

## Memorandum

**To:** Bassett Creek Watershed Management Commission  
**From:** Barr Engineering Co.  
**Subject:** Item 4E – Winnetka Commons – New Hope  
BCWMC September 18, 2014 Meeting Agenda  
**Date:** September 10, 2014  
**Project:** 23270051 2014 2021

### 4E Winnetka Commons: New Hope

#### Summary:

**Proposed Work:** Demolition of an existing building, construction of a new building

**Basis for Commission Review:** Use of underground storage for water quality treatment

**Change in Impervious Surface:** Increase 6,500 square feet

**Recommendation:** Conditional Approval

#### General Background & Comments

The proposed commercial development will be located on the southeast corner of the Winnetka Avenue and 36<sup>th</sup> Avenue North intersection on the 4.9 acre parcel. The proposed redevelopment includes site grading and construction of a retail building with associated parking. Approximately 0.8 acres will be graded as part of this project and there will be an increase in impervious surface of approximately 6,500 square feet. Proposed BMPs include underground stormwater storage. The site is in the North Branch and Bassett Creek Park Pond Subwatershed.

Since the area to be graded is greater than 10,000 square feet, the proposed project must meet the BCWMC erosion control requirements. Because the parcel is a redevelopment on a parcel of less than 5 acres, the proposed project is exempt from the BCWMC Level 1 Standards. The project must meet the BCWMC Nondegradation Policy for redevelopment projects because the parcel size is between 1 and 5 acres and the added impervious surface area is greater than 2,000 square feet.

#### Floodplain

N.A.

#### Wetlands

N.A.

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**Page:** 2  
**Project:** 23270051 2014 2021

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## **Stormwater Management**

Under existing conditions, the runoff from the site discharges to a stormwater pond at the northwest corner of the site which drains to the storm sewer in 36<sup>th</sup> Avenue North. Under proposed conditions, the pond will be filled and an underground proprietary StormTrap retention/detention system will be installed. The StormTrap system includes a series of 72" high reinforced concrete units that forms an underground vault beneath the parking area. The proposed stormwater management system will provide rate control such that the proposed discharge rates from the site will not exceed existing discharge rates for the 2-, 5-, 10-, and 100-year storm events.

## **Water Quality Management**

Currently, the stormwater pond provides limited water quality benefits due to its minimal dead storage and average depth. Proposed permanent BMPs include the referenced StormTrap system including a grit chamber and a skimmer at the outlet. Water quality requirements are proposed to be met by setting the invert of the underground StormTrap system 6" below the outlet invert and using an interior wall to prevent short circuiting of the system. The grit chamber and skimmer at the outlet will capture floatables and sediment before water leaves the system.

## **Erosion and Sediment Control**

Temporary erosion control features include silt fence, inlet protection around all storm sewer inlets, a rock construction entrance, and street sweeping.

## **Recommendation**

Conditional approval based on the following comments:

1. The following erosion control comments must be added to the plans:
  - No construction access shall be allowed from the driveway at the southwest corner of the disturbed area.
  - Silt fence along the western edge of the property should be shown as continuous.
  - Silt fences shall be supported by sturdy metal or wooden posts at intervals of 4 feet or less.
  - Cut off berm of rock construction entrances must have a minimum height of 2 feet above the adjacent roadway and maximum side slopes of 4:1.
  - Soils tracked from the site by motor vehicles must be cleaned daily (or more frequently, as necessary) from paved roadway surfaces throughout the duration of construction.

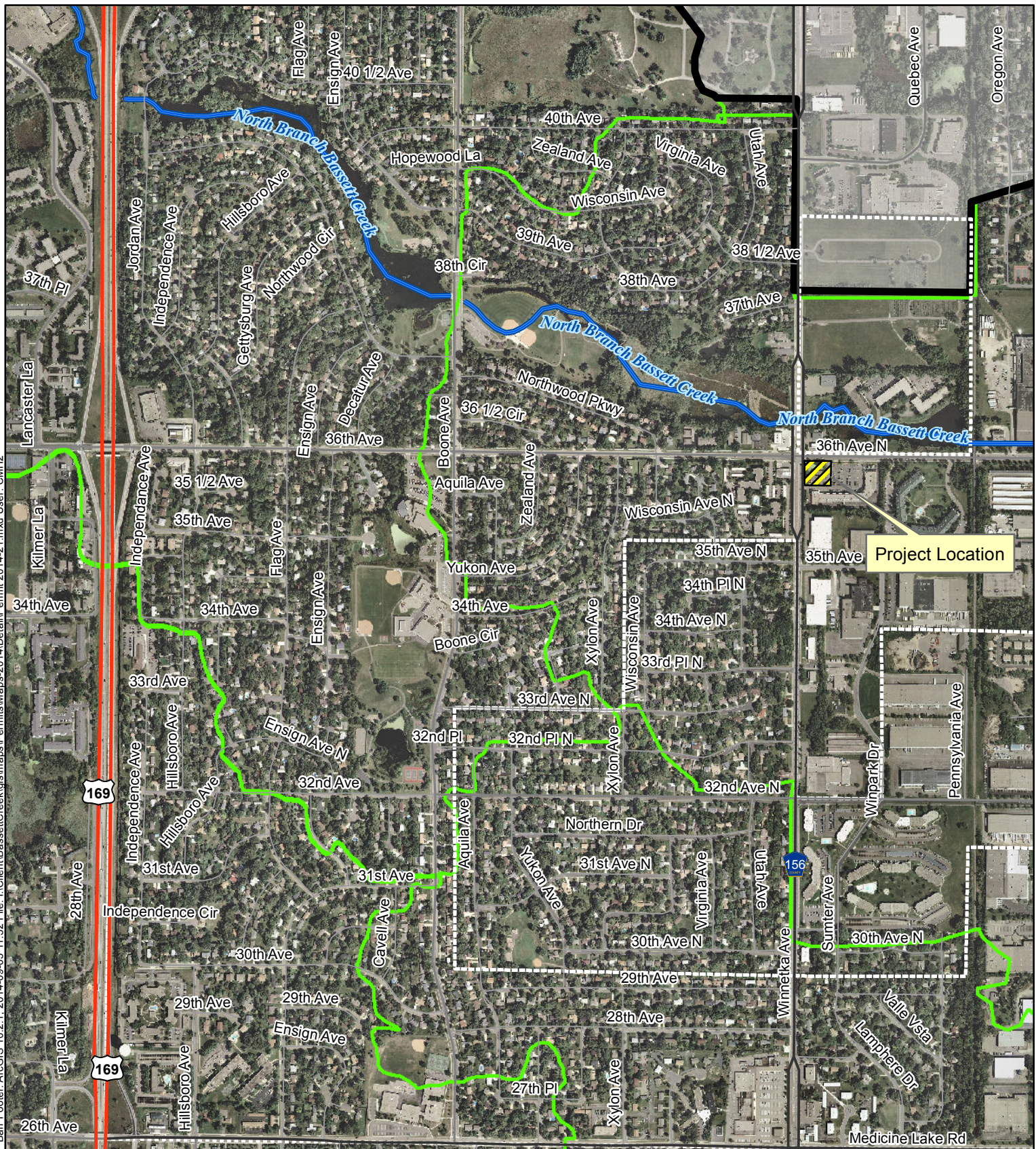
- Temporary vegetative cover must be spread at 1.5 times the usual rate per acre. If temporary cover is to remain in place beyond the present growing season, two-thirds of the seed mix shall be composed of perennial grasses.
  - Permanently seeded areas shall be either mulched or covered by fibrous blankets to protect seeds and limit erosion.
2. Details for the StormTrap system, grit chamber and skimmer must be provided on the plans.
  3. Applicant shall review the BCWMC's *Requirements for Improvements and Development Proposals - Section 6.3.2 Underground Wet Vault Design and Maintenance Requirements* and incorporate the following and other appropriate design recommendations.
    - It is recommended to increase the permanent pool average depth to be  $\geq 4$  feet, with a maximum depth of  $\leq 10$  feet, to improve removal efficiency.
    - To the extent practicable, the inlet to the wet vault shall be submerged with the inlet pipe invert a minimum of 3 feet from the vault bottom and the top of the inlet pipe shall be submerged at least 1 foot. The submerged inlet is intended to dissipate energy of the incoming flow. The distance from the bottom is intended to minimize resuspension of settled sediment.
    - Operational access to the outlet must be provided to the finished ground surface.
    - Adequate vents in the vault or other provisions must be included to ensure the water in the vault does not become "stagnant" resulting in anoxic conditions and the release of phosphorus in the water column.
    - Pretreatment such as grit chambers, swales with check dams, filter strips, or sediment forebays/traps should be considered, at least at the primary inlet, to extend the maintenance frequency of the wet vault.
  4. Sediment that has accumulated in the underground storage must be removed after the site and tributary area has been graded and stabilized.
  5. The existing and proposed water quality treatment at the site should be clarified by reporting pounds of TSS and TP on an annual basis for both the inflow and outflow from the site. The size and impervious area of the contributing drainage areas should also be reported.
  6. The sizing of the system should be based on meeting the nondegradation requirements of the BCWMC for the redevelopment; however, the entire drainage area to the underground system should be considered to prevent the system from being overloaded and flushed.

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**Page:** 4  
**Project:** 23270051 2014 2021

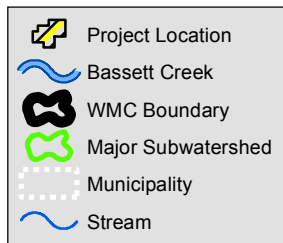
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7. A maintenance agreement for the underground retention/detention system should be established between the applicant and the City of New Hope.
8. Revised plans must be submitted to the BCWMC Engineer for review and approval.

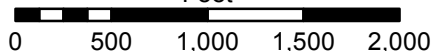




Imagery Source: Aerial Express (2009)



Feet



**LOCATION MAP  
APPLICATION 2014-21  
Winnetka Commons  
New Hope, MN**





1-87-STORMTRAP

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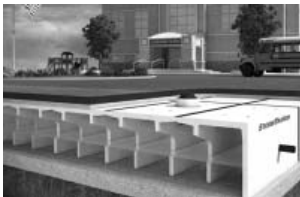
## Underground Stormwater Detention Products

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### Features

- A structure that exceeds HS-20 loading with 9" of cover. This is ideal for projects with a limited rim to invert.
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- An option for watertight systems.
- Lifetime Warranty

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U.S. Patent Numbers: 6, 991, 402 B2; 7, 160, 058 B2; 7, 344, 335 | [Login](#)