Memorandum

To: Mr. Nathanial Strosberg

Date: July 1, 2015

Project #: 13050.00

From: Curtis Quitzau, P.E.
Senior Project Manager

Re: The Lanterns at Warren Woods SRC Special Permit
Stormwater Management

This memorandum has been prepared to satisfy, in part, the Special Permit application filing requirements pertaining to surface water drainage and stormwater management pursuant to §9.4.4.5 of the Ashland Zoning Ordinance. Since it is understood that technical review of the stormwater management report prepared for the project will be conducted by the Conservation Commission in association with necessary Notice of Intent and Stormwater Management Permit applications that will be filed by the Project Proponent, this brief memo is provided to give the Planning Board an overview summary of the proposed drainage collection and stormwater management system for the project.

At a very rudimentary level the objectives of the proposed stormwater collection and management system are:

1. To effectively and efficiently collect and convey surface water runoff from pavements and roofs to prevent puddles and property damage on and off the project site ;
2. To treat the collected water in order to improve water quality before discharging to receiving ground and surface waters;
3. To manage the volume and rate of runoff from the site to prevent flooding and erosion of neighboring properties and receiving water bodies downstream or down gradient of the project site.
4. To implement best management practices (BMP's) and utilize low impact development (LID) techniques to achieve the above in consideration of the existing physical properties of the site, and of the opportunities and constraints present on the project site.

The Lanterns at Warren Woods includes a comprehensive stormwater management system that will fully satisfy the objectives noted above, and will meet both the Massachusetts DEP Stormwater Management Standards and the Ashland Stormwater Rules and Regulations.

Existing Conditions

The Site is heavily wooded with three bordering vegetated wetlands located in the southern portion of the site. A large grassed field is located in the southwest corner; and there are an existing driveway, parking lot, and remnants of razed buildings immediately north of the large field. Surface water not draining toward the three wetlands flows overland off site into the existing municipal systems at the neighboring Prospect Heights, Chestnut Street and Eliot Street.

101 Walnut Street
PO Box 9151
Watertown, MA 02472
P 617.924.1770

Collection System

A proposed gravity collection system of catch basins, manholes and drainage piping is shown on the site drawings (Grading and Drainage Plans) along with proposed pipe sizes and invert elevations. Generally, roof down spouts will discharge overland or will be collected in a smaller diameter pipes and will be connected to the collection system in the streets. Stormwater will be conveyed to one of four stormwater management basins designed to provide water quality improvements, runoff volume storage, peak discharge rate mitigation, and eventual release.

Water Quality

Pre-treatment of runoff from pavements will start with catch basins equipped with deep sumps to collect heavy particulates such as sands that wash off the pavement during rain events; and hooded pipe outlets to contain oils and floating debris within the structure. Discharge from the proposed collection system will first pass through a sediment forebay before draining into gravel wetland treatment cells within each stormwater basin. The gravel wetland is a best management practice for removal of suspended solids and pollutants such as nitrogen and phosphorus.

Discharge Control

The site presently contributes runoff toward three bordering vegetated wetlands on the site, as well as, toward existing municipal drainage systems in Prospect Heights Road to the east, toward Chestnut Street to the west and toward Eliot Street to the South. Stormwater discharges to these areas will be maintained, although contributing flows toward the municipal drainage systems in Prospect Heights, Eliot Street and Chestnut Street will be considerably less than they are today.

Each stormwater basin has an outlet control structure and/or stone overflow weir designed specifically to meter the water out of the basin at rates that mimic or reduce existing rates for small and large storm events. Each basin is designed to fill and detain water while constantly and slowly releasing water for all storms up to and including the 100-year storm frequency. The basins provide opportunity for water to infiltrate into the underlying soils, although little infiltration is anticipated due to the nature of the soils found throughout the project site. Details of the gravel wetlands, stone overflow weirs and outlet control structures are provide in the site plans.

A detention basin proposed for the northeast corner of the site has been designed solely to receive water from roof tops and contributing landscaped areas. Water released from this basin will be the only discharge from the project oriented toward Prospect Heights. Discharge will be released toward the 30' undisturbed perimeter buffer and will follow the flow path that exists today.

DEP Stormwater Standards

MaDEP Stormwater Management regulations identify ten performance standards that must be met for new projects. The standards articulate in much greater detail the design objectives briefly described earlier in this memo; and to the extent applicable to the project, the stormwater design shown on the site plans will meet or exceed the standards including those addressing total suspended solids and pollutant removal, discharge rates, annual groundwater recharge, and water supply protection.

The applicant is committed to adherence with current local and State regulations that require comprehensive Operation and Maintenance (O&M) plans for all components of the drainage system to ensure proper long term functioning of the drainage system.