memo

Project Name |	BCWD Permit 25-29 Sunrise Park Trail	**Date** |	March 3, 2026
To / Contact info |	BCWD Board of Managers		
Cc / Contact info |	Dillon McClung; Reabar Abdullah, PE / City of Stillwater		
Cc / Contact info |	Karen Kill, Administrator / BCWD		
From / Contact info |	Paul Nation, PE / EOR		
Regarding |	Permit Application No. 25-29 Engineer's Report		

The following review of the above-captioned 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: City of Stillwater
Permit Submittal Date: *2/3/2026*
Completeness Determination: *2/20/2026*
Board Action Required By: *4/3/2026*
Review based on BCWD Rules effective April 1, 2020
Recommendation: Approve with Conditions

Suggested motion: Move to approve the City of Stillwater permit application 25-29 with the conditions and stipulations stated in the engineer's report.

GENERAL COMMENTS

Existing Conditions: The project site includes three adjacent parcels owned by the City of Stillwater with a total area of 19.07 acres (Figure 1). Existing impervious on the site, known as Sunrise Park, totals 2.08 acres including a portion of Stillwater Blvd and associated sidewalk, a gravel parking area for an onsite soccer field with access from Stillwater Blvd, and a driveway, maintenance building, and playground with access from Sunrise Ave. Of the 0.54 ac proposed to be disturbed by the project, 0.43 ac discharges south to a Manage 1 wetland on the site, while 0.11 ac discharges north to the rear yards of adjacent homes on Knollwood Ct. From there, runoff flows southeast through a swale behind these homes, into the storm sewer system, and ultimately into the same onsite wetland. This wetland has an outlet into storm sewer along Stillwater Blvd, eventually draining to Long Lake.

Proposed Conditions: This project proposes adding an 8-foot-wide paved walking trail from the playground east to Stillwater boulevard (Figure 2). Three swales with check dams and an infiltration basin will treat stormwater runoff from the new trail. The new trail will add 0.15 ac of impervious surface and does not disturb any of the existing 2.08 ac of impervious surfaces. This results in a total proposed impervious area of 2.23 ac (12% of site area).

Recommendation: The BCWD engineer recommends that the board approve the application with the conditions and stipulations outlined in the report.

Figure 1. Site Location

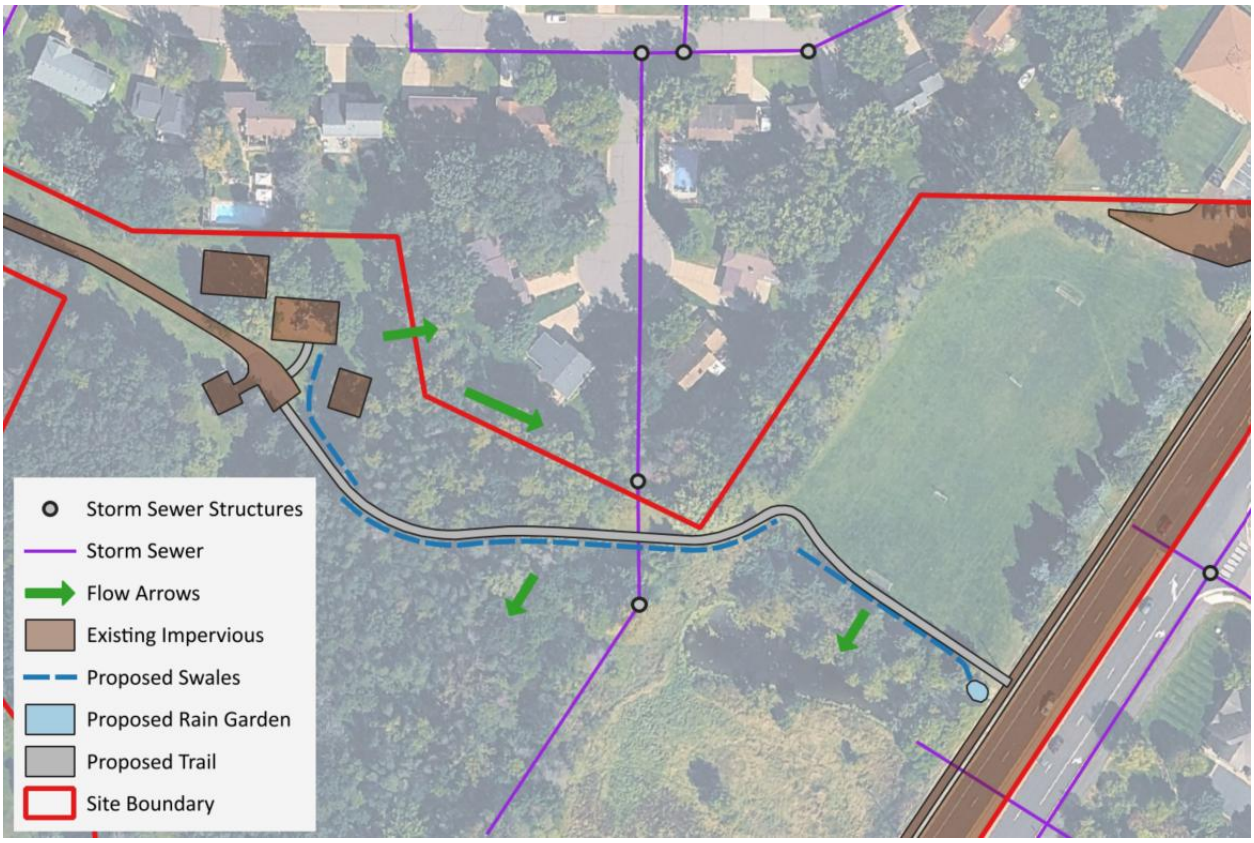

Figure 2. Site Plan

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, aggregated with existing impervious surface on the site, it creates more than 10,000 square feet of impervious surface. The site is located within the Diversion Structure Subwatershed, so the stormwater criteria in subsection 2.4.1(b) apply.

As noted above, the existing site has a total of 0.32 acres of impervious surface. The proposed site will have a total of 0.47 acres of impervious area. This city does not propose to disturb any of the original impervious area. Under 2.2(b)(ii) since the proposed activity will disturb less than 50 percent of existing impervious surface on the site, the criteria will apply only to reconstructed and net additional impervious surface and disturbed areas on the project site.

The stormwater management plan for the project includes:

- *Swales – Three swales will collect runoff directly from the new trail. These swales will have 3" check dams throughout their length to retain stormwater for infiltration.*
- *Rain garden – A shallow (3" deep) rain garden at the eastern end of the trail will provide additional treatment for the eastern-most swale.*

To save on project costs, the city chose not to collect soil borings in the locations of the proposed infiltration practices. The city designed the swales and rain garden with a 3" depth suitable for hydrologic soil group D soils (0.06 in/hr infiltration rate). While this choice should not set a precedent for future permit applicants, the BCWD engineer agrees that the design is conservative and would result in excess treatment if the soils are better than expected, and will meet applicable BCWD criteria (as discussed below) even if the soils are indeed predominantly hydrologic group D.

Runoff leaves the site at the following two discharge points. Drainage areas do not change under proposed conditions.

- *"North" – 0.11 ac of disturbed area discharge north to adjacent private property. From there, runoff flows east through a swale before entering a catch basin and flowing via storm sewer to the onsite wetland.*
- *"South" – 0.43 ac of disturbed area discharge south through wooded park land before reaching the onsite wetland.*

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

The stormwater management plan developed for the site was evaluated using a HydroCAD model of existing and post-development site conditions. Tables 1 and 2 show a comparison of the modeled peak flow rates to each discharge point.

Table 1 - Peak Discharge Rate "North"

Event	*Existing Discharge Rate (cfs)*	*Proposed Discharge Rate (cfs)*
2-year (2.80")	0.3	0.2
10-year (4.17")	0.6	0.6
100-year (7.20")	1.24	1.26*

**This 0.02 cfs increase is within the inherent uncertainty the modeling methods and should not be considered non-compliant.*

Table 2 - Peak Discharge Rate "South"

Event	*Existing Runoff Rate (cfs)*	*Proposed Runoff Rate (cfs)*
2-year (2.80")	0.6	0.3
10-year (4.17")	1.2	1.1
100-year (7.20")	2.7	2.6

Volume Control

According to BCWD Rule 2.4.1(b)(ii), 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 Met

To meet the BCWD volume control requirement the applicant proposes three swales and a rain garden. Table 3 shows a summary of the required and provided stormwater volume.

Table 3 – Volume Control Summary

Regulated Impervious Surface Area (ft^2)	*Required Volume (cf)*	*Provided Volume (cf)*
6,346	582	631

Lake/Wetland Bounce

According to BCWD Rule 2.4.1(b)(iii), an applicant must submit a stormwater-management plan providing no increase in 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

The onsite Manage 1 wetland has a permitted bounce of pre-development bounce plus 0.5 foot for all storm events. To demonstrate compliance, the increase in stormwater volume for all storms was divided by the surface area of the wetland (2.8 ac) to calculate the increase in bounce.

$$Change\ in\ bounce\ (ft) = \frac{Increase\ in\ year\ runoff\ volume\ (acre-ft)}{Wetland\ surface\ area\ (acres)}$$

The downstream high-water level summary shown below in Table 4 demonstrates that the increase in bounce meets the BCWD rules.

Table 4 - Change in Bounce

Storm Event	*Pre-development Runoff Volume (ac-ft)*	*Proposed Runoff Volume (ac-ft)*	*Change in bounce (ft)*
2-year (2.80")	0.04	0.04	0.00
10-year (4.17")	0.08	0.08	0.00
100-year (7.20")	0.18	0.19	0.00

The applicant provided a HydroCAD model to demonstrate compliance with Rule 2.4.1(b)(iii). A comparison of runoff durations in Table 5 demonstrates that the timing of runoff delivery from the site to the wetland has minimal change (±1 hour) from existing to post-development conditions. Because of this, and no changes to wetland bounce, duration of inundation will be largely unchanged, meeting the allowable inundation periods of existing plus 1 day (2-year storm) and existing plus 2 days (10-year storm or larger) for Manage 1 wetlands.

Table 5 – Runoff Duration

	2-year		*10-year*		*100-year*	
	Pre-development	*Proposed*	*Pre-development*	*Proposed*	*Pre-development*	*Proposed*
Runoff Duration (hr)	10	9	12	12	15	16
Change in Duration (hr)	-1		0		+1	

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 applicant followed guidance from the MN Stormwater Manual for sizing of pre-treatment filter strips to remove sediment loading to the proposed swales. The design calls for two-foot-wide pretreatment filter strips between the trail and all swales. Depending on the sediment particle size, the filter strips will remove between 79 and 100% of sediment load.

Rule 2.0 Conditions:

2-1. Provide BCWD with the final civil plan set prior to start of construction. (BCWD 2.7.9)

2-2. The stormwater management facilities to be constructed for the project must be added to the inventory of those maintained under the March 8, 2010, programmatic maintenance agreement between the City of Stillwater and BCWD (BCWD Rule 2.6).

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 greater than 5,000 square feet of vegetative cover are proposed to be disturbed.

☒ Rule Requirements Met

The erosion and sediment control plan includes:

- *Silt fence downstream of proposed work*
- *Straw erosion control matting on swales as needed*
- *Seeding after completion of proposed work*

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

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. 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 Not Applicable to Permit. *The site parcels are not being subdivided.*

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

According to Rule 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. The proposed project triggers this rule due to altering stormwater flow (increasing flow volume) at the property boundary.

☒ Rule Requirements Met

All proposed grading is located outside of the floodplain for the onsite wetland.

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.

There are no buildings adjacent to the proposed rain garden.

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 noted above under the Lake/Wetland Bounce section, the project will not increase high-water levels for the onsite wetland, and therefore, will not adversely affect flood risk for any downstream properties.

Rule 8.0—FEES

As the City of Stillwater is a government entity, the applicant is exempt from fees.

Rule 9.0—FINANCIAL ASSURANCES

As the City of Stillwater is a government entity, the applicant is exempt from financial assurances.

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 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 stormwater management requirements (Conditions 2-1 to 2-2).
2. Address all erosion control requirements (Condition 3-1).

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. Provide the District with as-built record drawings showing that the completed grading and stormwater facilities conform to the grading plan.
3. Provide contact information for the party responsible for long-term maintenance of proposed stormwater facilities.