

Item 5B.
BCWMC
12-19-19

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engineering and environmental consultants



Memorandum

To: Bassett Creek Watershed Management Commission (BCWMC)
From: Barr Engineering Co.
Subject: Item 5B: Four Seasons Mall Redevelopment (BCWMC #2019-25) and Water Quality Project (2013 CIP NL-2) – Plymouth, MN
BCWMC December 19, 2019 Meeting Agenda
Date: December 12, 2019
Project: 23270051 2019 2201

5A Four Seasons Mall Redevelopment (BCWMC #2019-25) and Water Quality Project (2013 CIP NL-2) – Plymouth, MN

Summary:

Proposed Work: Redevelopment of the Four Seasons Mall site, above-and-beyond stormwater quality improvements, and a wetland restoration

Basis for Review at Commission Meeting: Cut and fill in the floodplain and 90% CIP review

Impervious Surface Area: Decrease 2.07

Important note: *At the time of this writing, the BCWMC Engineer was in the process of working with the Dominion engineer (Loucks) regarding the amount of the above-and-beyond water quality treatment to be provided by the project. This memo is an introduction to the project. It is likely that more specificity regarding water quality treatment will be presented at the meeting. No action approving the project is requested at this time..*

Background

At their September 2013 meeting, the BCWMC conditionally approved 90% plans for the Four Seasons Mall Area Water Quality Project (near Hwy 169 and Rockford Road in Plymouth) that included restoration of a channel upstream of the mall and creation of a stormwater pond. The project was not built due to residents' concerns with tree loss.

At their August 2016 meeting, the Commission received a presentation on the stormwater management components of a redevelopment project (named Agora) on the Four Seasons Mall site. At the time, the Commission was asked to consider providing funding (in the ballpark of \$500,000) toward stormwater management features that would go "above and beyond" pollutant removal requirements for the redevelopment. The Commission moved forward with exploring a partnership with Rock Hill Management through an agreement with the City of Plymouth and directed Commission staff to continue to gather and assess additional information for further consideration including technical and legal issues.

At their December 2016 meeting, the Commission received a presentation on four alternatives for possible stormwater management features for the redevelopment. The Commission provided conditional approval to provide funds from the BCWMC CIP budget as a financial contribution towards Alternative 4,

which would have removed an estimated 109 pounds of phosphorus above and beyond the BCWMC's requirements at the Agora development in Plymouth. Conditions of the approval included:

1. CIP project review – i.e., review at 50% and 90% plan stages.
2. Prior to the BCWMC formalizing a financial commitment, the developer must provide final drawings (i.e. final construction plans for the entire project including the wetland restoration) and supporting information (final pollutant removals and other information to confirm pollutant removal estimates) to the BCWMC Engineer for review and Commission approval. BCWMC's final financial commitment will be based on the final pollutant removal estimates.
3. Prior to formalizing a financial agreement, the BCWMC will enter into an agreement with the City of Plymouth for construction and funding of the project. Concurrently, the developer will need to enter into an agreement with the City of Plymouth regarding construction of the project and allowing construction of the wetland restoration portion of the project.
4. The BCWMC must obtain BWSR approval to substitute this new CIP project for the original Four Seasons Mall Area Water Quality Project.
5. The developer must obtain all required local, state, and federal permits for the project.
6. The developer must submit the application, fee, drawings and supporting information for the Agora redevelopment site to the BCWMC Engineer for separate review as part of the BCWMC project review program.

At its January 2017 meeting, the Commission directed the administrator and legal counsel to develop an agreement with Rock Hill Management for the Commission's consideration and on January 30, 2017, the developer's consultant submitted the Agora project for BCWMC review.

At its February 2017 meeting, the Commission conditionally approved the Agora development project as part of the BCWMC project review program. The Commission also approved an agreement with Rock Hill Management, which required that the CIP project remove at least 100 pounds of total phosphorus (TP) above-and-beyond the BCWMC requirements for the Agora development project. The Commission also approved a separate agreement with the City of Plymouth to allow the developer access to a city-owned parcel to construct the wetland restoration project and to ensure ongoing maintenance of the CIP project components. The agreements were executed later in February 2017. Barr staff coordinated with the applicant, on behalf of the Commission, from January 2017 through August 2017, and the applicant sufficiently addressed 13 of the 19 comments from the conditional approval for the Agora project.

At its August 2017 meeting, the Commission conditionally approved 90% design CIP plans for the Agora project. However, at their April 2018 meeting, Plymouth Commissioner Jim Prom informed the Commission that the Agora project had fallen through due, in part, to a change in market demand for some of the intended uses.

General Project Information

In February 2019, Loucks and Dominion informed the BCWMC Administrator and Engineer of the redevelopment plans for the Four Seasons Mall site. On November 15, 2019, Dominion and Loucks submitted a BCWMC application, plans, and a stormwater management report for review.

The proposed redevelopment project is located in the Northwood Lake subwatershed in the southwest quadrant of the TH 169 and Rockford Road interchange. The proposed project includes demolition and redevelopment of the entire parcel from a commercial strip mall to a commercial, public, and multiple-residential development, and a wetland restoration resulting in 16.6 acres of grading (disturbance). The proposed project creates 9.86 acres of fully reconstructed impervious surfaces, which results in a decrease of 2.07 acres of impervious surfaces, from 11.93 acres (existing) to 9.86 acres (proposed). Portions of the proposed project will result in a change of land use and zoning from commercial to multifamily residential or public.

This memorandum summarizes the review of the redevelopment aspects of the proposed project, including: floodplain management, wetland management, rate control requirements, erosion and sediment control requirements, water quality requirements, and above-and-beyond water quality improvements (the CIP project components).

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 in this reach is 893.1 feet NAVD88.

The proposed project will result in a net increase in floodplain storage of approximately 1.39 acre-feet (2,245 cubic yards) and does not result in an increase in flood level at any point along the trunk system.

Wetlands

The City of Plymouth is the local government unit (LGU) responsible for administering the Wetland Conservation Act; therefore, BCWMC wetland review is not required.

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.*

Under existing conditions, stormwater runoff leaves the site in three directions: surface flow north and east to North Branch Bassett Creek, surface flow west to Lancaster Lane North, and surface flow and storm sewer to an existing wetland to the south of the development property. North Branch Bassett Creek, which runs along the north and east edge of the site with intermittent flows, and storm sewer in Lancaster Lane, both also discharge into the wetland to the south of the development property.

The proposed stormwater management system includes an underground filtration system and a series of ponds to provide rate control, including: Pond WP, Basin 1P, Pond 2P, and Underground Filtration System 3P on the north end of the site; and Pond NP at the south end of the site. The underground filtration system and ponds on the north end of the site outlet to North Branch Bassett Creek. Pond NP on the south end of the site outlets through a control structure to the wetland to the south of the development

property. The proposed project also includes a diversion of low flows from North Branch Bassett Creek into Pond NP to provide water quality treatment, as part of the Four Seasons Mall Area Water Quality project (BCWMC CIP NL-2).

Table 1 and Table 2 summarize the existing conditions peak discharge rates and proposed conditions peak discharge rates, respectively, from the project area to the existing wetland to the south of the development property.

Table 1: Existing Conditions Peak Discharge Rates (From the Proposed Project Site Only)

Existing Conditions Subwatershed	Area	2-Year Peak	10-Year Peak Rate	100-Year Peak Rate
	(acres)	(cfs)	(cfs)	(cfs)
To Creek (from site)	6.52	16.28	26.07	47.93
To Lancaster Lane (from site)	1.56	3.44	6.12	12.33
To Wetland (direct from site)	9.22	21.55	33.69	60.55
Total – To Wetland (from site) ^{1,2}	17.30	39.75	63.29	115.75

¹ Total peak discharge rates may not be a direct sum of the peak discharge rates of inflows due to the timing of the peak discharge rates for each inflow.

² Additional flow and runoff is directed to the existing wetland from North Branch Bassett Creek (from the larger off-site watershed) and other direct tributary drainage areas, which are not quantified in this table.

Table 2: Proposed Conditions Peak Discharge Rates (From the Proposed Project Site Only)

Proposed Conditions Subwatershed/BMP	Area	2-Year Peak	10-Year Peak Rate	100-Year Peak Rate
	(acres)	(cfs)	(cfs)	(cfs)
To Creek (from site) ¹	7.23	8.36	15.16	38.33
To Lancaster Lane (from site)	1.61	3.70	6.34	12.33
To Wetland (direct from site)	0.24	0.49	0.93	1.95
To Wetland (from Pond NP)	8.23	8.36	14.70	27.56
To Wetland (from Creek)	N/A	2.06	9.03	27.52
Total – To Wetland (from site) ^{2,3}	17.31	11.30	25.99	59.76

¹ Runoff from this subwatershed is routed to North Branch Bassett Creek. As part of the proposed project, low flows from North Branch Bassett Creek are diverted onto the proposed project site for water quality treatment in Pond NP: South.

² Total peak discharge rates may not be a direct sum of the peak discharge rates of inflows due to the timing of the peak discharge rates for each inflow.

³ Additional runoff is directed to the wetland from North Branch Bassett Creek (from the larger off-site watershed) and other direct tributary drainage area, which is not quantified in this table.

Table 1 and 2 show that the stormwater management system for the proposed redevelopment project meets the BCWMC requirement for rate control.

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 rock construction entrances, silt fence, and storm drain inlet protection. Permanent erosion and sediment control features include erosion control blanket and stabilization with sod or seed and mulch.

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 redevelopment project creates 9.86 acres of fully reconstructed impervious area. Flexible Treatment Option (FTO) #2 was selected for the proposed project due to the presence of tight clay soils that are not conducive to infiltration. FTO #2 requires that the project provide 60% removal of total phosphorus (TP).







As discussed in the Background section above, the Commission conditionally approved a financial contribution towards a previous submittal for redevelopment of the Four Seasons Mall site for providing stormwater treatment, specifically TP removal, “above and beyond” what is required by the BCWMC.

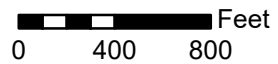
The proposed BMPs on the development site will treat stormwater from the site and off-site areas with a filtration basin, an underground filtration system, two smaller stormwater ponds, and a large stormwater pond with an iron-enhanced sand filter (IESF) bench.

At the time of this writing, the Dominion engineer (Loucks) was working on the above-and-beyond water quality treatment to be provided by the project. It is likely that more specificity regarding water quality treatment will be presented at the meeting.



Project Location

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



BCWMC #2019-25
 FOUR SEASONS
 MALL REDEVELOPMENT
 Southeast quadrant of
 TH169 and Rockford Road
 Plymouth, MN
LOCATION MAP