

Stormwater Management System Operation and Maintenance Plan

This Operation and Maintenance Plan has been prepared in accordance with the Massachusetts Department of Environmental Protection Stormwater Management Standards.

February 16, 2011

Site

BENTLEY UNIVERSITY

385 Beaver Street, 357 Beaver Street, 600 Beaver Street, 400 Beaver Street
Upper Campus, Southeast Campus, Southwest Campus
Waltham, MA

Site Owner / Operator

BENTLEY UNIVERSITY

175 Forest Street
Waltham, MA

Operation and Maintenance Plan

This Operation and Maintenance Plan includes details on drainage system operational and maintenance requirements as well as long-term site management procedures related to general good housekeeping measures, landscape maintenance, and illicit discharges.

System Overview

The stormwater management system for the Bentley University consists of a campus wide drainage system which includes catch basins, manholes, water quality inlets, detention ponds, and drain lines. Sediment from the parking lot is trapped within the catch basins, and water quality inlets preventing it from being discharged from the site to the adjacent wetland area and a stream that flows through the site. The stream also receives flow from the Storer Estates. The portion of the stream that flows through the southeast and southwest campus also receives flows from the City of Waltham drainage system in Beaver Street.

Proper monitoring and maintenance of these site elements is necessary to ensure adequate sediment retention and treatment of stormwater runoff.

Site Manager

A Site Manager will be designated by the Site Operator / Owner. The Site Manager will be responsible for maintaining an accurate **Site Inspection & Maintenance Log**.

The Site Inspection & Maintenance Log will document the following:

- Inspection date, personnel, and specific inspection activities conducted
- Results of inspection for each series of system components
- Identification of and recommendation for specific maintenance tasks
- Maintenance date, personnel, and results of specific maintenance
- Recommended additional maintenance or other follow-up tasks associated with each system component maintained

The Site Manager will also be responsible for ensuring that all maintenance employees are familiar with the system components and their proper function, and are trained to identify improper function and signs of failure.

Reports shall be submitted annually to the Commission by May 1.

Inspection & Maintenance Activities

Pavement Cleaning

Pavement sweeping for the Bentley University Campus shall include the edges (curb line) of the site access drives and parking areas shall be cleaned by a standard a vacuum sweeper vehicle at least twice annually and collected sediment legally disposed of off-site.

Drainage Structures

Drainage system structural elements including catch basins, drain manholes, water quality inlets, pipe outfalls and other related storm drainage systems shall be inspected semi-annually typically in the Spring after the sand from winter maintenance is swept up and in the Fall.

Observed damage to inlet grates, outlet structures, and/or any other material or sideslope damage shall be logged and scheduled for repair and/or replacement. Accumulated sediments and/or hydrocarbons in catch basins, stormceptor and the swale shall be removed when accumulated sediment depth exceeds 6", but no less often that annually, after the spring pavement sweeping.

Sediments shall be removed by vacuum pumping and collected materials shall be disposed of off site in accordance with all applicable local and state regulations.

Pavement

Pavement and specifically curbing should be inspected annually and any broken or other degraded sections of curbing that would be unable to contain and/or direct stormwater flow should be logged and scheduled for repair.

MAY 1st Submitted

Snow and Snowmelt Mangement

Use of De-icing Compounds:

- Use of de-icing chemicals will be limited. Sand will be the primary agent used for driveways, pedestrian walkways and parking areas during snow/ice conditions.
- When necessary for safety conditions, a 10% salt/sand mixture will be used.
- Reduction of de-icing compounds through careful application.

Snow removal and storage:

- Placement of plowed snow outside vegetated wetland areas.
- Removal of accumulated sediments from snow storage areas every spring or as stipulated herein.

Good House-Keeping Measures

Trash Removal

The access drives and parking areas, common landscaped areas, stream bed adjacent to Rhodes Hall, and walkways shall be inspected for litter and trash at least monthly. Any accumulated trash, litter, and discarded materials in these areas will be removed. No disposal of materials will be permitted within the landscaped or wooded areas on the project site. This prohibition applies to trash, fill material, construction debris, grass clippings, collected leaves and cut branches (exclusive of leaves or grass clippings that are mulched in place).

General Landscape Maintenance

The fertilizers utilized on the site shall be slow release types of fertilizer containing low percentages of nitrogen and phosphorus. Fertilizer applications shall be limited to the spring and early fall, generally just as the vegetation begins to grow (April 15) and in the fall (September). If used, the fertilizer shall be applied at rates not in excess of the manufacturer's specification. No fertilizer applications shall be conducted within wetlands or their immediate border areas

Pesticides shall be limited to the minimal amount necessary to control identified outbreaks and significant infestations. All applications shall be made by a state licensed certified applicator. The use of these materials shall be documented in the Site Maintenance Log indicating material applied, quantity and date of application.

Illicit Discharges

The stormwater management system is for collecting, treating, and distributing stormwater flows only. Any discharge of materials other than stormwater to this system is considered an "Illicit Discharge" and is a violation of the local and state environmental regulations that govern its design, construction and use and are prohibited under this Operation and Maintenance Plan. Illicit discharges may include but are not limited to wash water; wastewater; stormwater contaminated by contact with process wastes, raw materials, toxic pollutants, hazardous substances, oil, or grease.

Site Maintenance Log

Inspection Date: _____

Inspector: _____ Site Manager Initials: _____

Period: -mi-annual quarterly mothly after storm event

ITEMS

Drainage Structures / Rain Garden / Outfalls

Inspect for sediment accumulation, oil/grease accumulation, general physical condition

Item / Maintenance / Repair	Responsible Party	Completion Date	Site Manager Initials

General

Inspect for / comment on trash and/or debris accumulation, fertilization requirements, snow storage, general site condition.

Item / Maintenance / Repair	Responsible Party	Completion Date	Site Manager Initials