

STORM WATER MANAGEMENT  
REPORT  
AND REDEVELOPMENT  
CHECKLIST

201 ELLIOTT STREET  
RESIDENTIAL DEVELOPMENT  
BEVERLY, MA

APRIL 10, 2015

PREPARED FOR  
BEVERLY COMMERCE PARK, L.L.P.  
200 WEST CUMMINGS PARK  
WOBURN, MA 01801

**ALAN ENGINEERING, L.L.C.**  
288 LITTLETON ROAD, SUITE 31  
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## **1.0 Site Description**

The project site is a developed 71.61 acre parcel known as the Cummings Center on Elliott Street in Beverly, MA. The area to be redeveloped is encompassed within a 1.6 acre area in the southwest corner of the site adjacent to the intersection of Elliott Street and McKay Street. The existing conditions are shown on sheet C-0 of the plan set.

### **1.1 Wetland Resource Areas**

The Bass River is located to the south of the site across Elliott Street. The top of the river bank is approximately 85 feet from the edge of the property. Since the river is contained within a culvert beneath the site, the project is not located within the Bass River riverfront area.

### **1.2 Natural Heritage and Endangered Species Program**

Mapping of Priority Habitat of Rare Species and Estimated Habitats of Rare Wildlife is available on the MassGIS web site. According to the 2008 map there are no Priority Habitats of Rare Species or Estimated Habitats of Rare Wildlife located on or adjacent to the subject property.

### **1.3 Bordering Land Subject to Flooding**

A portion of the site is located within a Special Flood Hazard Area (Zone AE). According to the Federal Emergency Management Agency Flood Insurance Rate Map (FIRM) number 250009C0417G, effective date July 16, 2014 the based flood is at elevation 10. The elevation is based on NAVD 1988.

## **2.0 Proposed Development**

The proposed project consists of a new 6-story residential building. Much of the proposed building will utilize the existing foundation, while the remainder of the building would be located within a portion of the existing paved parking area. The remainder of the existing parking area would be modified to accommodate changes in the traffic flow patterns required for the new building. Since the existing foundation will be utilized in the construction of the new building and much of the parking area will remain undisturbed only about 0.90 acres of the site will be altered by the project.

## **3.0 Storm Water Management and Redevelopment Checklist**

The project site is currently developed with buildings and impervious parking areas. A storm water drainage system is also currently in place. The existing drainage system consists of a series of catch basins connected together and ultimately discharges to the Bass River culvert located beneath the southwest corner of the site.

The construction of the building and reconfiguration of the parking area would result in a slight decrease in impervious area at the site; therefore, the site is considered a redevelopment project. As such the project needs to meet the DEP Storm Water Management Policy only to the extent practicable.

### **3.1 Standard 1 – Untreated Discharges**

Standard 1 requires that no new untreated discharges to wetlands are created and that any new discharges would not result in erosion. The existing drainage system at the site consists of a series of catch basins connected together and ultimately discharges to the Bass River culvert located beneath the southwest corner of the site.

#### **System Improvements:**

- No new storm water discharges are proposed.
- The proposed development would result in a slight decrease in impervious surfaces at the site.
- A portion of the existing paved parking area will be replaced with building reducing the amount of paved surface that requires treatment.
- All catch basins will be retrofitted with oil hoods.
- The flow through catch basin connections will be eliminated.
- Prior to discharge to the Bass River culvert nearly all runoff will be treated with a Stormceptor OSR-140 treatment unit.

### **3.2 Standard 2 – Peak Flow Control**

Standard 2 requires that post development peak discharge rates do not exceed pre development discharge rates. However; the site discharges to the Bass River which is a tidal river. Therefore mitigation of peak flow rates is not required.

### **3.3 Standard 3 – Groundwater Recharge**

Standard 3 requires that there not be a loss of annual groundwater recharge. The redevelopment of the site will result in a slight decrease in impervious areas. Therefore there will be no net loss of annual recharge at the site.

### **3.4 Standard 4 – TSS Removal**

The proposed development would result in a slight decrease in impervious surfaces at the site. A portion of the existing paved parking area will be replaced with building reducing the amount of paved surface that requires treatment. The existing drainage system will be upgraded by installing oil hoods in all catch basins in the project area. The flow through catch basin connections will be eliminated to provide better sediment removal. Prior to discharge to the Bass River culvert nearly all runoff will be treated with a Stormceptor OSR-140 treatment unit.

### **3.5 Standard 5 – Land Uses with Higher Potential Pollutant Loads**

Standard 5 regulates discharges from sites with higher potential pollutant loads. This site is not a Land Use with High Potential Pollutant Loads (LUHPPL).

### **3.6 Standard 6 – Outstanding Resource Waters**

Standard 6 regulates discharges to Outstanding Resource Waters (ORW). The site is not located within a Zone II for a public water supply, nor does runoff from the site discharge to an Outstanding Resource Water.

### **3.7 Standard 7 – Redevelopment Projects**

Standard 7 requires that redevelopment project meet the Standards only to the extent practicable.

### **3.8 Standard 8 – Erosion and Sediment Control**

Standard 8 requires a plan to control construction related impacts. Erosion control features are included in the plan set to control construction related impacts. A Storm Water Pollution Prevention Plan has also been prepared for the site.

### **3.9 Standard 9 – Long Term Operation and Maintenance**

Standard 9 requires a long term operation and maintenance plan to ensure that the storm water management system performs as designed. The Storm Water Pollution Prevention Plan includes the required operation and maintenance plan.

### **3.10 Standard 10 – Illicit Discharges**

Standard 10 prohibits any illicit discharges to the storm water management systems. There are no illicit discharges to the storm water management system proposed. A note requiring no illicit discharges is included on the Storm water Pollution Prevention Plan.

**Appendix A**

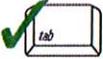
**Storm Water Report Checklist**



# Checklist for Stormwater Report

## A. Introduction

**Important:** When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the [Massachusetts Stormwater Handbook](#). The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.<sup>1</sup> This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8<sup>2</sup>
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

<sup>1</sup> The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

<sup>2</sup> For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.



# Checklist for Stormwater Report

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## B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

*Note:* Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

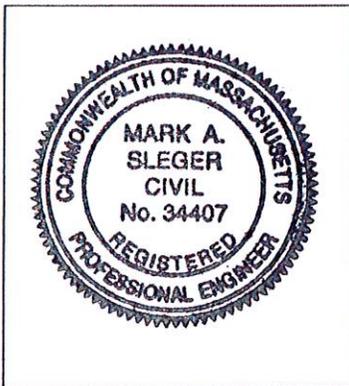
A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

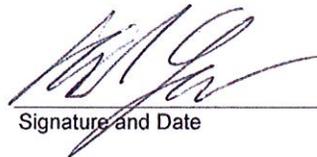
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### Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



 4/10/2015  
Signature and Date

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## Checklist

**Project Type:** Is the application for new development, redevelopment, or a mix of new and redevelopment?

- New development
- Redevelopment
- Mix of New Development and Redevelopment



# Checklist for Stormwater Report

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## Checklist (continued)

**LID Measures:** Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- No disturbance to any Wetland Resource Areas
- Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- Reduced Impervious Area (Redevelopment Only)
- Minimizing disturbance to existing trees and shrubs
- LID Site Design Credit Requested:
  - Credit 1
  - Credit 2
  - Credit 3
- Use of "country drainage" versus curb and gutter conveyance and pipe
- Bioretention Cells (includes Rain Gardens)
- Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- Treebox Filter
- Water Quality Swale
- Grass Channel
- Green Roof
- Other (describe): \_\_\_\_\_

### Standard 1: No New Untreated Discharges

- No new untreated discharges
- Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.



# Checklist for Stormwater Report

## Checklist (continued)

### Standard 2: Peak Rate Attenuation

- Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
- Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

### Standard 3: Recharge

- Soil Analysis provided.
- Required Recharge Volume calculation provided.
- Required Recharge volume reduced through use of the LID site Design Credits.
- Sizing the infiltration, BMPs is based on the following method: Check the method used.
  - Static
  - Simple Dynamic
  - Dynamic Field<sup>1</sup>
- Runoff from all impervious areas at the site discharging to the infiltration BMP.
- Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:
  - Site is comprised solely of C and D soils and/or bedrock at the land surface
  - M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
  - Solid Waste Landfill pursuant to 310 CMR 19.000
  - Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.
- Calculations showing that the infiltration BMPs will drain in 72 hours are provided.
- Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

<sup>1</sup> 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.



# Checklist for Stormwater Report

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## Checklist (continued)

### Standard 3: Recharge (continued)

- The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
- Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

### Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
  - Provisions for storing materials and waste products inside or under cover;
  - Vehicle washing controls;
  - Requirements for routine inspections and maintenance of stormwater BMPs;
  - Spill prevention and response plans;
  - Provisions for maintenance of lawns, gardens, and other landscaped areas;
  - Requirements for storage and use of fertilizers, herbicides, and pesticides;
  - Pet waste management provisions;
  - Provisions for operation and management of septic systems;
  - Provisions for solid waste management;
  - Snow disposal and plowing plans relative to Wetland Resource Areas;
  - Winter Road Salt and/or Sand Use and Storage restrictions;
  - Street sweeping schedules;
  - Provisions for prevention of illicit discharges to the stormwater management system;
  - Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
  - Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
  - List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.
- A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.
  - Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:
    - is within the Zone II or Interim Wellhead Protection Area
    - is near or to other critical areas
    - is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
    - involves runoff from land uses with higher potential pollutant loads.
  - The Required Water Quality Volume is reduced through use of the LID site Design Credits.
  - Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.



# Checklist for Stormwater Report

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## Checklist (continued)

### Standard 4: Water Quality (continued)

- The BMP is sized (and calculations provided) based on:
  - The ½" or 1" Water Quality Volume or
  - The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
- The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the proprietary BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

### Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

- The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.
- The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted **prior to** the discharge of stormwater to the post-construction stormwater BMPs.
- The NPDES Multi-Sector General Permit does **not** cover the land use.
- LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.
- All exposure has been eliminated.
- All exposure has **not** been eliminated and all BMPs selected are on MassDEP LUHPPL list.
- The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

### Standard 6: Critical Areas

- The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.
- Critical areas and BMPs are identified in the Stormwater Report.



# Checklist for Stormwater Report

## Checklist (continued)

### Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

- The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:
- Limited Project
  - Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
  - Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
  - Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
  - Bike Path and/or Foot Path
  - Redevelopment Project
  - Redevelopment portion of mix of new and redevelopment.
- Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.
- The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

### Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
  - Construction Period Operation and Maintenance Plan;
  - Names of Persons or Entity Responsible for Plan Compliance;
  - Construction Period Pollution Prevention Measures;
  - Erosion and Sedimentation Control Plan Drawings;
  - Detail drawings and specifications for erosion control BMPs, including sizing calculations;
  - Vegetation Planning;
  - Site Development Plan;
  - Construction Sequencing Plan;
  - Sequencing of Erosion and Sedimentation Controls;
  - Operation and Maintenance of Erosion and Sedimentation Controls;
  - Inspection Schedule;
  - Maintenance Schedule;
  - Inspection and Maintenance Log Form.
- A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.



# Checklist for Stormwater Report

## Checklist (continued)

### Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

- The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has **not** been included in the Stormwater Report but will be submitted **before** land disturbance begins.
- The project is **not** covered by a NPDES Construction General Permit.
- The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.
- The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

### Standard 9: Operation and Maintenance Plan

- The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:
  - Name of the stormwater management system owners;
  - Party responsible for operation and maintenance;
  - Schedule for implementation of routine and non-routine maintenance tasks;
  - Plan showing the location of all stormwater BMPs maintenance access areas;
  - Description and delineation of public safety features;
  - Estimated operation and maintenance budget; and
  - Operation and Maintenance Log Form.
- The responsible party is **not** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:
  - A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
  - A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

### Standard 10: Prohibition of Illicit Discharges

- The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;
- An Illicit Discharge Compliance Statement is attached;
- NO Illicit Discharge Compliance Statement is attached but will be submitted **prior to** the discharge of any stormwater to post-construction BMPs.

**Appendix B**

**Storm Water Pollution Prevention Plan**

STORM WATER POLLUTION  
PREVENTION PLAN

201 ELLIOTT STREET  
RESIDENTIAL DEVELOPMENT  
BEVERLY, MA

APRIL 10, 2015

PREPARED FOR  
BEVERLY COMMERCE PARK, L.L.P.  
200 WEST CUMMINGS PARK  
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288 LITTLETON ROAD, SUITE 31  
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## 1. INTRODUCTION:

- a. Project Name: 201 Elliott Street  
Residential Development  
Beverly, MA
- b. Owner & Operator: Beverly Commerce Park, L.L.P.  
200 West Cummings Park  
Woburn, MA 01801

c. Site Description:

The project site is a developed 71.61 acre parcel known as the Cummings Center on Elliott Street in Beverly, MA. The area to be redeveloped is encompassed within a 1.6 acre area located in the southwest corner of the site adjacent to the intersection of Elliott Street and McKay Street. The development area has been previously developed and contains an existing foundation and paved parking areas.

The Bass River is located to the south of the site across Elliott Street. The top of the river bank is approximately 85 feet from the edge of the property. Since the river is contained within a culvert beneath the site, the project is not located within the Bass River riverfront area.

d. Project Description:

The proposed project is to construct a 6-story multi-unit residential building. Much of the proposed building will utilize the existing foundation, while the remainder of the building would be located within a portion of the existing paved parking area. The existing parking area would be modified to accommodate changes in the traffic flow patterns required for the new building. Since the existing foundation will be utilized in the construction of the new building and much of the parking area will remain undisturbed only about 0.90 acres of the site will be altered by the project.

The construction of the project would be subject to an Order of Conditions issued by the Beverly Conservation Commission. Since the project will alter less than 1 acre of land coverage under the US EPA's Construction General Permit is not required.

The existing drainage system will be upgraded by installing oil hoods in all catch basins in the project area. The flow through catch basin connections will be eliminated to provide better sediment removal. Prior to discharge to the Bass River culvert nearly all runoff will be treated with a Stormceptor OSR-140 treatment unit.

## **2. CONSTRUCTION PERIOD POLLUTION PREVENTION:**

### a. Overview:

Wetland resource areas are especially vulnerable during the construction phase of the project. Appropriate management of the construction site is essential to ensuring that adjacent wetland resource areas and downstream water quality are not impacted by the site activities. This section describes the measures that are to be taken throughout the construction process to achieve this objective.

### b. Approved Plans and Documents

A complete set of approved plans, all regulatory permits, and this Storm Water Pollution Prevention Plan shall be available on site at all times. Only plans approved by the Beverly Conservation Commission are to be used for the construction of the project.

### c. Sequence of Construction:

The site is to be developed in a controlled manner using the following sequence of construction. The sequence establishes phases for the project to prevent excessive site clearing, ensures that erosion and sediment control measures are established, and establishes procedures to appropriately manage storm water runoff.

1. Clean all catch basins in the work area and install oil hoods.
2. Install silt sacks in all catch basins that could receive runoff from the construction area.
3. Relocate existing utilities and install new utilities in accordance with the approved plans.
4. Install new drainage structures.
5. Construct building.
6. Install curbing and repaved parking area as needed.
7. Loam and seed all disturbed areas and complete final landscaping.
8. Silt sacks are to remain in all catch basins until the site has completely stabilized.

### d. Erosion and Sediment Control:

The site contractor shall be responsible for installing, inspecting, and maintaining erosion and sediment controls during all phases of construction until final stabilization is achieved. A qualified professional shall be appointed to oversee the implementation of the erosion control provisions and storm water management best management practices at the site to ensure compliance with all regulatory Orders and Permits.

The site is to be inspected daily as to ensure that all erosion control measures are secured and adequately preventing sediment transport. In the event these measures alone do not provide adequate sediment control during construction additional measures are to be implemented.

e. Temporary Stabilization:

All stockpile areas and portions of the site where construction activity has temporarily ceased for fourteen (14) days are to be stabilized with rye seed applied at a rate of 120 lbs/acre, and mulched with straw at a rate of 4,000 lbs/acre. Other stabilization procedures may be used with prior approval of the design engineer or the qualified professional overseeing erosion and sediment control.

Areas of the site which are to be paved but will remain inactive for fourteen (14) or more days are to be temporarily stabilized using a stone sub-base, mechanically compacted in six (6) inch lifts, until pavement binder course is installed.

f. Permanent Stabilization:

Disturbed portions of the site where construction activities have permanently ceased shall have final stabilization completed in accordance with the approved plans within fourteen (14) days after the completion of construction activities.

g. Construction Vehicles:

The site contractor shall continually monitor construction vehicles to ensure sediment is not being tracked onto the adjacent roads. Additional provisions such as street sweeping or tire washing may be required.

All construction vehicles hauling material to and from the site must be covered to prevent dust and spillage. Vehicles shall be properly maintained to prevent fluid leaks.

h. Dust Control

Appropriate measures shall be taken to ensure that dust is kept to a minimum throughout the construction process. These provisions include but are not limited to:

- Soil stabilizers such as calcium or manganese;
- Water spraying in areas of light traffic;
- Sweeping paved areas.

i. Non Storm Water Discharges

It is expected that the following non storm water discharges will occur on site during construction:

- Discharges from water line and fire hydrant flushing;
- Water for dust control;
- Landscape irrigation.

These activities shall be performed as far away from resource areas as possible. All non storm water discharges except landscape irrigation and dust control shall be directed to the roadway drainage system only. Direct discharges to the wetland resource areas are strictly prohibited.

j. Inspection and Maintenance

The designated qualified professional shall make periodic inspections, and direct repairs and maintenance of all erosion control and storm water management features throughout the construction phase of the project. The following minimum inspection schedule shall be followed. More frequent or follow-up inspections may be required depending on weather or other site conditions.

i. Deep Sump Catch Basins and Stormceptor® Units:

All deep sump catch basins shall be equipped with silt sacks which shall remain in-place until all contributing areas are stabilized. Silt sacks are to be inspected weekly and after all storm events, and are to be cleaned or replaced as needed. Catch basin sumps are to be inspected each time the silt sacks are removed for cleaning or replacement, and after each time the parking area is swept. After the silt sacks are permanently removed, sumps shall be inspected 4 times per year and after each time the parking area is swept. Catch basins shall be cleaned when the sediment is within 24 inches of the bottom lip of the oil hood. Stormceptor® units shall be inspected at the same time the catch basins are inspected. The units are to be cleaned with a vacuum truck when the sediment depth exceeds 9 inches (15% of the sump depth).

ii. Paved Parking Areas and Access Roads:

During Construction all paved roadways are to be swept monthly or as needed to keep the pavement free of accumulated sediment. Sweeping shall not be required during the winter months.

iii. Seeded Areas:

All disturbed areas that have been seeded, either for temporary or permanent stabilization shall be inspected every 14 days. Bare spots shall be raked and reseeded, and hay mulched if necessary. In temporarily stabilized areas inspections shall continue every 14 days. Once vegetation is fully established in permanently stabilized areas inspections shall continue monthly for the first year after stabilization has occurred, and quarterly thereafter.

### **3. LONG TERM (POST CONSTRUCTION) POLLUTION PREVENTION**

#### a. Deep Sump Catch Basins and Stormceptor Units:

Catch basin sumps are to be inspected and cleaned quarterly, and inspected after each time the roadway is swept. Sumps shall also be cleaned when the sediment is within 24 inches of the bottom lip of the oil hood. Stormceptor units shall be inspected at the same time the catch basins are inspected. The units are to be cleaned with a vacuum truck when the sediment depth exceeds 9 inches (15% of the sump depth).

#### b. Paved Parking Areas and Access Roads:

All paved areas are to be swept twice (2) times per year or as needed to removed sediment build-up, trash, and fall foliage.

#### c. Illicit Discharges

The storm drain system discharges to adjacent wetland resource areas. In order to preserve water quality in these areas it is essential that nothing is discharged to the system other than ordinary storm runoff. The following are strictly prohibited from being discharged into any of the components of the storm drain system, or any other components of the storm water management system: oil or hazardous materials, cleaning agents and detergents, used or unused chemicals, commercial wastes, sanitary waste, yard waste, runoff from vehicle washing, backwash from water purification systems, or any other material that may be harmful to human health or the environment.

#### **4. REPORTING AND RECORD KEEPING**

After each inspection and maintenance event, whether during or post construction a report shall be prepared by the person in charge. Each report shall include at a minimum:

- Name and contact information of the person performing the inspection or maintenance;
- The date of the activity;
- Weather conditions;
- Site status (during or post construction);
- If during construction, a description of current level of completion of the project and a description of site activities;
- The reason for the inspection;
- A statement of the status and condition each component of the Storm Water Management System;
- Recommended modifications, maintenance or repairs;
- A detailed description of any maintenance or repairs made;

Each report shall contain the following certification which shall be signed and dated by the qualified professional designated to oversee the operation and maintenance of the storm water management system.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

All reports shall be retained by the operator or owner for a period of three (3) years after project completion or for three (3) years from the date of the report, whichever is later.

**5. STORM WATER POLLUTION PREVENTION PLAN CERTIFICATION**

I certify under the penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true and accurate. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_