



18681 Lake Drive East
Chanhassen, MN 55317
952-607-6512
www.rpbcwd.org

Riley Purgatory Bluff Creek Watershed District Permit Application Review

Permit No: 2022-005

Considered at Board of Managers Meeting: May 4, 2022

Received complete: April 19, 2022

Applicant: Mary Muewissen

Consultant: Civil Site Group, Matt Pavek

Project: Cunningham 2nd: Proposed redevelopment of an existing single-family home parcel into two single-family residential lots with homes. Proposed stormwater features include two biofiltration basins with elevated underdrain to promote infiltration.

Location: 855 Pleasant View Road, Chanhassen, MN 55317

Reviewer: Scott Sobiech, P.E., Barr Engineering

Proposed Board Action

Manager _____ moved and Manager _____ seconded adoption of the following resolutions based on the permit report that follows and the presentation of the matter at the May 4, 2022 meeting of the managers:

Resolved that the application for Permit 2022-005 is approved, subject to the conditions and stipulations set forth in the Recommendations section of the attached report;

Resolved that on determination by the RPBCWD administrator that the conditions of approval have been affirmatively resolved, the RPBCWD president or administrator is authorized and directed to sign and deliver Permit 2022-005 to the applicant on behalf of RPBCWD.

Upon vote, the resolutions were adopted, _____ [VOTE TALLY].

Applicable Rule Conformance Summary

Rule	Issue	Conforms to RBPCWD Rules?	Comments	
C	Erosion Control Plan	Yes		
D	Wetland and Creek Buffers	See comment.	See rule-specific permit condition D1 and D1 related to prevention of aquatic invasive species transfer and recordation of buffer maintenance declaration.	
J	Stormwater Management	Rate	Yes.	
		Volume	See comment.	See rule-specific permit condition J1 related to verifying the infiltration capacity of the soils and separation to groundwater.
		Water Quality	Yes.	
		Low Floor Elev.	See comment.	See rule-specific permit condition J2 related to adequate separation to groundwater for existing habitable structures.
		Maintenance	See comment.	See rule-specific permit condition J3 related to recordation of stormwater facility maintenance declaration.
		Chloride Management	Yes.	
		Wetland Protection	Yes.	
L	Permit Fee	Yes.	\$3,000 received February 8, 2022. The applicant must replenish the permit fee deposit to the original amount due before the permit will be issued. As of April 28, 2022 the amount due is \$4,165.80.	
M	Financial Assurance	See comment.	The financial assurance is calculated at \$186,897	

Background

The applicant is proposing a lot split subdividing an existing single residential lot into two lots with construction of a new home on each lot. Two biofiltration basins with elevated underdrain to promote infiltration are proposed to provide stormwater quantity, volume and quality control.

The water resources within the project site or downgradient of the proposed activities are summarized in the following table. The table also provides a brief explanation of how each resource is implicated in the permit application review process.

Water resource impacted by project

Water Resource	Projected resource impacts
Wetland 1	A Wetland Conservation Act (WCA) protected wetland onsite and downgradient from proposed land-disturbing activities.

The project site information is summarized below:

Project Site Information	Area (acres)
Total Site Area	3.38
Existing Site Impervious	0.11
Disturbed Site Impervious Area	0.11 (100%)
Proposed Site Impervious Area	0.39
Change in Site Impervious Area	0.28 (>100% increase)
Total Disturbed Area	1.9

The following materials were reviewed in support of the permit request:

1. Application received February 7, 2022 (Incomplete notice was sent on February 17, 2022; materials submitted to complete application on April 19, 2022)
2. Grading plan by Otto Associates dated January 19, 2022
3. Construction Plan Sheets (12 sheets) dated March 18, 2022 (revised August 2, 2021, August 25, 2021, September 20, 2021, and September 27, 2021)
4. Geotechnical exploration report by Haugo GeoTechnical Services data January 13, 2022
5. Stormwater Report by Otto Associate dated January 20, 2022
6. Seasonally Saturated Soil Test Report by Otto Associate dated January 12, 2022
7. Stormwater Management Report by Civil Site Group dated March 18, 2022 (revised April 19, 2022)
8. Preliminary Cunningham 2nd Plat Dated December 7, 2021
9. Wetland Delineation Report by Kjolhaug Environmental Services Company, Inc. dated November 10, 2021
10. MNRAM Wetland Classification received February 7, 2022
11. Electronic HydroCAD models received on February 7, 2022 (revised March 21, 2022 and April 19, 2022)
12. Electronic MIDS water quality models received on February 7, 2022 (revised April 19, 2022)
13. Electronic P8 water quality models received on March 21, 2022 (revised April 19, 2022)
14. Engineers' opinion of probable cost dated March 18, 2022 (revised April 19, 2022)
15. Response to RPBCWD review comments received March 21, 2022
16. Response to RPBCWD review comments received April 19, 2022

Rule C: Erosion and Sediment Control

Because the project will involve 1.9 acres of land-disturbing activity, the project must conform to the requirements in the RPBCWD Erosion and Sediment Control rule (Rule C, Subsection 2.1). The erosion control plan prepared by Civil Site Group includes installation of perimeter control (silt fence or sediment control logs), a stabilized rock construction entrance, inlet protection, daily inspection, staging areas, placement of a minimum of 6 inches of topsoil (at 5% organic matter), decompaction of areas compacted during construction, and retention of native topsoil onsite to the greatest extent possible. To conform to RPBCWD Rule C requirements, the following revisions are needed:

- C1. The Applicant must provide the name, address and phone number of the individual who will remain liable to the District for performance under this rule and maintenance of erosion and sediment-control measures from the time the permitted activities commence until vegetative cover is established.

Rule D: Wetland and Creek Buffers

Because the proposed work triggers a permit under RPBCWD Rule J and a wetland protected by the state Wetland Conservation Act is downgradient from (but not disturbed by) the proposed construction activities, Rule D, Subsections 2.1a and 3.1 require buffer on the edge of the wetland that is downgradient from the land-disturbing activities.

The Wetland Delineation Report and MnRAM analysis submitted indicate that the wetland onsite is medium value wetlands. Rule D, Subsection 3.1.a.iii requires wetland buffer with an average of 40 feet from the delineated edge of the wetland, minimum 20 feet for medium value wetlands. The buffer widths are summarized in the table below.

Wetland ID	RPBCWD Wetland Value	Required Minimum Width (ft)	Required Average Width (ft)	Required Area (sq ft)	Provided Area (sq ft)	Provided Minimum Width (ft)	Provided Average Width (ft)
Wetland 1	Medium	20	40	2,590 ¹	11,275 ²	20	40.1

¹ Buffer area required only along the portion of the wetland downgradient from land-disturbing activities.

² Applicant is providing buffer along the entire wetland boundary on the site.

Because the applicant does not proposed any land-disturbing activities within the proposed buffer area and the buffer areas will be left in a naturalize state as part of the required maintenance declaration, the project will conform to Rule D, Subsection 3.3. The engineer’s review of plan sheets shows that buffer markers will be placed per District criteria (subsection 3.4).

To conform to RPBCWD Rule D the following revisions are needed:

D1. A note must be included on the plan sheet indicating the project will be constructed so as to minimize the potential transfer of aquatic invasive species (e.g., zebra mussels, Eurasian watermilfoil, etc.) to the maximum extent possible conforming to Rule D, Subsection 3.6.

D2. Buffer area maintenance requirements must be documented in a declaration recorded after review and approval by RPBCWD in accordance with Rule D, Subsection 3.5.

Rule J: Stormwater Management

Because the project will disturb 1.9 acres of land-surface area, the project must meet the criteria of RPBCWD’s Stormwater Management rule (Rule J, Subsection 2.1). The criteria listed in Subsection 3.1 will apply to the entire project site because the project will increase the imperviousness of the entire site by more than 100 percent (Rule J, Subsection 2.3).

The developer is proposing construction of two biofiltration basins with elevated underdrain to promote infiltration to provide rate control, volume abstraction and water quality management on the site.

Rate Control

In order to meet the rate control criteria listed in Subsection 3.1.a, the 2-, 10-, and 100-year post development peak runoff rates must be equal to or less than the existing discharge rates at all locations where stormwater leaves the site. The applicant used a HydroCAD hydrologic model to simulate runoff rates for pre- and post-development conditions for the 2-, 10-, and 100-year frequency storm events using a nested rainfall distribution, and a 100-year frequency, 10-day snowmelt event. The existing and proposed 2-, 10-, and 100-year frequency discharges from the disturbed site area are summarized in the table below. The proposed project is in conformance with RPBCWD Rule J, Subsection 3.1.a.

Modeled Discharge Location	2-Year Discharge (cfs)		10-Year Discharge (cfs)		100-Year Discharge (cfs)		10-Day Snowmelt (cfs)	
	Ex	Prop	Ex	Prop	Ex	Prop	Ex	Prop
East	7.1	3.9	12.9	6.9	54.6	52.6	1.2	1.2
West	0.9	0	1.5	0	3.0	0	0.1	0
Southeast	3.6	2.9	6.6	5.2	42.0	40.6	1.0	1.0
Northeast	3.6	1.1	6.2	4.4	12.6	12.0	0.3	0.3
Wetland	0	0	0.4	0.3	29.4	27.6	0.7	0.7

Volume Abstraction

Subsection 3.1.b of Rule J requires the abstraction onsite of 1.1 inches of runoff from all new or disturbed impervious surface of the parcel. An abstraction volume of 1,573 cubic feet is required from the 0.39 acres (17,158 square feet) of new and reconstructed impervious area on the site for

abstraction. The Applicant proposes two biofiltration basins with elevated underdrain to promote infiltration to provide volume abstraction. Pretreatment is provided a grass filter strips between the impervious surface and the biofiltration basins (Rule J, Subsection 3.1.b.1).

Six soil borings performed by Haugo Geotechnical Services on December 27, 2021 show that soils in the project area are primarily clayey sand and sandy lean clay. Groundwater was not observed in the soil borings. The Seasonally Saturated Soil Test Report by Otto Associate dated January 12, 2022 collected additional subsurface information at five soil pit locations on the site. Because the subsurface investigation information summarized below conflicts with the soil boring information and suggest that the seasonally high groundwater is less than 3 feet below the bottom of the proposed biofiltration basins (Rule J, Subsection 3.1.b.2.a), design modifications or additional subsurface investigations are needed to ensure adequate groundwater separation.

Groundwater Separation Analysis

Proposed BMP	Nearest Subsurface Investigation	Boring is within footprint?	Groundwater Elevation (feet)	BMP Bottom Elevation (feet)	Separation (feet)
Biofiltration Basin 1	Soil Pit #5	Yes	No groundwater observed but redoximorphic soils encountered at 38 inches below grade (approx. el 987.8)	986.9	0.9
Biofiltration Basin 2	Soil Pit #2	Yes	No groundwater observed but redoximorphic soils encountered at 15 inches below grade (approx. el 980.8)	976.9	-1.2

The engineer concurs with the applicant’s design infiltration rates of 0.06 inches per hour for clayey soil based on the guidelines provided in the Mn Stormwater Manual. Based on the design infiltration rate, the engineer concurs that the basins will draw down within 48 hours (Rule J, subsection 3.1b.3). The applicant indicated a plan to perform in-situ infiltration testing during construction when soils thaw in the spring. Pending the infiltration testing results, the Engineer concurs that because of the expected low infiltration capacity of the soils, observed redoximorphic soil depths, and steep slope adjacent to the proposed work, the site is considered restricted and stormwater runoff volume must be managed in accordance with Subsection 3.3 of Rule J.

For restricted sites, subsection 3.3 of Rule J requires rate control in accordance with subsection 3.1.a and that abstraction and water-quality protection be provided in accordance with the following sequence: (a) Abstraction of 0.55 inches of runoff from site impervious surface determined in accordance with paragraphs 2.3, 3.1 or 3.2, as applicable, and treatment of all runoff to the standard in paragraph 3.1c; or (b) Abstraction of runoff onsite to the maximum extent practicable and treatment of all runoff to the standard in paragraph 3.1c; or (c) Off-site abstraction and treatment in the watershed to the standards in paragraph 3.1b and 3.1c. The engineer concurs that the 1,266 cubic feet of abstraction provided by the applicant’s proposed biofiltration basins with elevated underdrain to

promote infiltration is in accordance with subsection 3.3.a presuming the additional subsurface investigation or design revisions described above demonstrate the required 3 feet of separation.

The table below summarizes the volume abstraction for the site based on the design infiltration capacity of the filtration/infiltration swale.

Volume Abstraction Summary

Required Abstraction Depth (inches)	Required Abstraction Volume (cubic feet)	Provided Abstraction Depth (inches)	Provided Abstraction Volume (cubic feet)
0.55	786	0.89	1,266

With the conditions noted below regarding verification of subsurface conditions, the engineer concurs with the submitted information and finds that the proposed project will conform with Rule J, Subsection 3.3.a.

- J1. Per Rule J, Subsection 3.1.b.2.c measured infiltration capacity of the soils at the bottom of the infiltration systems must be provided. The applicant must submit documentation verifying the infiltration capacity of the soils and that the volume control capacity is calculated using the measured infiltration rate. If infiltration capacity is less than needed to conform with the volume abstraction requirement in subsection 3.3a or there is inadequate separation to groundwater, design modifications to achieve compliance with RPBCWD requirements will need to be submitted (in the form of an application for a permit modification or new permit).

Water Quality Management

Subsection 3.1.c of Rule J requires the Applicant provide at least 60 percent annual removal efficiency for total phosphorus (TP), and at least 90 percent annual removal efficiency for total suspended solids (TSS) from site runoff, and no net increase in TSS or TP loading leaving the site from existing conditions. The applicant is proposing to use two biofiltration basins with elevated underdrain to promote infiltration to achieve the required TP and TSS removals and submitted P8 models to estimate the TP and TSS removals. The results of this modeling are summarized in tables below showing the annual TSS and TP removal requirements are achieved and that there is no net increase in TSS and TP leaving the site. The engineer concurs with the modeling and finds that the proposed project is in conformance with Rule J, Subsection 3.1.c.

Annual TSS and TP removal summary

Pollutant of Interest	Regulated Site Loading (lbs/yr)	Required Load Removal (lbs/yr)	Provided Load Reduction (lbs/yr)
Total Suspended Solids (TSS)	676.2	608.6 (90%)	610.2 (90.2%)
Total Phosphorus (TP)	2.2	1.3 (60%)	1.3 (60.0)%

Summary of net change in TSS and TP leaving the site

Pollutant of Interest	Existing Site Loading (lbs/yr)	Proposed Site Load after Treatment (lbs/yr)	Change (lbs/yr)
Total Suspended Solids (TSS)	487	66	-421
Total Phosphorus (TP)	1.5	0.6	-0.9

Low floor Elevation

All new 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 of a stormwater-management facility according to Rule J, Subsection 3.6a. In addition, a stormwater-management facility must be constructed at an elevation that ensures that no adjacent habitable building will be brought into noncompliance with this requirement, according to Rule J, Subsection 3.6b. The low floor elevation of the proposed homes and the adjacent stormwater management feature is summarized below and shows proposed project is in conformance with Rule J, Subsection 3.6a.

Lot Riparian to Stormwater Facility	Low Floor Elevation of Building (feet)	Adjacent Stormwater Facility	100-year Event Flood Elevation of Adjacent Stormwater Facility (feet)	Freeboard to 100-year Event (feet)	Surface Overflow Elevation (feet)	Freeboard to Surface Overflow (feet)
Lot 1	1003.5	Biofiltration Basin 1	993.27	10.23	993.5	10.0
Lot 2	1001.1	Biofiltration Basin 2	983.33	17.77	983.49	17.61

Biofiltration Basins 1 and 2 will be constructed upgradient from habitable structures at 840 Fox Court and 6401 Fox Path, respectively. While the existing structures on these adjacent parcels are approximately 210 feet and 130 feet from the proposed biofiltration basins, the structures are at significantly lower elevations than the proposed flood elevations in the basins. Because the low floor elevation of the structures to the east of the proposed biofiltration basins are estimated to be below the 100-year flood elevation in the basin, the applicant must provide an analysis using *Appendix J1 Plot 1: Minimum Depth to Water Table for No Further Evaluation*. Because appendix J1 requires information about the groundwater elevation adjacent to the existing structures as well as the low floor elevations, additional subsurface investigation is needed. Because the current seasonally high groundwater level and the low floor elevations at the adjacent structures are unknown, the following revisions are needed to conform to RPBCWD Rule J, subsection 3.6.b requirements:

- J2. The applicant must submit supporting documentation demonstrating there is adequate separation to groundwater to achieve the low floor criteria for the adjacent structures at 840 Fox Court and 6401 Fox Path. This will require the determination of the low floor elevations and additional subsurface investigation along Fox Path and Fox Court to determine the groundwater elevation and complete the Appendix J1 analysis. If inadequate separation is not provided to conform with the low floor requirement in subsection 3.6b, design modifications to achieve

compliance with RPBCWD requirements will need to be submitted (in the form of an application for a permit modification or new permit).

Maintenance

Subsection 3.7 of Rule J requires the submission of a maintenance plan. All stormwater management structures and facilities must be designed for maintenance access and properly maintained in perpetuity to assure that they continue to function as designed. The Applicant provided a draft maintenance and inspection declarations for review that conforms to the maintenance and inspection required by Rule J, Subsection 3.7.

- J3. Permit applicant must provide a proof of recordation of the maintenance and inspection declaration as a condition of issuance of the permit.

Chloride Management

Subsection 3.8 of Rule J requires the submission of chloride management plan that designates the individual authorized to implement the chloride management plan and the MPCA-certified salt applicator engaged in implementing the plan. The RPBCWD chloride-management plan requirement applies to the streets and common areas of the project site, but not the individual single-family homes. Because there are no street or common areas, Rule J, subsection 3.8 does not impose requirements on this project.

Wetland Protection

Because the proposed activities do not discharge to a protected wetlands (Wetland 1) on the site but alter the tributary area and therefore the discharge the wetland receives from the site, the proposed activities must conform to RPBCWD wetland protection criteria (Rule J, subsection 3.10). Wetland 1 falls in the medium value category. In accordance with Rule J, subsection 3.10a, there is no proposed activity subject to Rule J that will alter the site in a manner that increases the bounce in water level, duration of inundation, or change the runout elevation in the subwatershed for the wetland receiving runoff from the land disturbing activities. Because the applicant's HydroCAD model results demonstrate, and the engineer concurs, that the proposed flow rate and volumes flowing towards the wetlands are less than the under existing conditions, the bounce and inundation will not increase, thus the project meets the Bounce and Inundation criterion.

Rule J, Subsection 3.10b requires that treatment of runoff to medium value wetlands meet the water quality treatment criteria in Rule J, subsection 3.1c. Because the site grading is such that runoff from regulated disturbed areas is directed away from the wetland, Rule J, Subsection 3.10b, does not impose requirements on this project.

Rule L: Permit Fee Deposit:

The RPBCWD permit fee schedule adopted in February 2020 requires permit applicants to deposit \$3,000 to be held in escrow and applied to cover the \$10 permit-processing fee and reimburse RPBCWD

for permit review and inspection-related costs and when a permit application is approved, the deposit must be replenished to the applicable deposit amount by the applicant before the permit will be issued to cover actual costs incurred to monitor compliance with permit conditions and the RPBCWD Rules. A permit fee deposit of \$3,000 was received on February 8, 2022. The applicant must replenish the permit fee deposit to the original amount due before the permit will be issued. Subsequently, if the costs of review, administration, inspections and closeout-related or other regulatory activities exceed the fee deposit amount, the applicant will be required to replenish the deposit to the original amount or such lesser amount as the RPBCWD administrator deems sufficient within 30 days of receiving notice that such deposit is due. The administrator will close out the relevant application or permit and revoke prior approvals, if any, if the permit-fee deposit is not timely replenished.

- L1. The applicant must replenish the permit fee deposit to the original amount due before the permit will be issued. The amount needed to replenish the permit fee deposit is \$4,165.80 as of April 28, 2022.

Rule M: Financial Assurance:

	Unit	Unit Cost	# of Units	Total
Rules C: Silt fence:	LF	\$2.50	1,800	\$4,500
Inlet protection	EA	\$100	0	0
Rock Entrance	EA	\$250	1	\$250
Restoration	Ac	\$2,500	1.9	\$4,750
Rules D: Wetland and Creek Buffer	LS	\$5,000	1	\$5,000
Rules J: Stormwater Management Two biofiltration basins with elevated underdrain to promote infiltration: 125% of engineer’s opinion of cost (\$124,325)	EA	125% OPC	1	\$155,406
Contingency (10%)		10%		\$16,991
Total Financial Assurance				\$186,897

Applicable General Requirements:

1. The RPBCWD Administrator and Engineer shall be notified at least three days prior to commencement of work.
2. Construction must be consistent with the plans, specifications, and models that were submitted by the applicant that were the basis of permit approval. The date(s) of the approved plans, specifications, and modeling are listed above and on the permit. The granting of the permit does not in any way relieve the permittee, its engineer, or other professional consultants of responsibility for the permitted work.
3. The grant of the permit does not relieve the permittee of any responsibility to obtain approval of any other regulatory body with authority.
4. The issuance of this permit does not convey any rights to either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.
5. In all cases where the doing by the permittee of anything authorized by this permit involves the taking, using or damaging of any property, rights or interests of any other person or persons, or

of any publicly owned lands or improvements or interests, the permittee, before proceeding therewith, must acquire all necessary property rights and interest.

6. RPBCWD's determination to issue this permit was made in reliance on the information provided by the applicant. Any substantive change in the work affecting the nature and extent of applicability of RPBCWD regulatory requirements or substantive changes in the methods or means of compliance with RPBCWD regulatory requirements must be the subject of an application for a permit modification to the RPBCWD.
7. If the conditions herein are met and the permit is issued by RPBCWD, the applicant, by accepting the permit, grants access to the site of the work at all reasonable times during and after construction to authorized representatives of the RPBCWD for inspection of the work.

Findings

1. The proposed project includes the information necessary, plan sheets and erosion control plan for review.
2. The proposed project will conform to Rules C, D and J if the Rule Specific Permit Conditions listed above are met.

Recommendation:

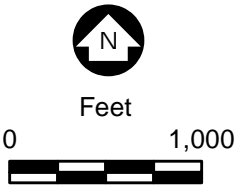
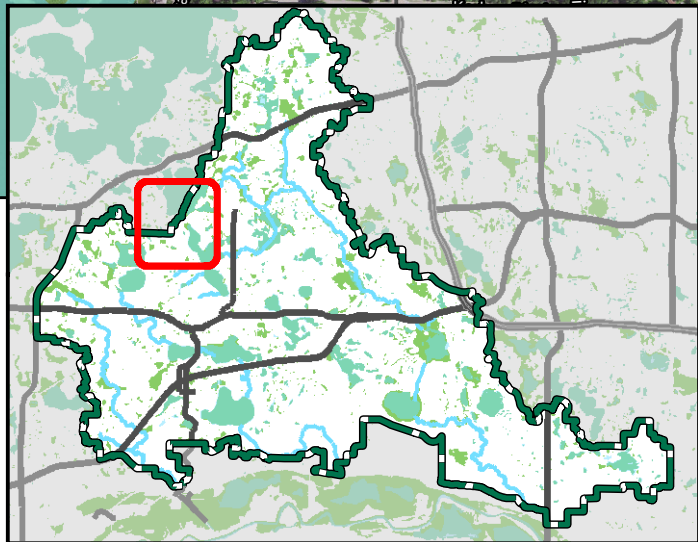
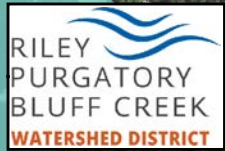
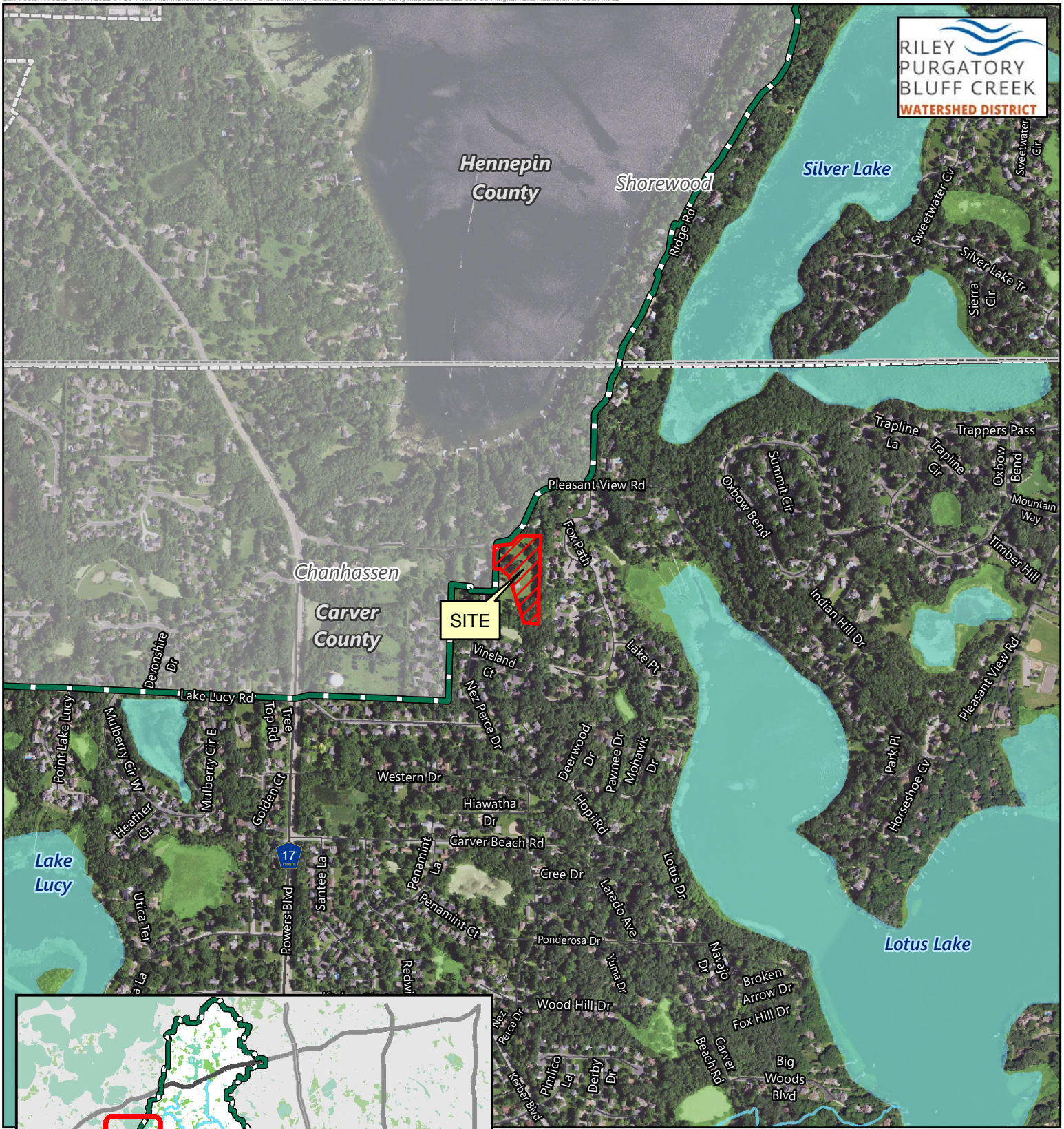
Approval of the permit issuance contingent upon:

1. Financial Assurance in the amount of \$186,897.
2. Receipt of updated plans indicating the project will be constructed so as to minimize the potential transfer of aquatic invasive species (e.g., zebra mussels, Eurasian watermilfoil, etc.) to the maximum extent possible.
3. The applicant must submit documentation verifying the infiltration capacity of the soils at each biofiltration basin and that the volume control capacity is calculated using the measured infiltration rate. If infiltration capacity is less than needed to conform with the volume abstraction requirement in subsection 3.3a or there is inadequate separation to groundwater or redoximorphic soils, design modifications to achieve compliance with RPBCWD requirements will need to be submitted (in the form of an application for a permit modification or new permit)
4. The applicant must submit supporting documentation demonstrating there is adequate separation to groundwater to achieve the low floor criteria for the adjacent structures at 840 Fox Court and 6401 Fox Path. This will require the determination of the low floor elevations and additional subsurface investigation along Fox Path and Fox Court to determine the groundwater elevation and complete the Appendix J1 analysis. If inadequate separation is not provided to conform with the low floor requirement in subsection 3.6b, design modifications to achieve compliance with RPBCWD requirements will need to be submitted (in the form of an application for a permit modification or new permit).

5. Receipt in recordation a maintenance declaration for the stormwater management facilities and buffers. Drafts of any and all documents to be recorded must be approved by the District prior to recordation. Permit applicant must provide a proof of recordation as a condition of issuance of the permit.
6. The applicant must replenish the permit fee deposit to the original amount due before the permit will be issued. The amount needed to replenish the permit fee deposit is \$4,165.80 as of April 28, 2022.

By accepting the permit, when issued, the applicant agrees to the following stipulations:

1. Continued compliance with General Requirements.
2. Per Rule J Subsection 4.5, upon completion of the site work, the permittee must submit as-built drawings demonstrating that at the time of final stabilization, all stormwater management facilities conform to design specifications and function as intended and approved by the District. As-built/record drawings must be signed by a professional engineer licensed in Minnesota and include, but not limited to:
 - a) the surveyed bottom elevations, water levels, and general topography of all facilities;
 - b) the size, type, and surveyed invert elevations of all stormwater facility inlets and outlets;
 - c) the surveyed elevations of all emergency overflows including stormwater facility, street, and other;
 - d) other important features to show that the project was constructed as approved by the Managers and protects the public health, welfare, and safety.
 - e) photographic evidence of buffer marker locations indicated by permanent, free-standing markers in accordance with Rule D, Subsection 3.4 criteria.
3. Providing the following additional close-out materials:
 - a) Documentation that constructed infiltration and filtration facilities perform as designed. This may include infiltration testing, flood testing, or other with prior approval from RPBCWD
 - b) Documentation that disturbed pervious areas remaining pervious have been decompacted per Rule C.2c criteria
4. The work on the Cunningham 2nd parcel under the terms of permit 2022-005, if issued, must have an impervious surface area and configuration materially consistent with the approved plans. Design that differs materially from the approved plans (e.g., in terms of total impervious area) will need to be the subject of a request for a permit modification or new permit, which will be subject to review for compliance with all applicable regulatory requirements.

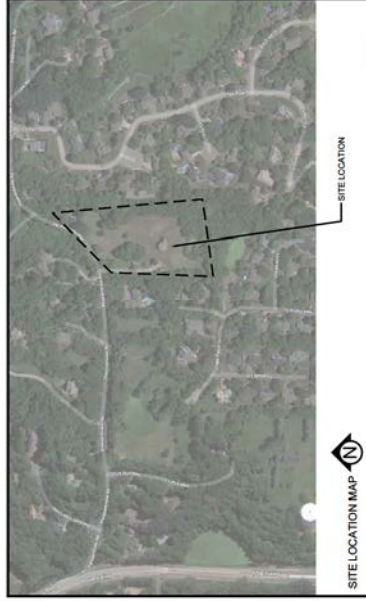


Permit Location Map
CUNNINGHAM 2ND
ADDITION
Permit 2022-005
Riley Purgatory Bluff Creek
Watershed District

CUNNINGHAM 2ND ADDITION

CHANHASSEN, MINNESOTA

ISSUED FOR: WATERSHED RESUBMITTAL



PRELIMINARY:
 NOT FOR
 CONSTRUCTION

CUNNINGHAM 2ND ADDITION
 855 PEASANT VIEW ROAD
 CHANHASSEN, MN 55317
 ADOR BESPOKE HOMES
 360 HWY 7, SUITE 218
 EXCEL SIOR, MN 55331

PROJECT: _____
 DATE: _____
 DRAWN BY: _____
 CHECKED BY: _____
 APPROVED BY: _____
 DATE: _____

SHEET NUMBER	SHEET TITLE
VI.0	SITE SURVEY
CI.0	CIVIL DESIGN
CI.1	GRADING PLAN
CI.2	UTILITY PLAN
CI.3	CIVIL DETAILS
CI.4	CIVIL DETAILS
CI.5	CIVIL DETAILS
SW.0	SWPPP - DISTURBING CONDITIONS
SW.1	SWPPP - DISTURBING CONDITIONS
SW.2	SWPPP - DETAILS
SW.3	SWPPP - NARRATIVE
SW.4	SWPPP - ATTACHMENTS
SW.5	SWPPP - ATTACHMENTS

SHEET INDEX

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VI.0	SITE SURVEY
CI.0	CIVIL DESIGN
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CI.4	CIVIL DETAILS
CI.5	CIVIL DETAILS
SW.0	SWPPP - DISTURBING CONDITIONS
SW.1	SWPPP - DISTURBING CONDITIONS
SW.2	SWPPP - DETAILS
SW.3	SWPPP - NARRATIVE
SW.4	SWPPP - ATTACHMENTS
SW.5	SWPPP - ATTACHMENTS

DEVELOPER / PROPERTY OWNER
 ADOR BESPOKE HOMES
 360 HWY 7, SUITE 218
 EXCEL SIOR, MN 55331
 612-438-8888
 www.adorhomes.com

ENGINEER / LANDSCAPE ARCHITECT
 CIVILSITE
 2000 15TH AVENUE SOUTH
 GOLDEN VALLEY, MN 55422
 612-438-8888
 www.civilsite.com

SURVEYOR
 MATT PATE
 948 BALTIMORE ST. STE. 100
 CHANHASSEN, MN 55317
 CONTACT: MATT PATE
 763-448-2987

GEOTECHNICAL ENGINEER
 HANCO GEOTECHNICAL SERVICES
 280 CEDAR AVENUE SOUTH
 GOLDEN VALLEY, MN 55422
 CONTACT: PAUL GOODMAN, P.E.
 612-371-1188



SEE LAYOUT NOTES:

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, AND CONDITIONS AGAINST THE CITY RECORDS AND SURVEY. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
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3. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION, INCLUDING A PERMIT FROM THE CITY OF CHANHASSEN FOR THE CONSTRUCTION OF THE PROJECT.
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SITE AREA CALCULATIONS

EXISTING CONDITION	PROPOSED CONDITION
ALL PAVEMENT	1,545 SF (5.5%)
ALL NON PAVEMENT	156,433 SF (80.0%)
TOTAL IMP. (LOOSY/HAZ)	157,978 SF (85.5%)
TOTAL UTILITY AREA	157,978 SF (85.5%)
IMPERVIOUS SURFACE	1,545 SF (1.0%)
EXISTING CONDITION	156,433 SF (84.5%)
PROPOSED CONDITION	157,978 SF (85.5%)

CITY OF CHANHASSEN SITE SPECIFIC NOTES:

1. RESERVED FOR CITY SPECIFIC NOTES.

RPCBWD SITE SPECIFIC NOTES:

1. NATURAL TOPOGRAPHY AND SOIL CONDITIONS MUST BE PROTECTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
2. SOIL SURFACE COMPACTED SUBSEQUENT TO CONSTRUCTION AND FINISHED TO ORIGINAL GRADE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
3. A SOIL COMPACTION TESTING PROGRAM SHALL BE CONDUCTED TO VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
4. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION, INCLUDING A PERMIT FROM THE CITY OF CHANHASSEN FOR THE CONSTRUCTION OF THE PROJECT.
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- SITE PLAN LEGEND:**
- CONCRETE DRIVEWAY STANDARDS, TYP.
 - ASPH/CONCRETE DRIVEWAY STANDARDS, TYP.
 - CONSTRUCTION LIMITS
 - DRIVE AND FOOT ASSEMBLY, SEE CHANHASSEN SPEC.
 - PROPERTY LINE
 - WETLAND BUFFER
 - WETLAND BUFFER
 - WETLAND BUFFER



Scale: 1" = 40'

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