



Memorandum

To: Bassett Creek Watershed Management Commission (BCWMC)
From: Barr Engineering Co. (Barr)
Subject: Item 4E: Currie Commons – Minneapolis, MN
BCWMC December 17, 2020 Meeting Agenda
Date: December 9, 2020
Project: 23270051 2020 2233

4E Currie Commons – Minneapolis, MN BCWMC 2020-28

Summary:

Proposed Work: 187-unit residential housing, second level parking deck, surface parking lot, and utilities including stormwater management

Basis for Review at Commission Meeting: Cut and fill in the floodplain

Impervious Surface Area: Increase 1.29 acres (increase 0.04 acres relative to historical site use)

Recommendation: Conditional Approval

General Project Information

The proposed project is in the Bassett Creek Main Stem subwatershed at 187 Humboldt Avenue North in Minneapolis. The proposed project includes construction of a multi-story residential building with 187 units, a second level parking deck, a surface parking lot, a stormwater management system, and utility improvements resulting in 1.66 acres of grading (disturbance). The proposed project creates 1.29 acres of new impervious surfaces, from 0 acres (existing) to 1.29 acres (proposed). An additional 0.27 acres of work occurs in the right of way of adjacent streets (Irving Avenue North, Currie Avenue West, and Humboldt Avenue North) to facilitate utility, sidewalk, and curb work.

Floodplain

The proposed project includes work in the Bassett Creek 1% (base flood elevation, 100-year) floodplain. The October 2019 BCWMC Requirements for Improvements and Development Proposals (Requirements) document states that projects within the floodplain must maintain no net loss in floodplain storage and no increase in flood level at any point along the trunk system (managed to at least a precision of 0.00 feet). The 1% (base flood elevation, 100-year) floodplain elevation of Bassett Creek at this location is 811.2 feet NAVD88.

The proposed project will result in a net increase in floodplain storage of approximately 169 cubic yards and does not result in an increase in flood level at any point along the trunk system.

The Requirements document also states that minimum building elevations (lowest) floor of new and redeveloped structures, including parking ramps/garages, must be at least 2.0 feet above the 100-year flood level. The proposed building and second level of parking are at least 2.0 feet above the 100-year

flood level. The ground level parking is approximately 6 feet below the 100-year flood elevation and was reviewed as a surface parking lot, which is an allowable land use in the floodplain. Applicable elevations for the proposed development are listed in Table 1.

Table 1: Applicable Elevations for the Proposed Development

Feature	Elevation (feet, NAVD88)
100-year Floodplain	811.2
10-year Flood Level (for reference, not regulated)	806.9
2-year Flood Level (for reference, not regulated)	805.7
Proposed Building Finished Floor Elevation (FFE)	814.0
Proposed Tuck-Under (Surface) Parking Lot	Varies: 805.0 – 808.0
Proposed Tuck-Under (Surface) Parking Lot Access Driveway	~ 808.0
Proposed Parking Ramp (Above Tuck-Under (Surface) Parking Lot)	~819.0
Proposed Parking Ramp (Above Tuck-Under (Surface) Parking Lot) Access Driveway	~ 810.0

Since this site provides parking within the 100-year floodplain, the owner indicated that an emergency plan will be developed to protect the users and the infrastructure during flood events. The owner is currently evaluating the most effective emergency flood notification and protection plan for this project.

Wetlands

The proposed project does not involve work in or adjacent to wetlands.

Rate Control

The October 2019 BCWMC Requirements document states that projects that create more than one (1) acre of new or fully reconstructed impervious area *must manage stormwater such that peak flow rates leaving the site are equal to or less than the existing rate leaving the site for the 2-, 10-, and 100-year events, based on Atlas 14 precipitation amounts and using a nested 24-hour rainfall distribution.*

In existing conditions, stormwater runoff generally leaves the site in three directions: to the west to the gutter line and storm sewer in Irving Avenue North, to the north to the gutter line and storm sewer in Currie Avenue West, and to the southeast to Humboldt Avenue North right of way, which is assumed to drain or be conveyed north to storm sewer in Currie Avenue West and ultimately to Bassett Creek.

In proposed conditions, stormwater will continue to generally leave the site in the same three directions. A combined underground and surface filtration system is proposed to provide detention and rate control for a majority of the site runoff. The outlet for the filtration system routes flows to the storm sewer in Currie Avenue West, which ultimately discharges to Bassett Creek.

Table 2 summarizes the existing and proposed peak discharge rates for the proposed project.

Table 2: Existing and Proposed Peak Discharge Rates

Runoff Direction	Area (acres)		2-Year Peak (cfs)		10-Year Peak (cfs)		100-Year Peak (cfs)	
	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed
To West	0.07	0.17	0.3	0.6	0.4	1.0	0.8	1.9
To North	1.87	1.77	3.0	1.0	5.7	1.4	12.1	5.6
To East			2.9	0.5	5.5	1.1	11.8	5.2
Total ¹	1.94	1.94	3.1	1.6	5.8	2.4	12.4	6.0

¹ Total peak discharge rates are not a direct sum of the peak discharge rates of inflows as drainage to the east is routed to the north and then summed with the discharge from the west. Additional discrepancies may be due to rounding or the timing of the peak discharge rates for each inflow.

Although there is a slight increase in rates to the west to Irving Avenue North, overall the stormwater management system provides an overall decrease in runoff rates leaving the site, which meets the BCWMC requirement for overall rate control.

Water Quality

The BCWMC Requirements document states that projects on sites without restrictions *that create one or more acres of new and/or fully reconstructed impervious surfaces shall capture and retain on-site 1.1 inches of runoff from the new and/or fully reconstructed impervious surfaces*. If the applicant is unable to achieve the performance goals due to site restrictions, the MIDS flexible treatment options approach shall be used following the MIDS design sequence flow chart.

The proposed project creates 1.29 acres of new and/or fully reconstructed impervious area on the parcel. Infiltration is not feasible on the site due to project site constraints, including low-infiltrating soils, contaminated soils, and high groundwater. Therefore, the applicant followed the Design Sequence Flow Chart and determined that the project must meet Flexible Treatment Option (FTO) #2. FTO #2 requires that the project provide 60% removal of total phosphorus (TP). A filtration basin that also has some underground storage components is proposed to provide stormwater treatment. The filtration basin will collect runoff from the majority of the parcel, with the exception of some areas on the west and north sides of the proposed buildings that drain into the right of way of Irving Avenue North and Currie Avenue West. Table 3 summarizes the annual TP loading and TP removal for the filtration basin and demonstrates that the proposed project meets FTO #2. The 0.27 acres of work in the street rights of way is not included in the water quality analysis. Disconnected sidewalks are exempt from water quality treatment, and the utility connections and street improvements are considered linear work.

Table 3: Summary of TP Loading, TP Removals, and TP Removal Efficiency for Proposed BMP

Drainage Area / BMP	Area (acres)	TP Loading (lbs/year)	TP Removal (lbs/year)	Percent Removal (%)
Project Parcel / Filtration Basin	1.29	2.9 ¹ (2.7 ²)	1.8 ¹ (1.7 ²)	61.9% ¹ (61.7% ²)

¹ Provided by applicant.

² Estimated by Barr based on modifications resulting from comments in Recommendation section.

Erosion and Sediment Control

The proposed project results in more than 10,000 square feet of land disturbance; therefore, the proposed project must meet the BCWMC erosion and sediment control requirements. Proposed temporary erosion

and sediment control features include a rock construction entrance, silt fence, biologs, and inlet protection. Permanent erosion and sediment control features include riprap at flared end section outlets, erosion control blanket, and stabilization with sod or seed and mulch.

Recommendation

Conditional approval based on the following comments:

1. The HydroCAD models must be revised as follows to demonstrate that the proposed project meets BCWMC rate control requirements:
 - a. On the drainage area maps, the assumed project extents is the thick, double-dashed black line. The project extents on the drainage maps (and areas in the HydroCAD models) do not appear to match the project extents on the plans and must be clarified or revised to match.
 - b. On the drainage area maps, the delineated drainage areas do not include the entire project extents and must be revised to include the entire project extents. Note: the extents of the existing and proposed drainage areas should continue to match to provide a fair comparison of existing and proposed discharge rates.
 - c. Additional documentation must be provided to support the assumed roof storage capacity.
 - d. Outlet device #4 for the filtration basin must be revised to match the plans.
 - e. An emergency overflow should be provided for the filtration basin.
2. The P8 model must be revised as follows to demonstrate that the proposed project meets BCWMC water quality goals (or flexible treatment options).
 - a. The "infiltration outlet" for the Filtration Basin device must be routed to the Currie Storm Sewer pipe device. (If this is not done, P8 treats the devices as infiltration BMPs rather than filtration BMPs).
 - b. Watershed PS-04 must be updated to match the area in the HydroCAD model and proposed drainage map.
 - c. Watershed PS-07 must be updated to match the percent imperviousness in the HydroCAD model and proposed drainage map.
3. Sheet C-801: the sediment control rock entrance detail must be modified to include a minimum wash-off berm height of 2 feet above the adjacent roadway, with maximum side slopes of 4:1, to intercept sediment-laden runoff.
4. A maintenance agreement must be established between the owner and the City of Minneapolis for the underground storage chambers and stormwater filtration basin. Note: A Proposed Operations and Maintenance Plan from Wenck to the City of Minneapolis was included in the submittal to the BCWMC, but we did not perform a detailed review of this information.
5. The BCWMC encourages the owners and/or managers of this property to develop and implement a winter deicer and chloride management plan to reduce environmental, structural,

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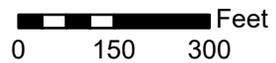
and landscaping degradation caused by the overuse of salt. More information is available at www.bassettcreekwmo.org/developer/winter-maintenance.

Administrator's note: This webpage is in development.

6. Revised plans (paper copy and final electronic files), stormwater management plan, and supporting documentation must be provided to the BCWMC Engineer for final review and approval.



-  Project Location
-  Municipality
-  BCWMC Legal Boundary
-  Major Subwatershed
-  Bassett Creek



BCWMC #2020-28
CURRIE COMMONS
Minneapolis, MN

LOCATION MAP