COMPREHENSIVE
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Bolton, MA 01740
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April 14, 2025

Robert Moore, Conservation Agent
Haverhill Conservation Commission
4 Summer Street, City Hall Room 300
Haverhill, MA 01830

Re: Peer Review Services
85 Water Street
Haverhill, MA

Dear Mr. Moore:

As requested by the City of Haverhill, CEI has completed a technical review of the materials and information listed below for the proposed development project located at 85 Water Street in Haverhill, MA. Our review focuses on elements of the proposed project that pertain to the stormwater management design, based on the following information furnished to the Conservation Commission:

a. Stormwater Management Report, dated March 7, 2025, prepared by The Morin-Cameron Group, Inc.;

b. NOI Report, dated March 13, 2025, prepared by LEC Environmental Consultants;

c. Site Plans, dated March 7, 2025, prepared by The Morin-Cameron Group, Inc.

The proposed redevelopment project includes the construction of a 113-unit, multi-family building with grading and stormwater best management practices. Portions of the proposed activities are located within the 200- foot Riverfront Area and within Bordering Land Subject to Flooding, and the 100-foot Buffer Zone to Bank/Mean Annual High Water Line to the Merrimack River.

Stormwater management features include deep sump catch basins, a hydrodynamic separator, a vegetated filter strip, and an infiltration system to collect and treat post-development stormwater runoff. Soils at the Site are primarily classified as urban fill.

CEI offers the following comments based on our review of the design drawings and NOI information listed above.

Standard 1: No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

1. CEI is concerned that the drop from the vegetated filter strip into the bioretention area will cause erosion and reduce viability of vegetation within the bioretention area, reducing its effectiveness. Please show that flow over the retaining wall will not cause erosion within the bioretention basin.

2. Provide calculations that the flow over the riprap spill way will not cause erosion along the grass slope downstream.
3. It appears that large portions of PS-1 will not be caught by catch basins due to the proposed grading and may cause erosion due to long and steep flow paths. Please consider adding additional drainage structures to capture this area.
4. CB3 is proposed in the middle of the driveway to Wall Street and may not catch runoff due to the grading around its location. Please review the grading and location for the catch basin to ensure it is capturing all runoff from PS-4 that may drain towards the driveway.

Standard is not met.

Standard 2: Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.

The project proposes an infiltration system and reduction in impervious areas to attenuate peak discharge rates. The post-development peak discharge rates are at or below existing discharge rates.

1. HydroCAD model should consider the WSEL of the Merrimack River to more accurately depict backwater effects that this system will be subject to.
2. It is unclear what the sewer flow node represents in the analysis for the 36" drainpipe. It appears to have a 1 cfs baseflow towards the drainpipe for all storm events. Please clarify what this is meant to represent.
3. It appears that subcatchment ES-2 would be collected by a catch basin and tie into the 36" pipe and should be accounted for in the calculations.
4. It appears that some areas of culvert watershed were not accounted for and should be included to give a more accurate representation of the contributing area. Please review the delineated watershed and ensure that it accounts for all the area it receives.
5. Although the culvert outlet will be below the flood elevation for the 10-year storm event this should be accounted for to determine where flooding upstream will occur and if flooding will increase upstream of the site due to the proposed connection.

Standard is not met.

Standard 3: Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures.

The development proposes the reduction of impervious surface and an infiltration basin.

1. Provide calculations that show the BMP will drain within 72 hours.
2. Soil samples are required at the actual location and soil layer where stormwater infiltration is proposed. Soil samples provided were taken from the western side of the site and were not taken where the proposed BMP is situated.

Standard is not met.

Standard 4: Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS).

The project is proposing deep sump catch basins, a hydrodynamic separator, and a subsurface infiltration system for water quality treatment.

1. CEI is concerned that with the check valve at the outlet of the WQU-1 and the WSEL in the outlet pipe during the larger storm events, that water will back up in the WQU-1 reducing effective treatment and possibly resuspending pollutants.
2. It appears the CB-3 will be under water during the 10-year storm event from the Merrimack River directing floodwaters to WQU-1. CEI is concerned that this will short circuit and damage WQU-1. Please confirm that the unit will not be damaged per the manufacturer.
3. The vegetated filter strip is only 3 feet long in the proposed conditions. Massachusetts Standards requires a length of 20 feet for credit of TSS removal and pretreatment.
4. Please provide a sitewide analysis of the proposed TSS removal. The Applicant submitted TSS removal rates for basin PS-4 and PS-5 but did not provide an average TSS removal for the entire site.
5. The calculations for phosphorus removal are incorrect. The calculations were completed assuming that the infiltration BMP was receiving 1.16 acres of runoff but according to HydroCAD, the BMP is only receiving 4,209 SF of runoff. Please compute the total site phosphorus reduction based on the currently proposed drainage patterns.

Standard is not met.

Standard 5: For Land Uses with Higher Potential Pollutant Loads (LUHPPL), source control and pollution prevention shall be implemented.

The proposed project is not classified as a LUHPPL.

Standard is met.

Standard 6: Stormwater discharges near or to any critical area require the use of specific source control and pollution prevention measures and the specific structural stormwater best management practices.

The project site is not located within any critical areas.

Standard is met.

Standard 7: Redevelopments projects are required to meet the Massachusetts Stormwater Management Standards only to the maximum extent practicable.

The project is considered redevelopment and must meet standards 2, 3, 4, 5, and 6 to the Maximum Extent Practicable (MEP).

CEI has provided comments for standards 2, 3, and 4 that should be addressed before a full assessment of Standard 7 can be completed.

Standard is not met.

Standard 8: A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities.

The applicant has provided an Erosion and Soil Control Plan.

1. The notes specify that the proposed bioretention area will be protected but this is not depicted on the plan sheet. Please include proposed protection on the plan to ensure the area is protected during construction.

Standard is not met.

Standard 9: A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.

The Applicant has provided a Long-Term Operation and Maintenance Plan for the Site.

1. Stormwater operation and maintenance plan must address snow disposal, including not disposing of snow in CFST.

Standard is not met.

Standard 10: All illicit discharges to the stormwater management system are prohibited.

The Applicant has provided an Illicit Discharge Compliance Statement.

Standard is met.

Other comments

1. Please further clarify the proposed cut and fill at each elevation for the Compensatory Flood Storage (CFST). NOI plans should show proposed fills and cuts. The CFST cannot be part of a stormwater basin.
2. Section 3.3 of the NOI report states that most of the site is located within a mapped Zone AE when it appears to be Zone X. Please clarify.

We appreciate the opportunity to provide the City with peer review services. If you have any questions or comments regarding this report, please contact me at 774-843-2007 or cosullivan@ceiengineers.com.

Sincerely,

COMPREHENSIVE ENVIRONMENTAL, INC.

Conor O'Sullivan

Conor O'Sullivan
Project Review Engineer

Matthew Lundsted, P.E.
Principal Engineer