your affiant states that I earned my Mining/Mechanical Engineering Degree from the Polytechnic University of Madrid, Spain in 1986.

2. Your affiant states that I earned my Masters of Science in Civil and Environmental Engineering Degree from the University of Minnesota in 1990.

3. Your affiant states that I have over 29 years of professional and research experience in the fields of Environmental Water Resources Engineering, Design and Hydrologic/Hydraulic Modeling.

4. Your affiant states that I formed my consulting and engineering practice Emmons & Olivier in 1997.

5. My principal work as a Water Resources Senior Engineer focuses on Integrated Water Resources Management and Assessment, Runoff Quality and Quantity Modeling and Stormwater Best Management Practices Design and Implementation.

6. Through my practice, I have worked on a wide range of environmental, ecological and particular water related projects. Most notably and presently, I provide consulting advice on stormwater assessment and facilities design related matters to the US Bank/Viking Stadium project.

7. Your affiant further states that on this Mooney Lake Preserve Development, I performed with the assistance of staff at my firm, a number of significant analyses; conducted a review of several hundred pages of critical documents; did a site visit to the subject property where I performed topographic and runoff paths assessment, location identification of the proposed development footprint and proposed runoff mitigation measures and evaluation of proposed tree loss.

8. Your affiant states that in conducting my analysis, I considered five factors that Minnesota Courts weigh to determine whether a proposed development project will "materially adversely affect the natural resources on a land or property.

9. These five factors are:
    1. The quality and severity of any adverse effects of the proposed action on the natural resources affected;
    2. Whether the natural resources affected are rare, unique, endangered, or have historical significance;
    3. Whether the proposed action will have long-term adverse effects on natural resources, including whether the affected resources are easily replaceable...;
    4. Whether the proposed action will have significant consequential effects on other natural resources ...;
    5. Whether the affected natural resources are significantly increasing or decreasing in number, considering the direct and consequential impact of the proposed action.

10. My own opinion is based upon direct evidence as it relied on scientifically-defensible information that is acceptable across the scientific community within which I practice; the weight of the evidence as it relates to the natural resources on the property, specifically as to the Mooney Lake Watershed and other water related resource values of the property; and, the anticipated development of those natural resource values, in particular as to the storm-water and other water resources.

11. To which, your affiant states that following customary scientific practices and procedure in my field, I prepared the attached report, which is a true and correct version of my analysis and opinions (see Exhibit A).

12. This report is based on my analysis of the data I collected from a site visit on October 14, 2015, in which I conducted a field assessment of the Dayton Property. It is also based on my review of all relevant documents, which I have attached as exhibit B.

13. After a thorough review of all the relevant documents, maps, surveys, photographs, and plans prepared by the City of Orono as well as proposed Plan A and B prepared by BPS Properties, L.L.C.; and after the site visit to which I referred to above, it is my unequivocal opinion that the proposed Plan B presented by BPS Properties, L.L.C. does inflict a material adverse effect on the natural water resources, to which I specifically refer to in my report and, across the entire ecosystem leaving irreparable harm and long term effects on the subject Dayton Property.

Further Your Affiant Sayeth Not,

October 15, 2015

Cecilio Olivier

Subscribed and sworn to before me
on this 15th day of October, 2015.

Notary Public, State of Minnesota
My commission expires: January 31st of 2019

ASHLEY E. SANDOR
Notary Public
State of Minnesota
My Commission Expires
January 31, 2019

Exhibit A

technical memo

Project Name |	Orono Dayton Property Development **Date** | October 15, 2015
To / Contact info |	Robert R. Hopper, Robert R. Hopper & Associates, L.L.C.
Cc / Contact info |	James S. Lane
From / Contact info |	Cecilio Olivier, MS, PE
Regarding |	Stormwater Review of the Mooney Lake Preserve Development in Orono

Dear Mr. Hopper,

I have reviewed the stormwater materials provided yesterday by the MCWD regarding the proposed development in the Mooney Lake Preserve.

The received information included hundreds of pages and plans, many duplicated documents and was delivered in a very disorganized fashion. The materials included several different stormwater plans at various levels of design, but the final plans and final submittal materials were not identified. It took us a significant effort to finally locate and assess these materials.

Overall, the proposed development will have significant adverse impacts on the unique natural resources of the site and to Mooney Lake. The following is a summary of our main findings:

- The development proposes about 4.9 acres (212,000 ft^2) of additional impervious area, which is in itself a very high burden on the very sensitive resources in the area. In addition, the final impervious area after the development is constructed will be significantly higher for the following reasons:
    - Impervious area of accessory structures is not considered in the impervious area these calculations. Based on the proposed lot sizes, the City of Orono allows a maximum total accessory building footprint ranging from 2,400 square feet to 4,800 square feet per lot. This will result in 15% more (33,200 square feet) impervious area requiring mitigation.
    - The combination of new and existing road area on the west side of the property is shown in the calculations as lesser than the existing driveway, despite the addition of a cul-de-sac and widening to 24 feet.
    - The driveways are depicted with the minimum width of 20 feet while this is stated as the minimum criteria, i.e. driveways can be wider as stated under the Conclusions, Order and Conditions of the 7/23/15 City of Orono Draft Resolution.

  The addition of impervious area at the level proposed and with limited mitigation, will result in the following impacts:

    - Alteration and concentration of stormwater runoff from impervious surfaces causing greater amounts of erosion and less diffusion for soil uptake and infiltration.
    - Decrease in water quality through higher concentration and accelerating delivery of pollutants, including phosphorus.
    - Reduction in the biological diversity of this unique and irreplaceable area, changing to different pollutant tolerant species.

- Exacerbate flooding potential in the already flood-prone Mooney Lake.

- As a result of a significant portion of the big woods area being converted into impervious surfaces, there will be a considerable increase in runoff volume above what it could be mitigated by the proposed stormwater infrastructure and practices. This will produce long-term adverse effects on the forest, wetlands and Mooney Lake. Additionally, the volume control efficacy of the proposed mitigation facilities is not corroborated by the design and supporting documentation:
  - Rain garden infiltration rates are not supported by underlying soil evidence.
  - Infiltration rates assumed for the roadside facilities of 0.2, 0.3, and 0.8 inches/hour are inconsistent with soil boring information presented. The soil borings consistently display the underlying soil to be sandy clay loam for which the Minnesota Stormwater Manual design rate of 0.2 inches/hour is to be assigned.
  - Rain garden design assumes entirety of the proposed impervious area will be directed to the facility. Review of the runoff catchment areas to the rain gardens found that runoff from the homes, driveways and yard will bypass the rain gardens and be directed to the woods, wetlands and Mooney Lake.
    - Lot 1 Block 1: Rain garden captures portion of driveway; remaining runoff directed to Wetland 2.
    - Lot 2 Block 1: Rain garden captures portion of driveway; remaining runoff directed to Wetland 6.
    - Lot 3 Block 1: Rain garden captures majority of driveway and portion of the house; remaining runoff directed to Wetland 1
    - Lot 4 Block 1: NURP pond captures 50% of runoff; 50% directed to the wetland ML and P near Mooney Lake
    - Lot 5 Block 1: NURP pond and rain garden captures driveway runoff; house runoff directed to Wetland P near Mooney Lake.
    - Lot 6 Block 1: Rain garden captures portion of existing house; proposed house and existing/proposed driveway runoff directed to woods and Mooney Lake
    - Lot 7 Block 1: Rain garden does not capture proposed impervious; all runoff directed to woods and Mooney Lake.
    - Lot 8 Block 1: Rain garden captures portion of house runoff; remaining runoff directed to woods.
    - Lot 1 Block 2: Rain garden captures portion of driveway runoff, remaining runoff directed to Wetland 6
    - Lot 2 Block 2: Rain garden captures majority of house and driveway runoff, but a portion will still be directed to wetland 6
    - Lot 3 Block 3: Rain garden captures majority of runoff from the house and driveway, but a significant portion is directed to the SW Wetland which drains to Wetland 6.
- Runoff discharge ratios will not be met at a number of key locations generating erosion, sediments and pollutants being discharged into Mooney Lake.

- Mooney Lake (117 acres) is the primary receiving water within the watershed and receives drainage from two sub-watersheds, LLC-20 and LLC-21. Mooney Lake is a naturally closed basin with no overland outlet. Mooney Lake is pumped out when certain agreed-upon conditions occur. Storm water volume from upstream development in Plymouth results in periodic flooding. The MCWD has developed and implemented a cooperative emergency pump-out plan with the City of Plymouth. Increase runoff volumes due to this development will exacerbate flooding potential in the already flood-prone Mooney Lake.
- The runoff volume control facilities proposed in the design are also under-sized due to a misunderstanding of the hydrology of this unique big woods area. Existing condition assumptions for stormwater runoff overestimate the current runoff rate of flow and volume by not taking into consideration the capacity of the big woods to reduce runoff. This over-estimation translates in less runoff being mitigated and higher runoff volumes and rates being discharged into the big woods, wetlands and into Mooney Lake Hydrologic factors not considered in the design include:
    - Big Woods canopy interception and understory absorption of rainfall produces significantly less runoff than conventional woods.
    - Proposed volume controls do not protect for impact of increased volume for the majority of storm events. Furthermore, the Midwest Region has shown an increase of 45% in very heavy precipitation events, defined as the heaviest 1% of all daily events, indicating that events greater than the 10-year event will likely occur more frequently due to climate change.
- As a result of increased runoff volumes, there will be a substantial increase in the amount of phosphorus, metals, and sediments being discharged to the big woods, wetland and Mooney Lake, but there are other reasons why the impact of phosphorus, metals and solids has been underestimated in the design.
    - The assumptions used to estimate pollutant discharge is erroneous and results in severely under estimation of the amount of runoff pollution. The Minnehaha Creek Watershed District Water Resource Permit Application use values that are contradictory to values found in literature. For example, in the equation below, the MPCA recommends using a runoff coefficient "RV" between (0.3 - 0.5) for single family residential areas rather than 0.1015 which is used in this calculation. Runoff coefficients for forests/open space with hydrologic soil group B should be around 0.03 rather than the 0.0640 used in pollutant load calculations.
    - Furthermore, the total phosphorus concentration "C" used to calculate the pre development load is 0.30; a total phosphorus concentration of 0.30 mg/l is typical of phosphorus concentrations found in residential runoff. The existing pre development conditions would not be considered to be residential. Rather, this is a high quality site, therefore, existing phosphorus concentrations should be 0.04 mg/l for a site dominated by forests/grasslands (see table on next page by the MCWD).

Land cover/land use	Total phosphorus (mg/L)
Cropland[1]	0.32
Forest/shrub/grassland1[1]	0.04
Open water[1]	0.01
Wetlands[1]	0.01 to 0.04[3]
Freeways[2]	0.25
Commercial[1,2]	0.22
Farmsteads[1]	0.46
Industrial[1,2]	0.26
Residential[2]	0.30
Multi-family residential[1,2]	0.27 to 0.32
Parks and recreation[1]	0.04
Open space[1,2]	0.31
Public/semi public (institutional)[1,2]	0.18

[1] Minnehaha Creek Watershed district, 2003
[2] Robert Pitt et al., 2004
[3] Average for large wetlands and wetland complexes. Individual wetlands should be monitored to determine source/sink behavior.

  - Finally, vegetation buffers around Mooney Lake are being considered as an element to clean the phosphorus, metals and solids in the runoff. This will produce the deterioration of the quality and functionality of the buffers with the consequent impact in wildlife and lake health.

- The City of Orono has established wetland protection strategies in the Orono Surface Water Management Plan (January 2011). A protection classification has been assigned to each wetland in Orono based on their stormwater susceptibility and functional assessment. The city has also established additional protection requirements for each classification. The four protection classifications are described as follows:

Protection Classification	Susceptibility Rating	Description	Additional Protection Requirements (B = Bounce = Change in water level due to runoff event) (P = Phosphorus)
"Preserve"	Highly Susceptible	Highly susceptible to both quantity and quality impacts from runoff; have the highest degree of protection	B: Maintain bounce at or below existing conditions P: Limit loadings to predevelopment loading (0.14 Lbs/Ac/Yr)
"Manage 1"	Moderately Susceptible	Moderately susceptible to quantity and quality impacts; protection is less stringent than Preserve, provides protection to maintain their characteristics	B: Maintain bounce at or below existing conditions plus 0.5 foot P: Limit loadings to predevelopment loadings times 2 (0.28 Lbs/Ac/Yr)

Protection Classification	Susceptibility Rating	Description	Additional Protection Requirements (B = Bounce = Change in water level due to runoff event) (P = Phosphorus)
"Manage 2"	Slightly Susceptible	Less stringent protection than Manage 1 wetlands; maintenance of characteristics is desirable	B: Maintain bounce at or below existing conditions plus 1.0 foot P: Limit concentration to predevelopment concentrations (200 ppb)
"Manage 3"	Least Susceptible	Wetlands are significantly degraded (e.g., cultivated or canary grass monotype) or lack of wetland characteristics; not typically impacted by runoff; no quantity and only limited quality treatment of runoff is required	B: No quantity requirement P: Limit concentration to 225 ppb

- Wetlands in the Mooney Lake watershed are classified as a Manage 2 and require to maintain water level changes to less than 1 foot under any storm event, and limit concentrations to less than 0.2 mg/l to preserve the current wetland quality and function. Neither analysis has been done as part of this development. There is a very strong probability that these standards will not be met, resulting in wetland deterioration.

Exhibit B

Document #	Date	Title	Type
1	8/24/15	MCWD Water Resource Permit Application Form	Permit
2	8/22/15	Mooney Lake Preserve East Road Drainage Summary	Comparing Existing vs. Proposed Runoff
3	8/23/15	Mooney Lake Preserve West Road Drainage Summary	Comparing Existing vs. Proposed Runoff
4	8/29/15	Mooney Lake Preserve Existing Road Infiltration Area	Infiltration Testing
5	9/3/15	Routing Diagram for Mooney Lake Preserve Existing	Hydrocad
6	9/3/15	Routing Diagram for Mooney Lake Preserve Proposed	Hydrocad
7	9/4/15	Routing Diagram for Mooney Lake Preserve Existing	Hydrocad
8	9/4/15	Routing Diagram for Mooney Lake Preserve Proposed	Hydrocad
9	10/10/15	Mooney Lake Preserve Proposed Rain Gardens Runoff Calculations	Rain Garden Calcs
10	10/10/15	HydroCad model	Block 1 Existing
11	10/10/15	HydroCad model	Block 1 Proposed
12	10/10/15	HydroCad model	Block 2 Existing
13	10/10/15	HydroCad model	Block 2 Proposed
14	10/10/15	HydroCad model	Block 1, lots 5-6 Existing
15	10/10/15	HydroCad model	Block 1, lots 5-6 Proposed
16	9/15/15	Rain Garden Areas and Soil Boring	Soil Boring Results
17	10/12/15	HydroCad model	East Road drainage
18	10/12/15	HydroCad model	East Road
19	10/12/15	Mooney Lake Preserve East Road Drainage Summary	Comparing Existing vs. Proposed Runoff
20	9/24/15	Mooney Lake Preserve Road Infiltration Areas	Infiltration Testing
21	9/18/15	Rain garden design	Rain garden design
22	10/12/15	Mooney Lake Preserve Road Infiltration Areas	Infiltration Testing
23	8/22/15	Mooney Lake Preserve Prairie View Lane Plan and Profile for East Raod	Plan Profile
24	9/8/15	Mooney Lake Preserve North detail	Plan Profile
25	9/8/15	Mooney Lake Preserve South detail	Plan Profile
26	9/3/15	Mooney Lake Preserve Plan and Profile for West Raod	Plan Profile
27	8/22/15	Mooney Lake Preserve Plan Profile	Plan Profile
28	9/8/15	Mooney Lake Preserve Plan Profile	Plan Profile
29	9/25/15	Mooney Lake Preserve Plan Profile North Detail	Plan Profile

30	9/25/15	Mooney Lake Preserve Plan Profile South Detail	Plan Profile
31	9/2/15	Mooney Lake Preserve Grading and Storm Water Pollution Prevention Plan	SWPP
32	9/25/15	Mooney Lake Preserve Plan Profile West Road	Plan Profile
33	9/25/15	Mooney Lake Preserve Plan Profile East Road	Plan Profile
34	10/12/15	Mooney Lake Preserve Plan Profile East Road	Plan Profile
35	N/A	Mooney Lake Preserve Prairie View Lane Plan and Profile	Plan Profile
36	10/12/15	Mooney Lake Preserve Plan Profile South Detail	Plan Profile
37	N/A	Mooney Lake Preserve Prairie View Lane Plan and Profile	Plan Profile
38	10/12/15	Mooney Lake Preserve Plan Profile East Road	Plan Profile
39	10/12/15	Mooney Lake Preserve Plan Profile East Road	Plan Profile
40	9/3/15	Mooney Lake Preserve Road Infiltration Areas West Road	Infiltration Testing
41	9/3/15	Mooney Lake Preserve Existing Road Infiltration Area West Road	Comparing Existing vs. Proposed Runoff
42	8/27/15	MNRAM Wetland Assessment	MNRAM
43	8/27/15	Wetland 7 Management Classification Report	MNRAM
44	8/27/15	MNRAM Site Response Report	MNRAM
45	1985	Minnesota Hydrology Guide (Department of Ag.)	Technical reference book
46	2014	Minnesota BMP designand stormwater manual	Technical reference book
47	2015	Atlas 14	Technical reference paper
48	2013	MCWD Rules	Reference material, legal document
50	N/A	Orono ordinances	Compliance document
51	7/23/15	Conclusions, Order and Conditions Orono Draft Resolution	Legal document
52	2015	MCWD Water Resource Permit Application Form	Permit form
53	Jan-11	Orono Surface Water Management Plan	Study
54	Mar-14	Upper Minnehaha Creek Watershed Nutrient and Bacteria TMDL	Study

55	2003	MCWD recommended Total Phosforus Export Loads	Technical reference
56	2004	Robert Pitt et al. Total P export coeficients	Technical Paper
57	2015	Geo-reference manual	Technical manual
58	1980 - 2015	Multiple papers, articles, reports and studies related to SW management	Technical documents
Technical/Legal Case Materials			
59	3/16/15	Minutes of the Orono Planning Commission Meeting	Technical/Legal Case Materials
60	6/28/14	Doug Dayton's sanctuary is for sale -- but not to developers	Technical/Legal Case Materials
61	7/13/15	Minutes of the Orono Planning Commission Meeting	Technical/Legal Case Materials
62	7/27/15	Minutes of the Orono Planning Commission Meeting	Technical/Legal Case Materials
63	7/9/15	REQUEST FOR COUNCIL ACTION	Technical/Legal Case Materials
64	7/23/15	REQUEST FOR COUNCIL ACTION	Technical/Legal Case Materials
65	7/27/15	City of Orono Resolution of the City Council	Technical/Legal Case Materials
66	9/14/15	#15-3739 Mooney Lake Preserve - Final Plat Punchlist	Technical/Legal Case Materials
67	6/1/15	Meadowood Property Map	Technical/Legal Case Materials
68	9/30/15	Lawsuit Against Developer of Dayton Property, City of Orono, and MCWD	Technical/Legal Case Materials
69	10/1/15	Orono subdivision of Dayton land could move forward	Technical/Legal Case Materials
70	5/8/15	#15-3739, BPS Properties, 300 Sixth Avenue N - Preliminary Plat	Technical/Legal Case Materials
71	3/16/15	Minutes of the Orono Planning Commission Meeting	Technical/Legal Case Materials
72	5/8/15	Minutes of the Orono Planning Commission Meeting (1)	Technical/Legal Case Materials
73	5/8/15	Minutes of the Orono Planning Commission Meeting (2)	Technical/Legal Case Materials
74	5/8/15	Minutes of the Orono Planning Commission Meeting (3)	Technical/Legal Case Materials
75	6/15/15	Minutes of the Orono Planning Commission Meeting (1)	Technical/Legal Case Materials

76	6/15/15	Minutes of the Orono Planning Commission Meeting (2)	Technical/Legal Case Materials
77	6/15/15	Minutes of the Orono Planning Commission Meeting (3)	Technical/Legal Case Materials
78	5/14/15	#15-3720, o/b/o Wendy Dayton, 300 Sixth Avenue N - Preliminary Plat (1)	Technical/Legal Case Materials
79	5/14/15	#15-3720, o/b/o Wendy Dayton, 300 Sixth Avenue N - Preliminary Plat (2)	Technical/Legal Case Materials
80	6/10/15	#15-3739, 300 Sixth Avenue N - Preliminary Plat Second Review (1)	Technical/Legal Case Materials
81	6/10/15	#15-3739, 300 Sixth Avenue N - Preliminary Plat Second Review (2)	Technical/Legal Case Materials
81	7/27/15	City of Orono Resolution of the City Council	Technical/Legal Case Materials
82	3/11/15	#15-3720, BPS Properties, 300 Sixth Avenue N - Sketch Plan Review	Technical/Legal Case Materials
83	3/11/15	Exhibit 1 3-11-2015 David Thill Letter to City of Orono	Technical/Legal Case Materials