

**Project Name** | BCWD Permit 25-04, Kranz Addition**Date** | March 7, 2025**To / Contact info** | BCWD Board of Managers**Cc / Contact info** | Tom & Holly Kranz / Applicant**Cc / Contact info** | Karen Kill, Administrator / BCWD**From / Contact info** | Paul Nation, PE; John Sarafolean / EOR**Regarding** | Permit Application No. 25-04 Engineer's Report

The following review of the above-mentioned project located within the legal jurisdiction of 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:** Tom & Holly Kranz

**Permit Submittal Date:** February 18, 2025

**Completeness Determination:** March 11, 2025

**Board Action Required By:** April 19, 2025

**Review based on BCWD Rules effective April 1, 2020**

**Recommendation: Approve with Conditions**

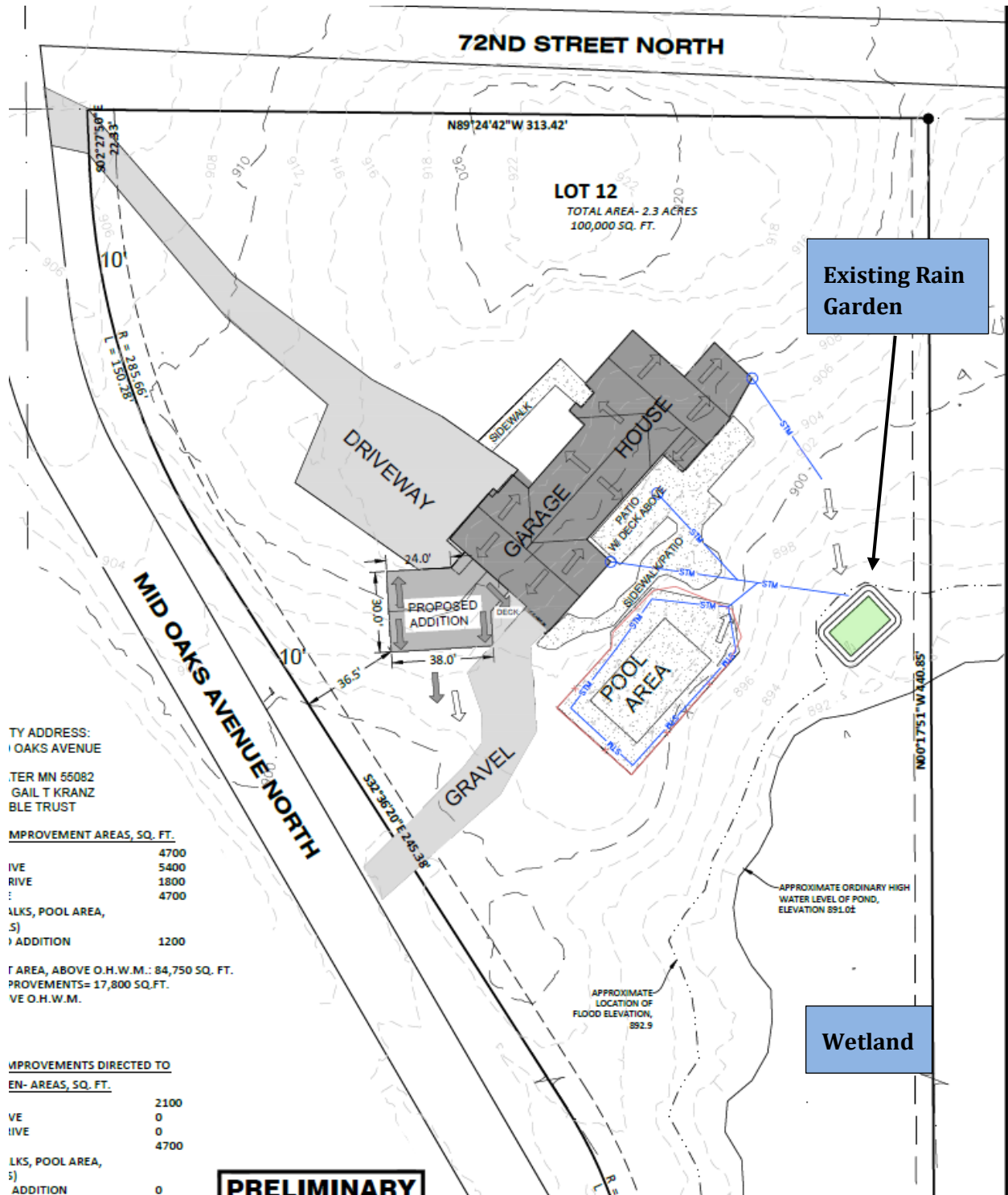
## BACKGROUND AND GENERAL COMMENTS

**Existing Conditions:** The proposed home addition project is located at 7181 Mid Oaks Avenue North in Stillwater. The site is east of Long Lake and south of Interlachen Drive. The property drains to and includes a portion of Public Waters Wetland 82-309W, which connects to Long Lake through a culvert beneath Mid Oaks Avenue. A previous BCWD permit was approved in 2022 for an addition of 1,729 sf of impervious for a pool and patio, for which a rain garden was constructed to treat the regulated impervious surface. The property currently has a home, attached garage, two driveways, sidewalk, patio, and pool which amounts to 16,600 square feet of impervious surface. Because less than 50 percent of the existing impervious surface on the property is to be disturbed, only the new impervious needs to be treated.

**Proposed Conditions:** The permit applicant is proposing to add 1,200 of impervious surface to the existing site. No new stormwater facility is proposed to be constructed to manage the additional runoff from this impervious; rather the applicant is requesting that BCWD approve the request based on excess management capacity provided by the rain garden constructed in 2022 beyond what was required under BCWD Permit 22-13. Because the BCWD rules do not provide for such a treatment-in-lieu approach, the applicant has requested a variance from compliance with BCWD's stormwater volume criteria for the required treatment of the new impervious surface.

**Recommendation:** The BCWD engineer recommends that the Board consider the applicant's variance request in light of the analysis provided below and otherwise approve the application with the conditions outlined in the report.

Figure 1: Site Plan



## Rule 2.0—STORMWATER MANAGEMENT

The proposed project triggers the application of Rule 2.0 Stormwater Management because the project involves creation of 1,200 square feet of new impervious surface which, aggregated with existing impervious surface, amounts to 17,800 square feet of impervious surface, exceeding the 10,000 square foot threshold in section 2.2(b). Since no disturbance of existing impervious is proposed, the proposed activity will disturb less than 50 percent of existing impervious surface, and the stormwater management standards apply only to net additional impervious surface and all disturbed areas on the project site. The site is within the Diversion Structure Subwatershed, so the stormwater criteria in subsection 2.4.1(b) apply.

*The project relies on management of stormwater from existing impervious areas beyond the amounts required under BCWD permit 22-13. Analysis of compliance with the applicable BCWD stormwater requirements is provided in section 10.0 Variances.*

### Rate Control

According to BCWD Rule 2.4.1(b)(i), an applicant must submit a stormwater-management plan providing no increase in the existing peak stormwater flow rates from the site for a 24-hour precipitation event with a return frequency of two, 10 or 100 years for all points where discharges leave the site.

Rule Requirement Met

*An updated version of the 22-13 permit hydrocad model of existing and post-development conditions was used to evaluate the stormwater runoff rate from the site. A comparison of the modeled peak flow rate is included in Table 1. As Table 1 demonstrates, the proposed stormwater runoff rate exceeds the existing conditions for the 2-, 10-, and 100-year, 24-hour events. However, the hydrocad model is measuring the rate exceedance at the point where the runoff enters the wetland. Uniquely, the discharge point from the property is within the wetland and therefore the runoff will be diffuse, meeting the rule requirement.*

**Table 1 - Peak Discharge Rate**

<i>Event</i>	<i>Existing Runoff Rate (cfs)</i>	<i>Proposed Runoff Rate (cfs)</i>
2-year (2.80")	1.8	1.9
10-year (4.16")	4.2	4.3
100-year (7.20")	10.0	10.2

### Volume Control

According to BCWD Rule 2.4.2(b), an applicant must submit a stormwater-management plan providing retention onsite of 1.1 inches of stormwater volume from the regulated impervious surface.

Rule Requirement Not Met *See analysis of variance request under Rule 10.0 section below.*

The applicant has proposed no new stormwater best management practices to treat the new impervious surface from the proposed house addition. The required stormwater treatment volume is 110 cf. This was calculated from the following equation.

$$\frac{(1.1 \text{ inches of stormwater} \times 1,200 \text{ square feet of impervious})}{\frac{12 \text{ inches}}{1 \text{ foot}}} = 110 \text{ cf}$$

### 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

*Drainage from the property flows to Public Waters Wetland 82-309W which BCWD has categorized as a Manage 1 wetland. According to Appendix 2.1, Manage 1 wetlands are limited to an increase of 0.5 feet in bounce and to the following inundation periods: existing plus one day for the 2-year event and two days for the 10-year event or greater. For the 100-year event under proposed conditions, an additional 720 cubic feet of runoff will discharge from the property. 720 cubic feet over the surface area of the wetland will equate to .006 ft of bounce, which is less than the required 0.5'. This volume is sufficiently small to have an immeasurable impact on the inundation of the wetland, and therefore, Rule 2.4.1(a)(iv) is met.*

### Rule 3.0—EROSION CONTROL

According to BCWD Rule 3.2, 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 the proposed project will involve movement of more than fifty cubic yards of earth.

Rule Requirements Met with Conditions.

*The erosion and sediment control plan includes the following:*

- *Perimeter control (silt fence) along downgradient edge of disturbed areas*
- *Restoration plan for disturbed soil areas including seeding.*

### **Rule 3.0 Conditions:**

3-1. Provide the contact information for the erosion and sediment control responsible party during construction once a contractor is selected.

- 3-2. Provide the following changes to the erosion control plan: note the stabilization method to be used with the seeding restoration, add a note to sweep tracked sediment from the roadway at the end of each workday, add a note stating that all erosion control will be installed prior to any soil disturbance onsite.

#### **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 Not Applicable to Permit

*The proposed project lies adjacent to a Manage 1 wetland. However, the property was not subdivided, or subject to a new primary use requiring rezoning, conditional use permit, special-use permit, or variance on or after April 9, 2007.*

#### **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**

Under section 7.2, 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

*No fill is proposed within the 100-year flood elevation, but the increase in impervious area on the property will alter stormwater flows at the property boundary (within the public-waters wetland on the site), triggering the requirements of Rule 7.0.*

Because no fill is proposed, subsection 7.3.1 does not impose requirements on the project.

Under 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 of a constructed basin. In addition, no stormwater management facility may be constructed at an elevation that brings an adjacent permanent building into noncompliance with this standard.

*The following 100-year HWL was calculated using the hydrocad model from BCWD permit 22-13. The addition low floor elevation is more than one foot above the EOF of the existing rain garden, therefore, Rule 7.3.2 is met.*

**Table 2 - Freeboard Requirement Summary**

<i>Stormwater Facility</i>	<i>EOF</i>	<i>100-Year HWL</i>	<i>Allowable Low Floor</i>	<i>Lowest Floor</i>
Rain Garden	901.94	901.56	902.94	904.3

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.

*Stormwater rate and water quality will not be altered at the property boundary as a result of the project. The proposed project will result in an additional 720 cubic feet of stormwater volume discharging to Public Waters Wetland 82-309W, then conveyed to Long Lake for the 100-year 24-hour event. The volume increase was reviewed using the BCWD hydrologic and hydraulic model and found no change in water level or flow rate at the wetland or Long Lake. Therefore, the BCWD Engineer finds that this project will have no unreasonable impact on upstream or downstream landowners, nor will the project adversely affect flood risk, basin or channel stability, groundwater hydrology, stream baseflow, water quality, or aquatic or riparian habitat.*

**Rule 8.0—FEES**

Fees for this project as outlined below:

- 1. Stormwater management fee \$3,000
- 2. Erosion control fee for grading \$1,000
- **TOTAL FEES** **\$4,000**

**Rule 9.0—FINANCIAL ASSURANCES**

Financial assurances for this project are as outlined below:

- 1. Grading or Alteration (0.03 acres disturbed x \$2,000/acre) \$0
- 2. Stormwater Management Facilities (125% of facility cost) \$0
- **TOTAL FINANCIAL ASSURANCES** **\$0**  
**(\$5,000 Minimum Performance Financial Assurance)**

**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 circumstances unique to the property under consideration. The Board of Managers may grant variances where it is demonstrated that such action will be in 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.*

The permit applicant has submitted a request for a variance from the following rule provisions:

1. *BCWD Rule 2.4.1(b)(i & ii) states, "Within the Diversion Structure Subwatershed... an applicant must submit a stormwater-management plan providing: (ii) Retention onsite of 1.1inches of stormwater volume from the regulated impervious surface."*

*As noted above, the applicant does not propose to construct a new stormwater facility to manage the additional runoff from the added impervious surface; rather the applicant is requesting that BCWD approve a variance based on excess management capacity provided by the rain garden constructed in 2022 beyond what was required under BCWD Permit 22-13.*

- *Using a gutter and tile system, all water from the pool area, patio decks, and approximately 45% of the home were directed to the raingarden for treatment. This exceeded the requirements equating to 623 cf routed to the rain garden.*

*The rain garden built in 2022 needed to manage 158 cf of stormwater runoff to comply with the BCWD volume-control requirement. The applicant oversized the rain garden to manage 340 cf of stormwater runoff and directed 45% of the house roof to the rain garden, providing management of 191 cf beyond what was required. The over-treatment provided exceeds the required 110 cf stormwater runoff of the proposed addition. The runoff from the proposed addition drains to the wetland on the southeast corner of the property by way of the roadside ditch on the southwest side of the property.*

*The BCWD engineer concurs that the oversized rain garden provides the required treatment volume of the proposed home addition. In addition, the rain garden has been overtreating stormwater runoff from the roof of the house since 2022. Review of the previous 22-13 permit provided documentation that infiltration pre-treatment was provided for the rain garden by a vegetated filter strip removing more than 50 percent of sediment loads. Additionally, a stormwater declaration was filed with the county in 2022.*

#### **RECOMMENDED CONDITIONS OF THE PERMIT:**

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. Address all erosion control requirements (Condition 3-1 & 3-2).
2. Replenish the Permit fee deposit to \$4,000 (BCWD Rule 8.0). 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.

#### **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)