

Project Name | BCWD Permit 24-07, Elliott Crossing

Date | November 7, 2024

To / Contact info | BCWD Board of Managers

Cc / Contact info | Mark Guenther / MOR Development, LLC; Justin Olson, PE / Carlson McCain

Cc / Contact info | Karen Kill, Administrator / BCWD

From / Contact info | Paul Nation, PE / EOR

Regarding | Permit Application No. 24-07 Engineer's Report

The following review of the above mentioned project located within the legal jurisdiction of the Brown's Creek Watershed District (BCWD) was conducted to determine compliance with the BCWD rules for purposes of the engineer's recommendation to the Board of Managers for its determination of the permit application.

Applicant: MOR Development, LLC

Permit Submittal Date: *October 21st, 2024*

Completeness Determination: *October 24th, 2024*

Board Action Required By: *December 20th, 2024*

Review based on BCWD Rules effective April 1, 2020

Recommendation: Approve with Conditions

GENERAL COMMENTS

Existing Conditions: The existing site is 188.65 acres and includes 4.56 acres of impervious surface. It is located south of 75th St N and west of Lake Elmo Ave. Although the site is entirely within the BCWD legal boundary, it is at the drainage divide between BCWD and Valley Branch Watershed District with the majority of the site draining to BCWD.

The west half of the site includes agricultural land, woods, and numerous wetlands. The central portion of the site includes two golf course holes for the Indian Hills Golf Course. The east half of the site is mostly agricultural land with pockets of woods. Of particular note, multiple wetlands on site are groundwater-dependent natural resources including a fen. BCWD developed a groundwater-dependent natural resource management plan for the fen in 2009. This plan includes a detailed description of the resource, characterizes the management area, identifies potential impacts of development to the resource and recommended management strategies. In keeping with its fen-management plan, BCWD has conducted maintenance activities including management of invasive species such as buckthorn, Canada thistle, reed canary grass and raspberry since 2010. Over the last 13 years of maintenance the BCWD has seen a dramatic decrease in invasive species and a significant increase in the presence of native species. There is also a mapped natural community adjacent to one onsite wetland (designated Wetland E). This mapped community consists primarily of 25 to 30-year old red pines, but includes a variety of other tree species. Onsite wetlands are shown in Figure 1 and site discharge points are shown in Figure 2.

BCWD's goal for groundwater-dependent natural resources is to ensure that they function at or near maximum potential and that they are not significantly compromised due to human-induced factors.

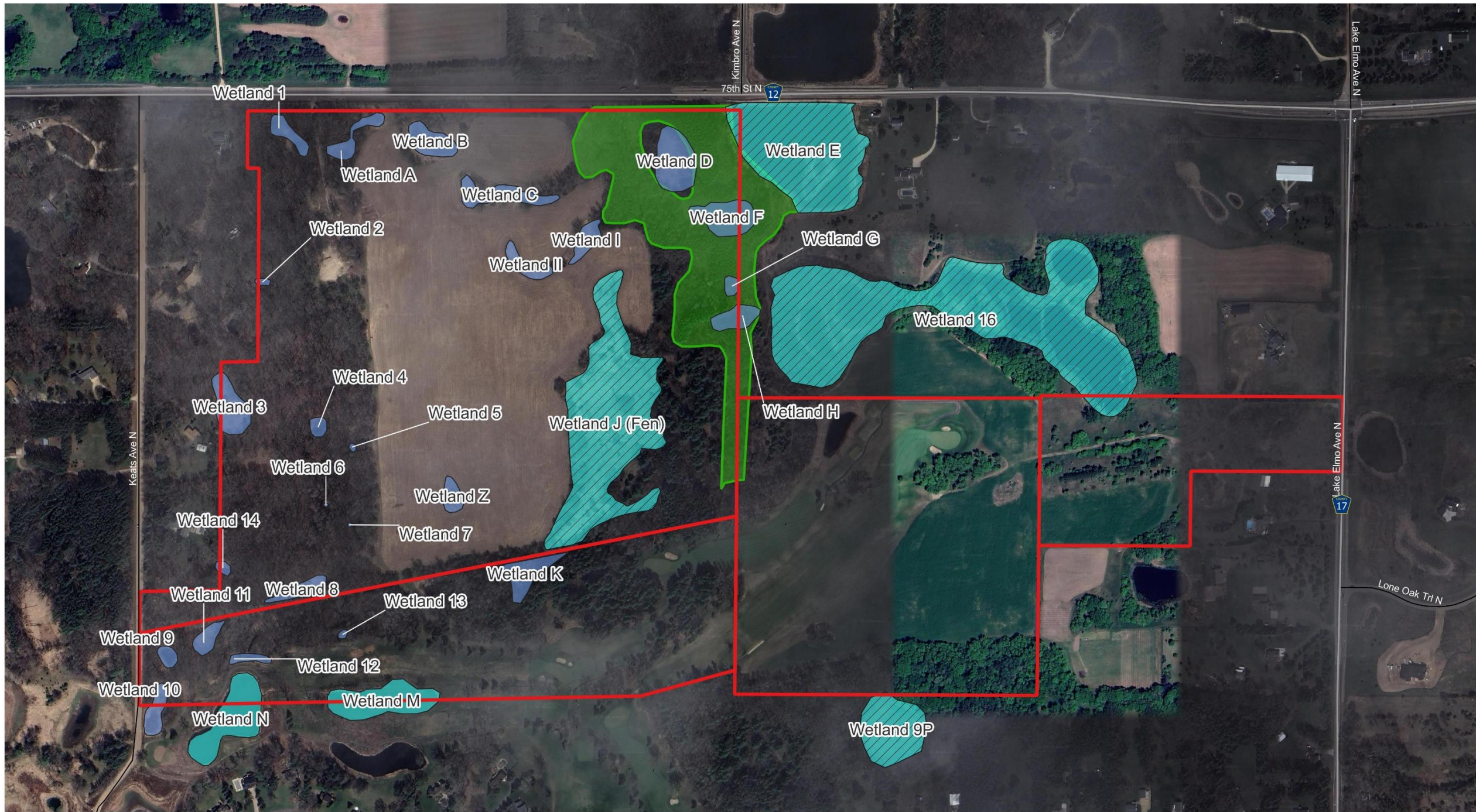
Groundwater-dependent natural resources are very sensitive to changes in the quantity and quality of both groundwater and surface water contributions. For those resources in a natural or semi-natural state, the goal is to maintain the existing (pre-development) groundwater and surface water hydrology and quality to the resources.

Proposed Conditions: Under proposed conditions, the site will have 11.3 acres of impervious surface with a total land disturbance of 45.4 acres. The west half of the site (1st addition) will have a cul-de-sac (Keswick Court) off 75th St N and will be split into 12 lots. A grass trail will be added connecting this street to the existing golf course trail system. Turn lanes will be added on 75th St N to facilitate traffic into the development. Stormwater management for this half of the site is provided by two ponds that will serve as re-use basins for irrigation of the site entrance and buffer areas. To protect the fen, a berm will be constructed on the upstream side of the buffer, which will route all stormwater from the development around the fen. The two golf course holes will remain in the middle of the site.

The east half of the site will have a cul-de-sac (Elliott Lane) off Lake Elmo Ave and will be split into five lots. Stormwater management for this half of the site is provided by two infiltration basins. These 5 lots will be developed as a 2nd addition and will be graded on a separate timeline from the west half of the site. However, the developer is requesting that this stormwater permit cover both additions with a permit term of three years. Because there will be an interim period between construction of the 1st addition and the 2nd addition, the analysis under Rule 2.0 is provided to demonstrate that the site will meet stormwater standards during the interim. Full buildout conditions are shown on Figure 3.

Recommendation: The BCWD engineer recommends that the board approve the application in accordance with and on terms specified in the report that follows.

Figure 1 – Onsite Wetlands



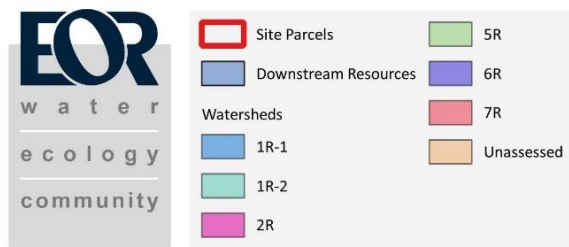
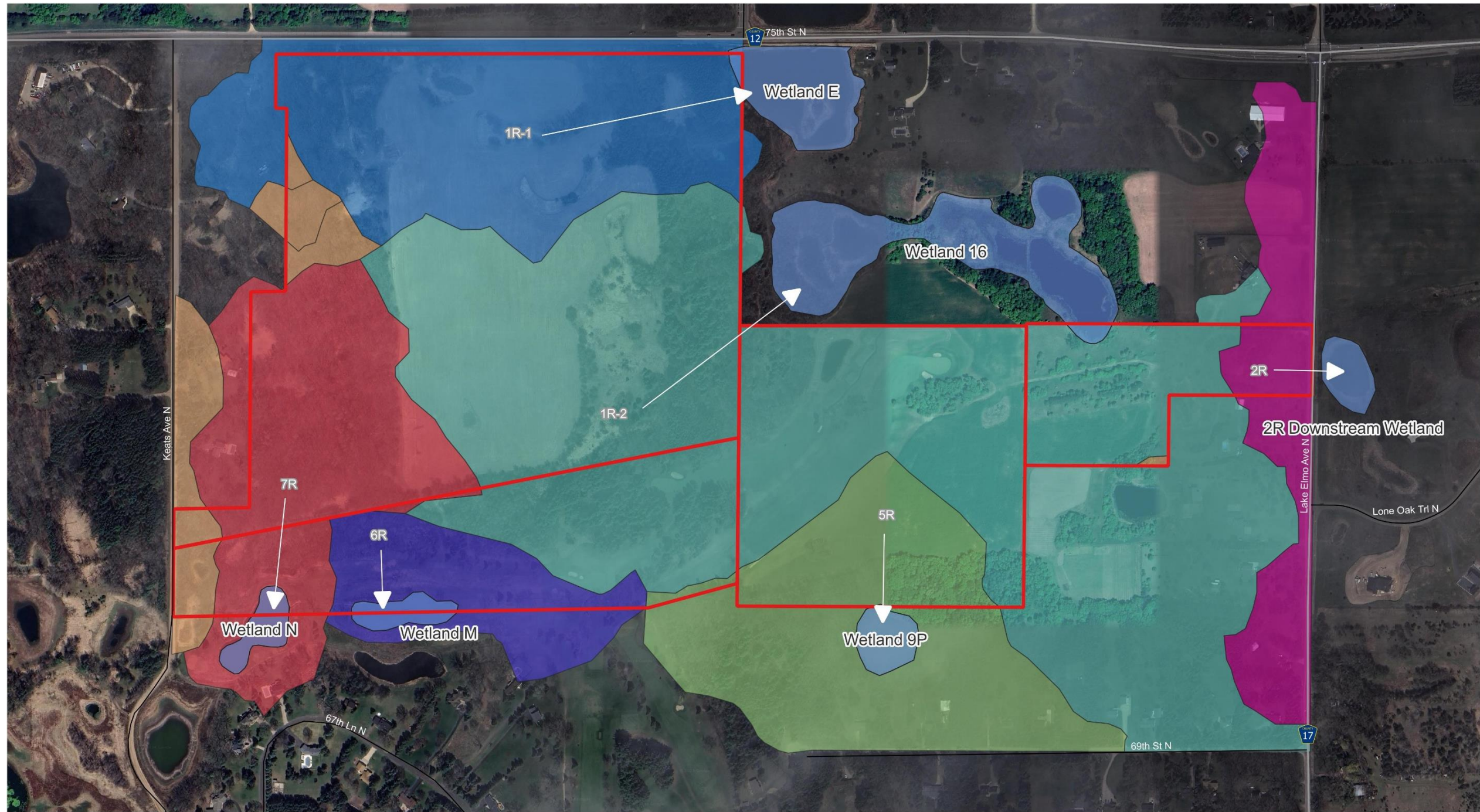
-  Site Parcels
-  Mapped Natural Community
-  Wetlands requiring buffers
-  Wetlands not requiring buffers
-  Groundwater-dependent wetlands

Permit 24-07
Elliott Crossing

Wetlands



Figure 2 – Site Discharge Points



Permit 24-07
Elliott Crossing
Site Discharge Points



Figure 3 - Site Plan

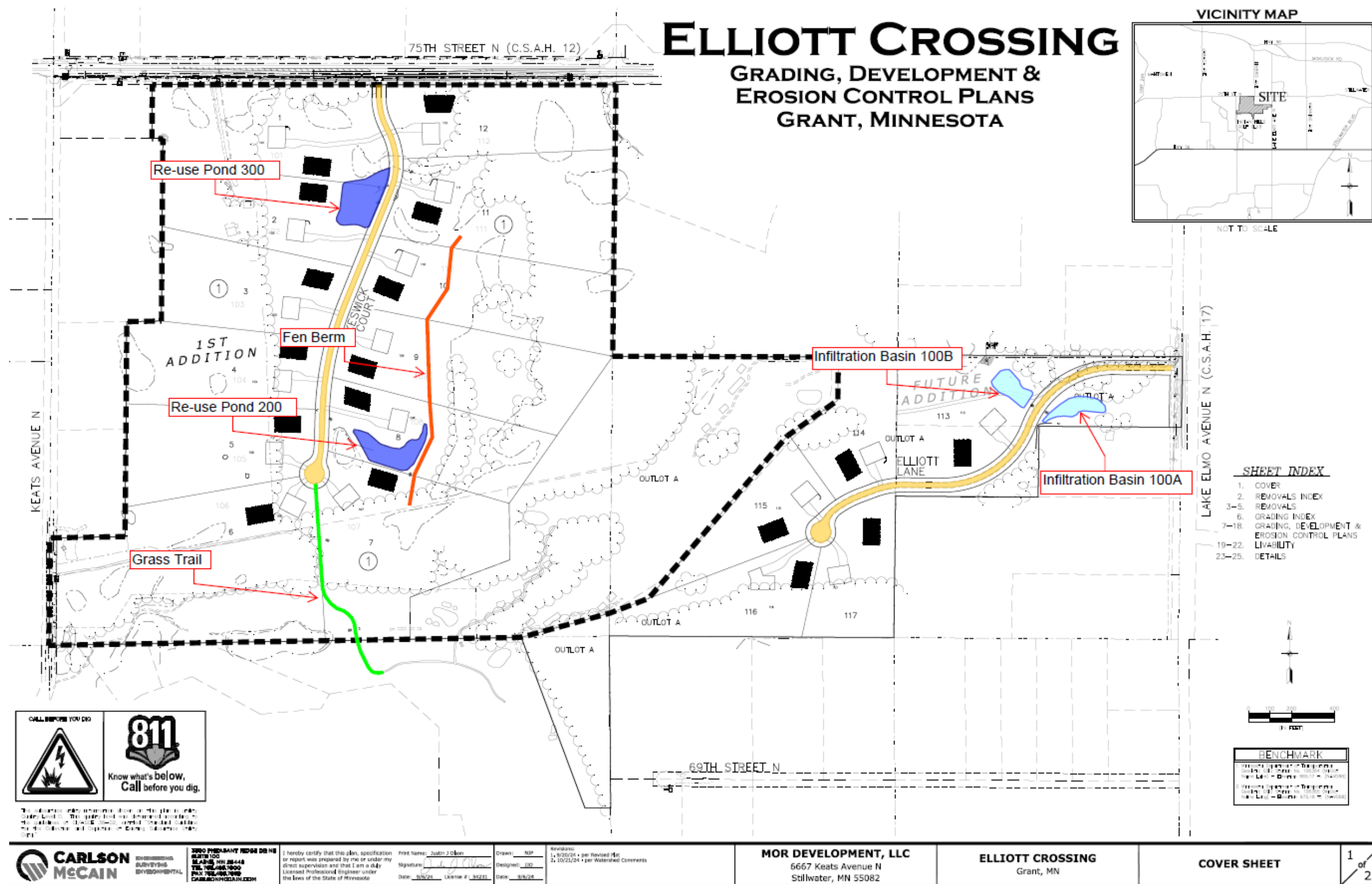


Figure 4 - Irrigation Area (Pond 300)

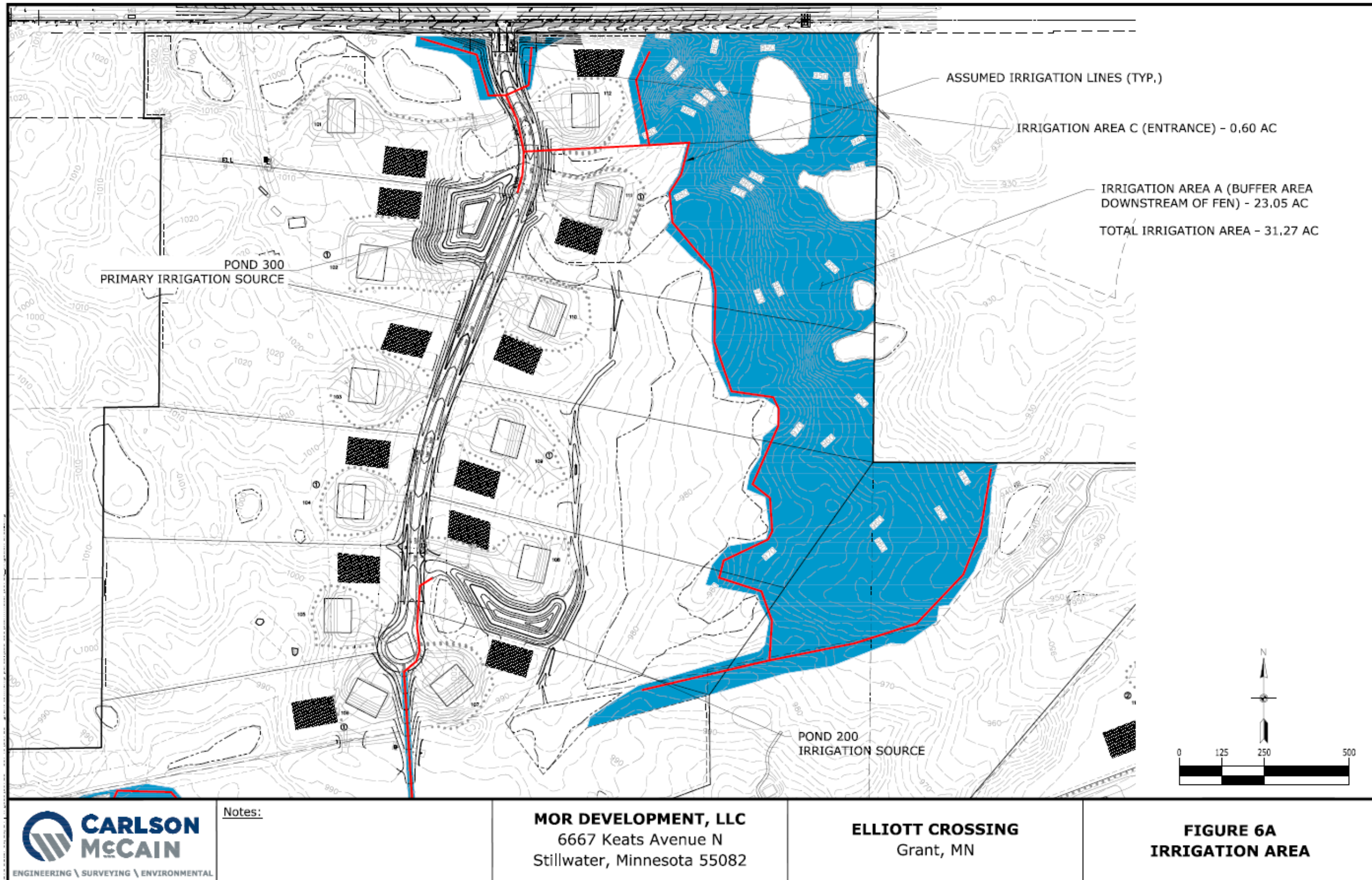
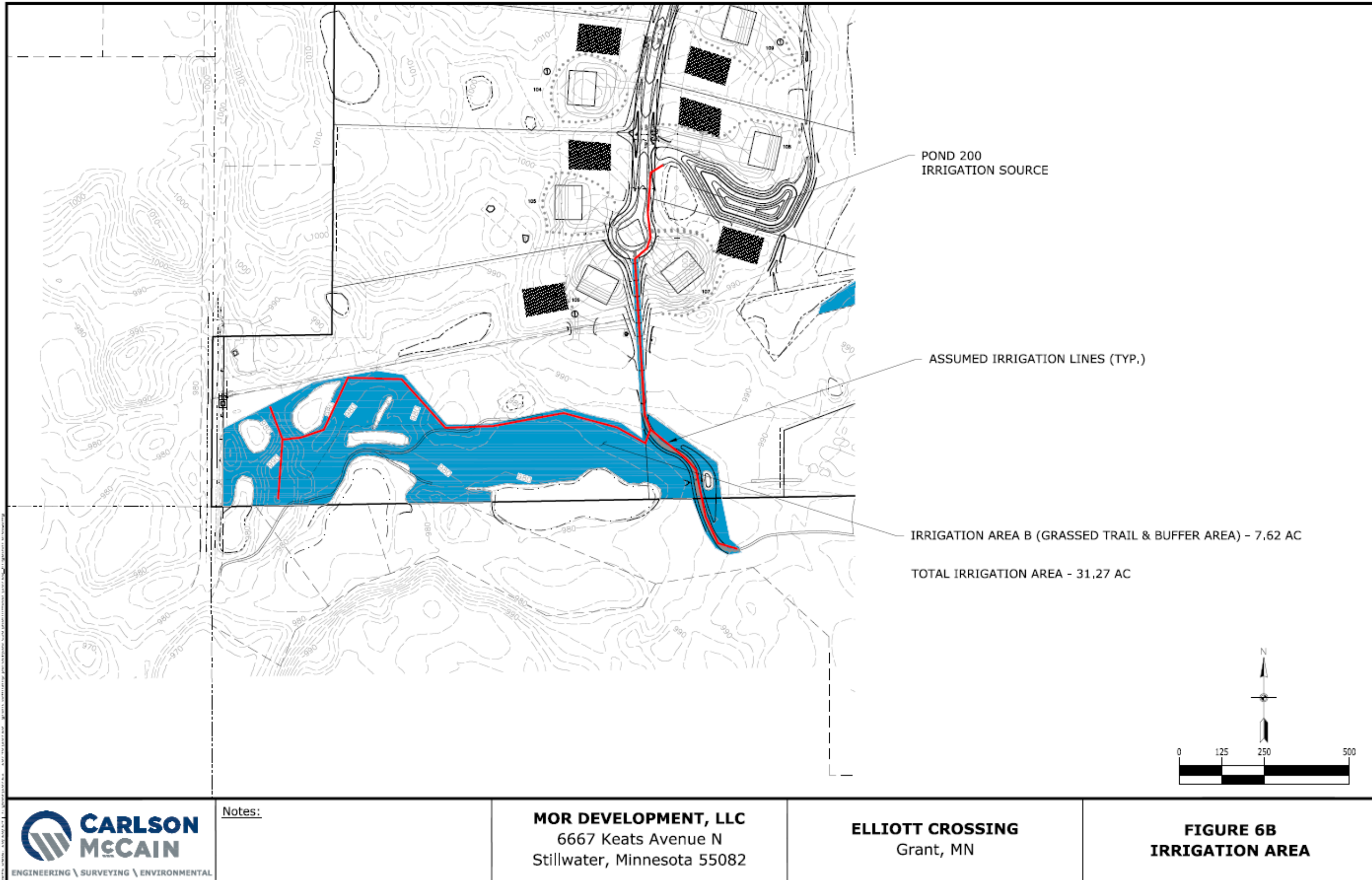


Figure 5 - Irrigation Area (Pond 200)



Rule 2.0—STORMWATER MANAGEMENT

Under 2.2(b) of the rule, the proposed project triggers the application of Rule 2.0 Stormwater Management because the site development will result in 11.3 acres of impervious surface, exceeding the 6,000 square foot threshold for sites within the surface water contributing area of a groundwater-dependent natural resource. Since the proposed activity will disturb more than 50 percent of existing impervious surface (1.0 acres to remain out of 4.6), the stormwater management standards will apply to all impervious surface and disturbed areas on the project site. The site is not within the Diversion Structure Subwatershed, so the stormwater criteria in subsection 2.4.1(a) apply.

The stormwater management plan was designed to treat the maximum amount of impervious surface (including houses, sheds, driveways, pools, etc) for each lot, outlined in Table 1. When homes are constructed on individual lots, they must comply with this maximum impervious amount to be consistent with the design of the development. This impervious does not include the streets built to service the lots, which are included in the stormwater management plan. Additionally, grading of individual lots must be consistent with the development grading plan such that the drainage areas to individual wetlands does not change.

Table 1 – Allowable Impervious per Lot

<i>Lot Number</i>	<i>Allowable Impervious (ac)</i>
Block 1, Lot 1	0.43
Block 1, Lot 2	0.34
Block 1, Lot 3	0.29
Block 1, Lot 4	0.35
Block 1, Lot 5	0.34
Block 1, Lot 6	0.32
Block 1, Lot 7	0.32
Block 1, Lot 8	0.44
Block 1, Lot 9	0.47
Block 1, Lot 10	0.27
Block 1, Lot 11	0.30
Block 1, Lot 12	0.27
Block 2, Lot 1	0.34
Block 2, Lot 2	0.35
Block 2, Lot 3	0.34
Block 2, Lot 4	0.52
Block 2, Lot 5	0.34

The stormwater management plan for the project includes the following:

1st Addition

- *Re-use Pond 300*
- *Re-use Pond 200*

The two re-use ponds will provide stored stormwater to be used to irrigate a small, landscaped area at the site entrance along with the wetland buffers. Irrigation areas are shown in Figure 4 and Figure 5. Re-use Pond 300 will irrigate the buffer downstream (east) of the fen while Re-use Pond 200 will irrigate the buffers on the south side of the site around Wetlands M and N. The re-use ponds will be pumped down using an automated system. At an irrigation rate of 0.06 inches/hour (consistent with HSG D soils found in this portion of the site), both ponds can be drained within 48 hours to allow capacity for future storm events and for volume control analysis these ponds were assumed to start empty. The ponds are proposed to be drained at a lower rate to avoid saturation of the soil and runoff from irrigation. This would take longer than 48 hours to drain the ponds from full, depending on the pumping rate. This pumping rate is needed to confirm that the ponds will empty quickly enough to regain storage capacity between storms, such that the assumption of the ponds starting empty for volume control analysis is correct. Therefore, additional detail on the irrigation system is needed and will be required as a condition of permit approval. Specifically, the following must be provided:

- *Proposed pumping rate(s)*
- *Duration of time required to fully drain ponds*
- *Pond water levels that trigger pump operation*
- *Irrigation head velocity*

2nd Addition

- *Infiltration Basin #100A*
- *Infiltration Basin #100B*

Under current conditions, runoff leaves the site at the following discharge points:

- *1R-1 – Discharge to Wetland E, which straddles the site boundary. This drainage area increases from 45.6 acres in existing conditions to 53.8 acres in proposed conditions. It includes the 75th St N turn lanes, a portion of Keswick Court, six proposed single-family home lots, and Re-use Pond 300.*
- *1R-2 – Discharge to Wetland 16, which straddles the site boundary. This drainage area increases from 131.0 acres in existing conditions to 147.5 acres in proposed conditions. It includes the remainder of Keswick Court, Re-use Pond 200, the fen, a portion of the existing golf course holes, Elliott Lane, 10 proposed single-family home lots, Infiltration Basin #100A, and Infiltration Basin #100B.*
- *2R – Discharge east through culvert under Lake Elmo Avenue. This drainage area decreases from 18.0 acres in existing conditions to 0.0 acres in proposed conditions. It includes a small portion of Elliott Lane and offsite drainage from the north and south along the Lake Elmo Ave ditch. This drainage area is instead rerouted through Infiltration Basins #100A and #100B to discharge point 1R-2, with the culvert under Lake Elmo Avenue serving as a secondary overflow.*

- *4R – Discharge west to Wetland 2, which straddles the site boundary. No disturbance is proposed to this drainage area. The vegetation in this drainage area is consistent with pre-settlement conditions (woods). Therefore, no further analysis of this discharge point is needed.*
- *Unnamed – Discharge south to offsite Wetland 12P. No disturbance is proposed to this drainage area. The vegetation in this drainage area is consistent with pre-settlement conditions (grassland/woods mix). Therefore, no further analysis of this discharge point is needed.*
- *Unnamed [5R] – Discharge south to offsite Wetland 9P. This drainage area decreases from 38.9 acres in existing conditions to 35.9 acres in proposed conditions. It includes two proposed single-family home lots. For purposes of this report, this discharge point will be named 5R.*
- *Unnamed [6R] – Discharge south to Wetland M, which straddles the site boundary. This drainage area does not change from existing to proposed conditions. It includes a portion of the proposed trail and a portion of the existing golf course holes. For purposes of this report, this discharge point will be named 6R.*
- *Unnamed [7R] – Discharge south to Wetland N, which straddles the site boundary. This drainage area decreases from 36.2 acres in existing conditions to 32.4 acres in proposed conditions. It includes yard space from three proposed single-family home lots and a portion of the existing golf course holes. For purposes of this report, this discharge point will be named 7R.*
- *Unnamed – Discharge south to Wetland 10, which straddles the site boundary. No disturbance is proposed to this drainage area. The vegetation in this drainage area is consistent with pre-settlement conditions (woods). Therefore, no further analysis of this discharge point is needed.*
- *Unnamed – Discharge west to unnamed offsite depression. No disturbance is proposed to this drainage area. The vegetation in this drainage area is consistent with pre-settlement conditions (woods). Therefore, no further analysis of this discharge point is needed.*
- *Unnamed – Discharge west to offsite depression 32P. No disturbance is proposed to this drainage area. The vegetation in this drainage area is consistent with pre-settlement conditions (woods). Therefore, no further analysis of this discharge point is needed.*

Rate Control

According to BCWD Rule 2.4.1(a)(i), an applicant for a stormwater management permit must demonstrate to the District that the proposed land-altering activity will not increase peak stormwater flow from the site, as compared with the pre-settlement condition, for a 24-hour precipitation event with a return frequency of two, 10 or 100 years for all points where discharges leave a site.

Rule Requirement Met

The stormwater management plan developed for the site was evaluated using a HydroCAD model of pre-settlement and post-development site conditions. A comparison of the modeled peak flow rate is included in Table 2 - Table 5 for the 1st addition only. Disturbance from the 1st addition is routed to discharge points 1R-1, 1R-2, 6R, and 7R.

Table 2 – Peak Discharge Rate – 1R-1

<i>Event</i>	<i>Pre-settlement Runoff Rate (cfs)</i>	<i>Proposed Runoff Rate (cfs)</i>
2-year (2.80")	15.1	11.6
10-year (4.16")	35.4	31.1
100-year (7.21")	106.7	94.9

Table 3 – Peak Discharge Rate – 1R-2

<i>Event</i>	<i>Pre-settlement Runoff Rate (cfs)</i>	<i>Proposed Runoff Rate (cfs)</i>
2-year (2.80")	20.2	17.4
10-year (4.16")	49.7	39.5
100-year (7.21")	126.9	111.6

Table 4 – Peak Discharge Rate – 6R

<i>Event</i>	<i>Pre-settlement Runoff Rate (cfs)</i>	<i>Proposed Runoff Rate (cfs)</i>
2-year (2.80")	13.7	9.9
10-year (4.16")	27.2	19.9
100-year (7.21")	56.2	37.7

Table 5 – Peak Discharge Rate – 7R

<i>Event</i>	<i>Pre-settlement Runoff Rate (cfs)</i>	<i>Proposed Runoff Rate (cfs)</i>
2-year (2.80")	23.6	21.1
10-year (4.16")	53.7	45.9
100-year (7.21")	117.1	101.8

A comparison of the modeled peak flow rate is included in Table 6 - Table 11 for the full build out. Runoff to discharge points 1R-1, 6R, and 7R do not change from the 1st addition.

Table 6 – Peak Discharge Rate – 1R-1

<i>Event</i>	<i>Pre-settlement Runoff Rate (cfs)</i>	<i>Proposed Runoff Rate (cfs)</i>
2-year (2.80")	15.1	11.6
10-year (4.16")	35.4	31.1
100-year (7.21")	106.7	94.9

Table 7 – Peak Discharge Rate – 1R-2

<i>Event</i>	<i>Pre-settlement Runoff Rate (cfs)</i>	<i>Proposed Runoff Rate (cfs)</i>
2-year (2.80")	20.2	17.0
10-year (4.16")	49.7	38.6
100-year (7.21")	126.9	110.8

Table 8 – Peak Discharge Rate – 2R

<i>Event</i>	<i>Pre-settlement Runoff Rate (cfs)</i>	<i>Proposed Runoff Rate (cfs)</i>
2-year (2.80")	5.2	0.0
10-year (4.16")	9.1	2.6
100-year (7.21")	23.3	14.1

Table 9 – Peak Discharge Rate – 5R

<i>Event</i>	<i>Pre-settlement Runoff Rate (cfs)</i>	<i>Proposed Runoff Rate (cfs)</i>
2-year (2.80")	3.1	3.1
10-year (4.16")	6.2	6.2
100-year (7.21")	15.5	15.5

Table 10 – Peak Discharge Rate – 6R

<i>Event</i>	<i>Pre-settlement Runoff Rate (cfs)</i>	<i>Proposed Runoff Rate (cfs)</i>
2-year (2.80")	13.7	9.9
10-year (4.16")	27.2	19.9
100-year (7.21")	56.2	37.7

Table 11 – Peak Discharge Rate – 7R

<i>Event</i>	<i>Pre-settlement Runoff Rate (cfs)</i>	<i>Proposed Runoff Rate (cfs)</i>
2-year (2.80")	23.6	21.1
10-year (4.16")	53.7	45.9
100-year (7.21")	117.1	101.8

Volume Control

According to BCWD Rule 2.4.1(a)(ii), an applicant for a stormwater management permit must demonstrate to the District that the proposed land-altering activity will not increase stormwater flow volume from all points where discharge leaves the site, as compared with the pre-settlement condition, for a 24-hour precipitation event with a return frequency of two years, or five years within a landlocked basin or a subwatershed draining to a landlocked basin.

Rule Requirement Met

The stormwater management plan developed for the site was evaluated using a HydroCAD model of pre-settlement and post-development site conditions. A comparison of the modeled runoff volume is included in Table 12 and Table 13 for the 1st addition and full buildout, respectively. All discharge points are landlocked, so volumes are compared for the 5-year, 24-hour storm event.

Table 12 – Discharge Volumes – 1st Addition

<i>Discharge Point</i>	<i>Pre-settlement Runoff Volume (acre-ft)</i>	<i>Proposed Runoff Volume (acre-ft)</i>
1R-1	3.40	3.29
1R-2	5.77	4.53
2R	0.68	0.68
5R	0.64	0.64
6R	2.20	2.15
7R	4.24	3.77

Table 13 – Discharge Volumes – Full Buildout

<i>Discharge Point</i>	<i>Pre-settlement Runoff Volume (acre-ft)</i>	<i>Proposed Runoff Volume (acre-ft)</i>
1R-1	3.40	3.29
1R-2	5.77	4.64
2R	0.68	0.01
5R	0.64	0.64
6R	2.20	2.15
7R	4.24	3.77

Pollutant Loading

According to BCWD Rule 2.4.1(a)(iii), an applicant for a stormwater management permit must demonstrate to the District that the proposed land-altering activity will not at the downgradient property boundary or to an onsite receiving waterbody or wetland, increase annual phosphorus loading as compared with the pre-development condition.

Rule Requirement Met

The Permit Applicant submitted P8 modeling demonstrating compliance with Rule 2.4.1(a)(iii). The pollutant loading requirement is met for all wetlands and discharge points as demonstrated by the results in Table 14.

The only wetland where loading changes from the 1st addition to full buildout is Wetland 16. For all other wetlands, any drainage areas disturbance will occur either during the 1st addition or the 2nd addition, but not both. Therefore, except for Wetland 16, the 1st addition loading and the full buildout loading are the same and are referred to as “proposed” loading in Table 14.

For Wetland 16, all upstream wetlands have reduced loading during the 1st addition and the direct drainage area does not change size or land cover. Therefore, Wetland 16 will have a reduced loading for the 1st addition without having to explicitly model this loading.

Table 14 –Phosphorus Loading

<i>Wetland / Discharge Point</i>	<i>Pre-Development Loading (lbs/yr)</i>	<i>Proposed Loading (lbs/yr)</i>
A	5.1	3.0
B	1.9	1.5
C	2.2	0.9
D	8.2	5.3
E (1R-1)	31.2	20.1
F	8.2	5.0
G	No disturbance to land cover + smaller drainage area	
H	No disturbance to land cover + smaller drainage area	
I	3.3	2.1
II	1.0	0.4
J (Fen)	Improvement to land cover (from agricultural field to native buffer) + reduction in drainage area from pre-development	
K	3.1	2.5

<i>Wetland / Discharge Point</i>	<i>Pre-Development Loading (lbs/yr)</i>	<i>Proposed Loading (lbs/yr)</i>
M (6R)	6.5	5.7
N (7R)	14.5	12.9
Z	1.3	0.9
1	2.2	2.1
2	0.5	0.5
3	1.2	1.2
4	1.5	1.5
5	0.6	0.2
6	Improvement to land cover (from agricultural field to yard) + no change in loading from upstream Wetland 4	
7	0.4	0.2
8	5.6	4.5
9	No disturbance from pre-development to proposed conditions	
10	No disturbance from pre-development to proposed conditions	
11	No disturbance from pre-development to proposed conditions	
12	No disturbance to immediate drainage area + reduction in loading from upstream Wetland 8	
13	No disturbance from pre-development to proposed conditions	
14	No disturbance from pre-development to proposed conditions	
16 (1R-2)	4.7	2.6
9P (5R)	3.6	3.6
2R	3.3	0

Lake/Wetland Bounce

According to BCWD Rule 2.4.1(a)(iv), an applicant for a stormwater management permit must demonstrate to the District that the proposed land-altering activity will not increase the bounce in water level or duration of inundation, for a 24-hour precipitation event with a return frequency of two, 10 or 100 years in the subwatershed in which the site is located, for any downstream lake or wetland beyond the limit specified in Appendix 2.1.

Rule Requirement Met

As mentioned previously, this site discharges to multiple wetlands. A HydroCAD model was provided to demonstrate compliance with Rule 2.4.1(a)(iv). The hydroCAD model was updated to include offsite areas from the BCWD H&H model to accurately assess Wetlands E and 16, and offsite areas from the permit 17-01 hydroCAD model to accurately assess the wetland downstream of discharge point 2R. Table 15 indicates that the wetland bounce requirements are met.

As noted above for pollutant loading, only Wetland 16 has upstream disturbance for both the 1st addition and the full buildout. For the 1st addition interim condition, the runoff volume to Wetland 16 decreases from pre-development conditions for the 2, 10, and 100-year storm events. Therefore, wetland bounce requirements are met for Wetland 16 for the 1st addition. Bounce for all wetlands (including Wetland 16) under full buildout are discussed below.

Individual wetlands are listed below if there is an increase in HWL for any storm event. HWLs for all other wetlands decrease or remain the same as pre-development conditions.

- *Wetland A has increases up to 0.89 feet for all three storm events which is within the allowable 1-foot increase for Manage 2 wetlands.*
- *Wetland K has a 0.01-foot increase in 2-year HWL which is within the allowable 1-foot increase for Manage 2 wetlands.*
- *Wetland M has a 0.03-foot increase in 100-year HWL which is within the allowable 0.5-foot increase for Manage 1 wetlands.*

Table 15 – Downstream Wetland High-Water Levels (ft)

Waterbody	Management Category	2-year		10-year		100-year	
		Pre-development	Proposed	Pre-development	Proposed	Pre-development	Proposed
A	Manage 2	997.95	998.74	998.14	999.03	998.48	999.32
B	Manage 1	996.49	996.14	996.64	996.55	997.07	996.95
D	Manage 1	943.47	943.29	943.77	943.56	944.22	943.95
E	Manage 1	Runoff volume decreases from pre-development conditions, resulting in lower high-water levels					
F	Manage 1	937.09	937.04	937.50	937.28	938.18	937.93
G	Unknown	No disturbance to land cover + smaller drainage area					
H	Unknown	No disturbance to land cover + smaller drainage area					

Waterbody	Management Category	2-year		10-year		100-year	
		Pre-development	Proposed	Pre-development	Proposed	Pre-development	Proposed
K	Manage 2	983.25	983.26	983.56	983.51	984.00	983.86
M	Manage 1	978.43	978.38	979.40	979.36	980.63	980.66
N	Manage 1	976.59	976.36	977.95	977.62	979.29	979.24
Z	Manage 2	999.07	998.87	999.21	999.03	999.42	999.22
1	Unknown	No disturbance from pre-development to proposed conditions					
2	Unknown	No disturbance from pre-development to proposed conditions					
3	Unknown	No disturbance from pre-development to proposed conditions					
4	Manage 1	1,001.14	1,001.13	1,001.30	1,001.27	1,001.51	1,001.47
5	Manage 1	1,004.09	1,003.50	1,004.28	1,004.01	1,004.47	1,004.10
7	Manage 1	993.14	993.06	993.21	993.10	993.30	993.15
8	Manage 1	983.18	983.10	983.49	983.37	983.94	983.78
9	Unknown	No disturbance from pre-development to proposed conditions					
10	Unknown	No disturbance from pre-development to proposed conditions					
11	Unknown	No disturbance from pre-development to proposed conditions					
12	Unknown	No disturbance to immediate drainage area + reduction in runoff volume from upstream Wetland 8					
13	Unknown	No disturbance from pre-development to proposed conditions					
14	Unknown	No disturbance from pre-development to proposed conditions					
16	Preserve	Runoff volume decreases from pre-development conditions, resulting in lower high-water levels					
9P	Manage 1	929.18	929.18	930.09	930.09	932.02	931.61
2R Downstream Wetland	Manage 3	Runoff volume reduced for all storm events					

Table 16 shows results for duration of inundation. For some wetlands, water levels don't reach the outlet elevation. In these cases, time to peak is measured instead of duration of inundation. For these wetlands, HWLs decrease or remain the same as existing conditions for these storms, so the drawdown from the HWL will be less than or equal to existing conditions. Therefore, as long as the time to peak (rising limb of hydrograph) doesn't increase past the limits specified in Appendix 2.1, the duration of inundation will

also meet the criteria. For landlocked wetlands E and 16, a low rate of infiltration was added to the hydroCAD model to simulate the combination of seepage, evaporation, and transpiration that draws the wetland back down to the starting water level. Wetland 16 inundation was measured for both the 1st addition and full buildout.

Individual wetlands are listed below if there is an increase in the duration of inundation for any storm event. The duration of inundation for all other wetlands decreases or remains the same as existing conditions for all storm events.

- The duration of inundation for Wetland A increases by 1 hour for all storm events which is within the allowable 48 hour increase (2-year storm) and 14-day increase (10, 100-year storms) for Manage 2 wetlands.
- The duration of inundation for Wetland D increases by 43 hours for the 100-year storm which is within the allowable 48 hour increase for Manage 1 wetlands for this storm event.
- The duration of inundation for Wetland F increases by 41 hours for the 100-year storm which is within the allowable 48 hour increase for Manage 1 wetlands for this storm event.
- The duration of inundation for Wetland K increases by up to 28 hours for the 10 and 100-year storm events which is within the allowable 14-day increase for Manage 2 wetlands for this storm event.
- The duration of inundation for Wetland M increases by 1 hour for all storm events which is within the allowable 24 hour increase (2-year storm) and 48 hour increase (10, 100-year storms) for Manage 1 wetlands.
- The duration of inundation for Wetland N increases by 1 hour for the 100-year storm which is within the allowable 48 hour increase for Manage 1 wetlands for this storm event.
- The duration of inundation for Wetland Z increases by 11 hours for the 2-year storm which is within the allowable 48 hour increase for Manage 2 wetlands for this storm event.
- The duration of inundation for Wetland 5 increases by 11 hours for the 2-year storm which is within the allowable 24 hour increase for Manage 1 wetlands for this storm event.

Table 16 – Duration of Inundation (hr)

Waterbody	Management Category	2-year		10-year		100-year	
		Existing	Proposed	Existing	Proposed	Existing	Proposed
A	Manage 2	26	27	26	27	30	31
B	Manage 1	25*	24*	30	30	30	30
D	Manage 1	28	28	28	28	28	71
E	Manage 1	81	71	237	222	669	658
F	Manage 1	32	32	32	32	33	74
G	Unknown	No disturbance to land cover + smaller drainage area					
H	Unknown	No disturbance to land cover + smaller drainage area					
K	Manage 2	26	26	26	46	26	54

Waterbody	Management Category	2-year		10-year		100-year	
		Existing	Proposed	Existing	Proposed	Existing	Proposed
M	Manage 1	25*	26*	25*	27*	37	38
N	Manage 1	25*	25*	25*	25*	48	49
Z	Manage 2	13*	24*	26	25	26	25
1	Unknown	No disturbance from existing to proposed conditions					
2	Unknown	No disturbance from existing to proposed conditions					
3	Unknown	No disturbance from existing to proposed conditions					
4	Manage 1	26	26	26	26	26	26
5	Manage 1	13*	24*	25	24	25	25
7	Manage 1	25	19	25	25	25	25
8	Manage 1	26	26	26	26	27	27
9	Unknown	No disturbance from existing to proposed conditions					
10	Unknown	No disturbance from existing to proposed conditions					
11	Unknown	No disturbance from existing to proposed conditions					
12	Unknown	No disturbance to immediate drainage area + reduction in runoff volume from upstream Wetland 8					
13	Unknown	No disturbance from existing to proposed conditions					
14	Unknown	No disturbance from existing to proposed conditions					
16	Preserve	153	107 / 105 ⁺	320	273 / 283 ⁺	667	629 / 655 ⁺
9P	Manage 1	25*	25*	24*	24*	37*	26*
2R Downstream Wetland	Manage 3	14*	13*	19*	15*	24*	21*

***Time to peak measured when waterbody doesn't reach outlet elevation**

+First number represents 1st addition, second number represents full buildout

Infiltration Pretreatment

According to BCWD Rule 2.5.2, surface flows to infiltration facilities must be pretreated for long-term removal of at least 50 percent of sediment loads.

Rule Requirement Met

The project includes two infiltration basins to meet the stormwater requirements (rate, volume and water quality). Therefore, pretreatment is required for runoff directed to these facilities.

All runoff being routed to infiltration basins will first be directed to grassed filter strips (roadside swales). The Permit Applicant submitted Minimal Impact Design Standards modeling demonstrating compliance with Rule 2.5.2. The pretreatment requirement is met as demonstrated by the results in Table 17.

Table 17 – Infiltration Basin Pretreatment

<i>Practice</i>	<i>TSS Inflow Loading (lb/yr)</i>	<i>TSS Outflow Loading (lb/yr)</i>	<i>TSS Reduction (%)</i>
Infiltration Basin #100A	628	146	77
Infiltration Basin #100B	1,050	238	77

Basins in Contributing Area to Groundwater-Dependent Natural Resources

According to BCWD Rule 2.5.3, a stormwater basin within the surface contributing area to a groundwater-dependent natural resource must contain and infiltrate the volume generated by a two-year, 24-hour storm event, if feasible. The basin bottom must be at least three feet above the seasonally high water table, bedrock or other impeding layer. If this infiltration standard is determined to be infeasible, basin outflow must be non-erosive and routed through a subsurface system, flow spreader or other device that discharges water through or across the ground to lower discharge temperature to that of the ambient soil.

Rule Requirement Met

The two infiltration basins drain to Wetland 16, which is a groundwater-dependent natural resource. Both infiltration basins are at least three feet above the high water table (determined from soil borings within each basin footprint). There is a small amount of runoff from Basin #100A which is not infiltrated for the 2-year storm, but this runoff goes directly into Basin #100B which does infiltrate all volume from the 2-year storm. The two re-use ponds are within the surface contributing area to the fen (i.e. infiltration and shallow groundwater in this area would drain to the fen), but surface overflow from the ponds is routed around the fen.

Rule 2.0 Conditions:

- 2-1. Provide BCWD with the final civil plan set (BCWD 2.7.9).
- 2-2. Provide the following information related to the stormwater irrigation system.
 - Proposed pumping rate(s)
 - Duration of time required to fully drain ponds

- Pond water levels that trigger pump operation
 - Irrigation head velocity
- 2-3. Provide a draft stormwater facility maintenance declaration for BCWD approval, then, after approval, provide proof of recordation with Washington County (BCWD 2.6). A template is available under the permit section of the District's website. The maintenance declaration must include the following:
- Protection of all vegetated areas that must be preserved for irrigation use on the property, and
 - Annual documentation of the volume of water used for irrigation along with the dates during which the irrigation system was active.
- 2-4. Provide documentation as to the status of a National Pollutant Discharge Elimination System stormwater permit for the project from the Minnesota Pollution Control Agency and provide the storm water pollution prevention plan (BCWD 2.7.15).

Rule 3.0—EROSION CONTROL

All persons undertaking any grading, filling, or other land-altering activities which involve movement of more than fifty (50) cubic yards of earth or removal of vegetative cover on five thousand (5,000) square feet or more of land must submit an erosion control plan to the District, and secure a permit from the District approving the erosion control plan. The proposed project triggers the application of Rule 3.0 Erosion Control because it includes 45.4 acres of land disturbance.

Rule Requirements Met with Conditions

The erosion and sediment control plan includes:

- *Rock construction entrances*
- *Erosion control blanketing on roadside ditches*
- *Bioroll ditch checks*
- *Silt fencing downstream of disturbed areas*
- *Redundant silt fencing upstream of wetlands*
- *Temporary sediment basins*
- *Inlet protection on culvert inlets*
- *Riprap at culvert outfalls*
- *Permanent erosion control (seeding) for all disturbed areas*
- *Construction sequencing notes*

To further protect the fen, a berm will be constructed on the upstream end of the 100-foot buffer around the fen. The berm will be stabilized within 5 days using native vegetation and oats cover crop. A swale on the upstream side of the berm will direct any stormwater around the fen. Orange construction fence will be placed between the berm and the buffer to further establish the limits of construction. The draft SWPPP also includes language that no stockpiling of material is allowed within the drainage area to the fen; the language must be retained in the final SWPPP.

The following conditions must be addressed in the erosion and sediment control plan to comply with the District's requirements:

Rule 3.0 Conditions:

- 3-1. Provide the most recent seeding exhibit with any changes from the previously submitted materials highlighted.
- 3-2. Provide the contact information for the erosion and sediment control responsible party during construction once a contractor is selected. Provide the District with contact information for the Erosion Control Supervisor and the construction schedule when available (BCWD 3.3.2).

Rule 4.0—LAKE, STREAM, AND WETLAND BUFFER REQUIREMENTS

According to BCWD Rule 4.2.1, Rule 4.0 applies to land that is (a) adjacent to Brown’s Creek; a tributary of Brown’s Creek designated as a public water pursuant to Minnesota Statutes section 103G.005, subdivision 15; a lake, as defined in these rules; a wetland one acre or larger; or a groundwater-dependent natural resource; and (b) that has been either (i) subdivided or (ii) subject to a new primary use for which a necessary rezoning, conditional use permit, special-use permit or variance has been approved on or after April 9, 2007, (for wetlands and groundwater-dependent natural resources other than public waters) or January 1, 2000 (for other waters).

Rule Requirements Met

Rule 4.0 applies to the site because it is adjacent to multiple wetlands and the property is being subdivided after April 9, 2007 (triggers Rule 4.2.1(b)). Required buffer widths are outlined in Table 18 for all wetlands larger than one acre and all groundwater-dependent natural resources.

The buffer around Wetland 16 has been extended to include adjacent steep slopes and the buffer around Wetland E has been extended to include the adjacent mapped natural community. Buffer monumentation locations are shown on the plan. The design and signage text were not included in the plan set and therefore must be provided for BCWD review and approval.

Table 18 – Wetland Buffer Distances

<i>Wetland</i>	<i>Management Class</i>	<i>Required Buffer (ft)</i>
E	Manage 1 (GDNR)	100
J (Fen)	Preserve (GDNR)	100
M	Manage 1	75
N	Manage 1	75
16	Preserve (GDNR)	100
9P	Manage 1 (GDNR)	100

Under Rule 4.4.1, at the time a buffer is created under Rule 4.0, the District may require a planting or landscaping plan to establish adequate native vegetative cover for area that (a) has vegetation composed more than 30 percent of undesirable plant species (including, but not limited to reed canary grass, common buckthorn, purple loosestrife, leafy spurge, bull thistle, or other noxious weeds); or (b) consists more than 10 percent of bare or disturbed soil or turf grass.

The current vegetative condition in the proposed buffers has not been assessed, although review of aerial imagery indicates some portions of the buffer, specifically around the fen, are agricultural field. As a condition of permit approval, the buffer vegetation needs to be analyzed and the project landscaping plan must be modified and approved by BCWD as needed to provide native vegetation cover compliant with subsection 4.4.1.

Rule 4.0 Conditions:

- 4-1. Revise buffer exhibit for Wetland 9P to a width of 100 feet (currently shown as 75-foot buffer).
- 4-2. Provide a draft buffer maintenance declaration for BCWD approval, then, after approval, proof of recordation with Washington County (BCWD 4.2.2). A template is available under the permit section of the District's website.
- 4-3. Provide a buffer sign detail with a design and text approved by District staff in writing (BCWD 4.2.3).
- 4-4. Conduct an assessment of the proposed buffer area to determine the vegetative composition of undesirable plant species, bare, disturbed soil or turf grass and provide BCWD with a buffer establishment plan for review and approval (BCWD 4.4.1).

Rule 5.0—SHORELINE AND STREAMBANK ALTERATIONS

According to BCWD Rule 5.2, no person may disturb the natural shoreline or streambank partially or wholly below the ordinary high water mark of a waterbody, without first securing a permit from the District.

- Rule Not Applicable to Permit. *There are no proposed shoreline or streambank alterations.*

Rule 6.0—WATERCOURSE AND BASIN CROSSINGS

According to Rule 6.2, no person may use the beds of any waterbody within the District for the placement of roads, highways and utilities without first securing a permit from the District.

- Rule Not Applicable to Permit. *There are no proposed watercourse or basin crossings.*

Rule 7.0—FLOODPLAIN AND DRAINAGE ALTERATIONS

No person may alter or fill land below the 100-year flood elevation of any waterbody, wetland, or stormwater management basin, or place fill in a landlocked basin, without first obtaining a permit from the District. No person may alter stormwater flows at a property boundary by changing land contours, diverting or obstructing surface or channel flow, or creating a basin outlet, without first obtaining a permit from the District.

- Rule Requirements Met

According to BCWD Rule 7.3.1, floodplain filling must be accompanied by a replacement of flood volume between the ordinary water level and the 100-year flood elevation.

There is proposed floodplain fill for Wetland 16 due to the outlet pipe from Infiltration Basin #100B. This fill is offset by floodplain cut at the same location, for a net increase in flood storage of 5 cubic yards.

Table 19 – Floodplain Fill

Wetland	Floodplain Fill (CY)	Floodplain Cut (CY)	Net Change in Storage
16	25	30	+5

According to BCWD rule 7.3.2 all new and reconstructed buildings must be constructed such that the lowest floor is at least two feet above the 100-year high water elevation or one foot above the emergency overflow (EOF) of a constructed basin.

The 100-year high water elevations, EOFs, and lowest adjacent building elevations were evaluated and meet the District’s low floor requirement as demonstrated in Table 20.

For lots draining south and west into VBWD, the VBWD engineer has recommended that all low floors and septic systems should be no lower than 987 (2 feet higher than the overflow of Sunnybrook Lake).

Table 20 – Freeboard Requirement Summary

Stormwater Facility / Wetland	Landlocked?	EOF	100-Year HWL	Lot, Block	Allowable Basement Floor	Proposed Basement Floor
A	No	999	999.32	L1B1	1,001.32	1,002.5
B	No	996.70	996.95	L1B1	998.95	1,002.5
C	No	991.5	992.69	L1B1	994.69	1,002.5
D	No	943.00	943.95	L11B1	945.95	989.5
				L12B1		990.5
E	No adjacent structures					
F	No adjacent structures					
G	No adjacent structures					
H	No adjacent structures					
K	No	983.00	983.86	L7B1	985.86	1,001.5
M	No adjacent structures					
N	No adjacent structures					
Z	No	999.00	999.22	L7B1	1,001.22	1,001.5

<i>Stormwater Facility / Wetland</i>	<i>Landlocked?</i>	<i>EOF</i>	<i>100-Year HWL</i>	<i>Lot, Block</i>	<i>Allowable Basement Floor</i>	<i>Proposed Basement Floor</i>
1	No adjacent structures					
2	No adjacent structures					
3	No adjacent structures					
4	No	1,001.00	1,001.47	L3B1	1,003.47	1,009.5
				L4B1		1,007.0
5	No	1,004.00	1,004.10	L4B1	1,006.10	1,007.0
7	No	993.00	993.15	L5B1	995.15	1000.5
				L6B1		999.5
8	No	982.80	983.78	L6B1	985.78	999.5
9	No adjacent structures					
10	No adjacent structures					
11	No adjacent structures					
12	No adjacent structures					
13	No adjacent structures					
14	No adjacent structures					
16	Yes	930.89	926.39	L1B2	929.39	935.5
9P	No adjacent structures					
Pond 300*	No	995.40	995.21	L2B1	996.40	1,007.5
Pond 200*	No	994.0	993.36	L8B1	995.00	996.5
				L7B1		1,001.5
Infiltration Basin #100A*	No adjacent structures					
Infiltration Basin #100B*	No	936.0	933.75	L1B2	935.75	935.8
Unnamed Low Area	No	937.00	936.99	L4B2	938.00	941.5
				L5B2		942.5

<i>Stormwater Facility / Wetland</i>	<i>Landlocked?</i>	<i>EOF</i>	<i>100-Year HWL</i>	<i>Lot, Block</i>	<i>Allowable Basement Floor</i>	<i>Proposed Basement Floor</i>
Unnamed Low Area	Yes	943.10	939.38	L5B2	942.38	942.5
No adjacent waterbodies				L9B1	NA	1,001.5
No adjacent waterbodies				L10B1	NA	995.7
No adjacent waterbodies				L2B2	NA	939.5
No adjacent waterbodies				L3B2	NA	942.5

****Stormwater facilities were assumed to start full for calculating freeboard***

Under BCWD Rule 7.3.5, the District will issue a permit to alter surface flows under paragraph 7.2 only on a finding that the alteration will not have an unreasonable impact on an upstream or downstream landowner and will not adversely affect flood risk, basin or channel stability, groundwater hydrology, stream baseflow, water quality or aquatic or riparian habitat.

As discussed under Rule 2.0, decreases in runoff volume and decreased duration of inundation from the project result in no increase in flood risk for Wetland 16 or the wetland downstream from discharge point 2R. Likewise, Wetlands M, N, and 9P have a reduction in both bounce and duration of inundation for all events, except for a 0.03-foot increase in HWL for the 100-year storm on Wetland M. This slight increase does not impact freeboard for any nearby homes and is due to changes in flow timing, not an increase in runoff volume.

The hydroCAD model was used to evaluate HWLs and time to peak for offsite depression 5P which has its outlet adjusted under proposed conditions. Table 21 shows that the HWLs and time to peak go down for all events indicating no increased risk of flooding from this depression.

Table 21 – Depression 5P Impact Summary

	<i>2-year</i>		<i>10-year</i>		<i>100-year</i>	
	<i>Existing</i>	<i>Proposed</i>	<i>Existing</i>	<i>Proposed</i>	<i>Existing</i>	<i>Proposed</i>
HWL (ft)	927.29	926.50	928.33	927.24	930.05	928.54
Time to peak (hr)	25	24	25	24	25	24

The BCWD engineer analyzed downstream impacts from Wetland E in light of known flooding issues on the Trent property at 10621 75th Street North (downstream from the project). Wetland E, also known as the Kimbro Basin, flooded in 2020 due to historic high groundwater levels. The water level on the wetland peaked at 934.73 and remained elevated long enough for water to seep into the basement (estimated elevation of 932) of the home where their drinking well is located. To address these concerns, BCWD conducted the Kimbro Basin Flood Mitigation Evaluation in fall 2020. This evaluation considered a number of options including pumping water downstream, permanently raising 75th Street, and flood-proofing of the Trent residence. None of these options were pursued further after the completion of this evaluation.

While the analysis above under Rule 2.0 indicates that runoff volume and duration of inundation decrease for Wetland E for the 2, 10, and 100-year, 24-hour storms, additional storm events were considered to assess the situation when Re-use Pond 300 becomes full and no longer provides volume control for this discharge point. The two additional storms considered were the 100-year, 10-day storm event (10.8") and the 100-year, 24-hour back-to-back storm event (14.4"). It takes roughly 4.9 inches of rain (roughly equivalent to the 25-year, 24-hour storm) to fill Re-use Pond 300, so any excess rainfall will not be retained in the pond. The hydroCAD model was used to compare proposed runoff volumes against existing conditions and the BCWD H&H model was used to estimate the footprint of Wetland E for these storm events.

Results are summarized in Table 22 and Table 23. The wetland footprint includes both Wetland E and an adjacent wetland on the north side of 75th Street. These wetlands are connected by submerged culverts under the road and act as one wetland system. For the 100-year, 24-hour back-to-back storm event, the HWL on Wetland E exceeds its natural overflow elevation (935.44) allowing runoff to flow into downstream Wetland 16 as well. Therefore, the footprint for Wetland 16 is included for this storm event and both 1st addition and full buildout are considered to account for the volume control provided by the infiltration basins built during the 2nd addition of the project. Two different starting water levels were considered for both Wetland E and Wetland 16 since the water levels vary significantly with groundwater levels. These water levels were derived from LIDAR flown in November 2011 and May 2022, with water levels in 2022 showing almost a 4-foot increase.

Table 22 – Wetland E Runoff Volumes

<i>Storm Event</i>	<i>Existing Volume (ac-ft)</i>	<i>1st Addition Volume (ac-ft)</i>	<i>Full Buildout Volume (ac-ft)</i>	<i>Max Increase in Volume (ac-ft)</i>
100-year, 24-hour	16.15	13.84	13.84	-2.31
100-year, 10-day	28.70	28.56	28.56	-0.14
100-year, 24-hour back-to-back*	115.10	104.36	115.95	0.85

***Includes runoff volume from both discharge points 1R-1 and 1R-2**

Table 23 – Wetland E HWL Changes

<i>Storm Event</i>	<i>Starting Water Level (ft)</i>	<i>Existing HWL (ft)</i>	<i>Wetland Footprint (ac)</i>	<i>Change in HWL (ft)</i>
100-year, 24-hour	926.0	933.52	13.03	-0.18
	929.7	935.05	20.13	-0.11
100-year, 10-day	926.0	930.51	11.12	-0.01
	929.7	932.69	12.44	-0.01
100-year, 24-hour back-to-back	926.0	936.18	28.65*	+0.03
	929.7	936.33	30.71*	+0.03

***Includes surface areas of both Wetland E and Wetland 16 at their existing HWLs**

The results above indicate that for the 100-year, 10-day storm, 100-year, 24-hour storm, and smaller events, the proposed design will reduce flooding risk for Wetland E. For the 100-year, 24-hour back-to-back event, there will be a 0.03-foot (0.4-inch) increase in the HWL which would pose a slight increase in risk to the Trent property. Given that this event has a low probability of occurring and that the lack of freeboard on the Trent property is an existing condition (i.e. not due to the proposed development), the BCWD Engineer finds that this slight increase in flood risk is reasonable.

There is still some risk if water from the ponds isn't used for irrigation and the ponds fill up. To minimize this risk, the design was adjusted from irrigating lawns to irrigating the wetland buffers. This allows for irrigation to be controlled by the HOA instead of individual homeowners. This also allows for irrigation to start right away once the pond infrastructure is in place instead of waiting for lawns to be established as individual homes are purchased. Annual reporting on the volume of water irrigated will be a requirement of the stormwater maintenance declaration.

Lastly, these same extreme events were considered for discharge point 7R from Wetland N. This wetland overflows through several other wetlands and eventually into landlocked Sunnybrook Lake in VBWD. Sunnybrook Lake has experienced similar flooding issues to Kimbro Basin due to high groundwater levels. Table 24 demonstrates that the runoff from the proposed development will decrease for all events and will not increase flood risk on Sunnybrook Lake. All land disturbance draining to Wetland N will occur in the 1st addition of the project, so there is no difference between the runoff from the 1st addition and full buildout.

Table 24 – Wetland N Runoff Volumes

Storm Event	Existing Volume (ac-ft)	Proposed Volume (ac-ft)	Change in Volume (ac-ft)
100-year, 24-hour	6.94	5.16	-1.78
100-year, 10-day	21.72	18.83	-2.89
100-year, 24-hour back-to-back	37.57	33.54	-4.03

Rule 8.0—FEES

Fees for this project as outlined below:

- 1. Stormwater management fee \$3,300
- 2. Erosion control fee for grading \$2,000
- 3. Floodplain and drainage alterations fee \$500

- **TOTAL FEES** **\$5,800**

Rule 9.0—FINANCIAL ASSURANCES

Financial assurances for this project are as outlined below:

- 1. Grading or Alteration (43.8 acres disturbed x \$2,000/acre) \$87,600
- 2. Stormwater Management Facilities (125% of facility cost) TBD

- **TOTAL FINANCIAL ASSURANCES**
(\$5,000 Minimum Performance Financial Assurance) TBD

The applicant's engineer has not yet provided an estimate of stormwater management facilities cost. The BCWD engineer will review this estimate and use it to determine the required financial assurance.

Rule 9.0 Conditions:

- 9-1. Estimate of stormwater management facility cost as agreed upon by applicant and BCWD engineer.

Rule 10.0—VARIANCES

According to BCWD Rule 10.0, the Board of Managers may hear requests for variances from the literal provisions of these Rules in instances where their strict enforcement would cause undue hardship because of the circumstances unique to the property under consideration. The Board of Managers may grant variances where it is demonstrated that such action will be keeping with the spirit and intent of these rules. Variance approval may be conditioned on an applicant's preventing or mitigating adverse impacts from the activity.

- Rule Not Applicable to Permit. *There are no requested variances.*

RECOMMENDED ACTION: Approve the application as outlined and analyzed above, that follows with the conditions and stipulations stated below, for a three-year term.

RECOMMENDED CONDITIONS:

The following is a summary of the remaining tasks necessary to bring the project into compliance with the BCWD Rules in all respects other than where variances are requested as discussed above:

1. Demonstrate that the plan has received preliminary plat approval (BCWD Rule 1.3a).
2. Demonstrate that the plan has received Wetland Conservation Act approval (BCWD Rule 1.3).
3. Provide the District with documentation that the applicant has authorization to complete work within the right of way of CSAH 12.
4. Address all stormwater management requirements (Conditions 2-1 to 2-4).
5. Address all erosion control requirements (Conditions 3-1 to 3-2).
6. Address all buffer requirements (Conditions 4-1 to 4-4).
7. Address all financial assurance requirements (Condition 9-1).
8. Replenish the Permit fee deposit to \$5,800 (BCWD Rule 8.0). BCWD has reviewed seven revisions of the permit applicant materials and has an outstanding permit deposit fee of \$30,432. If the permit fee deposit is not replenished within 60 days of receiving notice that such deposit is due, the permit application or permit shall be deemed abandoned and all prior approvals shall be revoked and collection proceedings shall begin on unpaid balances.
9. Provide the required financial assurances (BCWD Rule 9.0):
 - a. Total grading or alteration assurance 43.8 acres (\$87,600).
 - b. Stormwater management facilities assurance (TBD).

STIPULATIONS OF APPROVAL:

1. Note that the permit, if issued, will require that the applicant notify the District in writing at least three business days prior to commencing land disturbance. (BCWD Rule 3.3.1)
2. To ensure that construction is carried out according to the approved plan, provide verification that construction standards have been met for all infiltration basins and pretreatment swales. This includes but is not limited to confirmation that infiltration basin sub-cut reaches soil material reflected in the geotechnical report and that the vegetation establishment procedures have been followed per the landscaping/restoration plan. This can be achieved by scheduling a BCWD inspection during the excavation of the basins, independent geotechnical engineer observation and note of confirmation, or well-documented photographic evidence by the onsite engineer along with collected survey elevations of the basins.
3. Provide the District with As-built record drawings showing that the completed grading and stormwater facilities conform to the grading plan.