

Site Operations and Maintenance Plan

For the Proposed:

Commercial Development

Located at:

**100 Industrial Park Road
Hingham, Massachusetts**

Prepared for Submission to:

**Town of Hingham Conservation Commission
Town of Hingham Planning Board**

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Prepared for:

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General Overview

The subject property is approximately 17.05 acres with two existing easements at the western portion of the property, one consisting of approximately 1.17 acres, the other of approximately 0.25 acres. The parcel is currently developed with two existing buildings, driveways, parking, and some wooded areas that have remained undeveloped. There are existing wetlands to the east of the site in which is currently undeveloped. The proposed redevelopment includes a renovation of the +/- 149,000 square foot (SF) building on the western portion of the site with associated modifications to the parking, drainage, and utilities necessary to support modifications for a new tenant. The project also proposes to demolish the existing building to the southeast for additional parking that is required by the new tenant. The overall existing drainage onsite will be improved through the use of Best Management Practices (BMPs) for water quality and runoff management through detention and outlet control.

A storm water management system will be constructed to control stormwater runoff quantity from the property and improve the runoff quality. The enhanced quality of the stormwater runoff is accomplished through the use of water quality units, underground detention systems, catch basins with deep sumps, hooded catch basin outlets, vegetated slopes, bioretention areas and operations and maintenance criteria for the proposed drainage system.

The following Operations and Maintenance Plan was prepared specifically for this site development in Hingham, Massachusetts. The proposed stormwater management system is designed to be in compliance with the Town of Hingham regulations and the 2008 Massachusetts Stormwater Handbook.

Purpose & Goals

The purpose of this plan is ensuring that the site is operated in accordance with all approvals and permits. The primary goal is to inform the property owner about how the system operates and what maintenance items are necessary to protect downstream wetlands and watercourses. The secondary goal is to provide a practical, efficient means of maintenance planning and record keeping to verify permit compliance.

Responsible Parties

The property owner will be responsible for implementing the Plan on the entire property. The party may retain a management company to oversee the maintenance of the site.

List of Permits & Special Conditions

The site will receive a number of permits, which may contain special conditions that require compliance by the owners and maintenance contractors. These permits may include the following:

Town of Hingham:

Site Plan Permit

Special Permit A3

Conservation Commission Approval

Maintenance Logs and Checklists

The property owner will keep a record of all maintenance procedures performed, date of inspection/ cleanings, etc. Copies of receipts, disposal tickets, inspection reports and maintenance records shall be kept on site in the facility manager's office once it is established. Maintenance logs and inspection forms shall be provided to the Town of Hingham upon request.

Employee Training

The site will have an employee training program, with annual updates, to ensure that the employees charged with maintaining the site do so in accordance with the approved permit conditions. All subcontractors (Vactor, landscaping, snowplowing, etc.) will be informed of requirements and responsibilities.

Spill Control

The owner should have a spill control program. The program should be updated annually and incorporated into the employee training program.

Stormwater Management

System Components

The storm water management system has several components that are shown on the Site Grading and Drainage Plan drawings (GD-0, GD-1, GD-2), and they perform various functions in treating storm water runoff:

Catch Basins are inlets, which trap road sand and floatable debris prior to draining through the storm sewer system. The proposed catch basins (CBs) are equipped with sumps with depths 4' below the outlet pipe, and hoods over the outlet pipes. The Underground Detention Systems detain stormwater to maintain down stream flow patterns without flooding and provide isolation rows for pre-treatment of suspended solids. The Constructed Stormwater Wetland treat the water quality volume prior to discharge to the downstream wetlands to remove harmful chemicals and at least 80% of the total suspended solids (TSS).

Catch Basins and Manholes

The property owner is responsible for cleaning the catch basins and manholes on the property. A Massachusetts Licensed hauler shall clean the sumps, and dispose of removed sand legally. The road sand may be reused for winter sanding, but may not be stored on-site. As part of the hauling contract, the hauler shall notify the property owner in writing where the material is being disposed.

Each catch basin shall be inspected and cleaned every four months, with one inspection occurring during the month of April. Any debris occurring within one foot from the bottom of each sump shall be removed by Vacuum "Vactor" type of maintenance equipment.

During the inspection of each of the catch basin sumps, the hoods (where provided) on each of the outlet pipes shall also be observed. In the event that a hood is damaged or off the hanger, it shall be reset or repaired.

Trench Drains

There are two trench drains proposed on site at the vehicle entry and exist of the building. These drains are each to be connected to 1,000 precast concrete tanks. This tank will require pumping and proper disposal of any pumped substance when the tanks are 3/4 full (or more frequently as needed). The integrity of the tank and trench drains shall be inspected at the time of pumping.

Underground Detention System

For the first year of operation following construction the isolator row on the underground detention system will be inspected, and cleaned if needed, once each month for the months of January, February, March and April, and once every six months thereafter, with one inspection occurring during the month of April. A graduated measuring device (stadia rod) shall be inserted into the chambers and measurements of any accumulations shall be recorded. Accumulated sediment shall be pumped out when levels reach specific limits in accordance with the

manufacturer's recommendations for the specific system. Accumulated sediment and/or oils/floatables shall be removed by vacuum "Vactor" type of maintenance equipment and disposed of legally off-site. At the same time the catch basins and manholes are inspected, each of the inspection ports provided shall be opened and visually checked from the surface. The system shall be kept free of accumulated sand or debris that may act to negatively impact the infiltration process. The underground detention system qualifies as a Confined Space under OSHA regulations, and any maintenance involving entry into the system should comply with OSHA Confined Space Entry Regulations. Accumulated sediment and debris shall be removed by vacuum "Vactor" type of equipment, or manually. A detailed maintenance logbook shall be kept for the system. Information is to include, but not be limited to, the date of inspection, record depth of floatables and solids, depth of accumulated sediment, and volume of sediment removed. Also note any apparent irregularities such as damaged components, blockages, or irregularly high or low water levels.

Constructed Stormwater Wetland Pond

The constructed stormwater wetland pond shall be checked for and cleaned of trash, excessive sediment, other debris and erosion. Maintain the native plantings. A detailed maintenance logbook shall be kept with information including, but not be limited to, the date of inspection, record of grit depth, condition of vegetation, observation of any floatables, and date of cleaning performed as well as specific items listed below.

Proponents must carefully observe the constructed stormwater wetland system over time. In the first three years after construction, inspect the constructed stormwater wetlands twice a year during both the growing and non-growing seasons. The sediment forebay should be cleaned at least once a year, or more frequently if needed. Sediment should be cleaned out of the entire basin system at least once every ten years, or more frequently if needed in accordance with the Massachusetts Stormwater Handbook.

Regular inspection/maintenance for the stormwater wetland pond includes the following items:

- The types and distribution of the dominant wetland plants in the marsh;
- The presence and distribution of planted wetland species;
- The presence and distribution of invasive wetland species (invasives must be removed);
- Indications that other species are replacing the planted wetland species;
- Percentage of standing water that is unvegetated (excluding the sediment forebay and micropool);
- The maximum elevation and the vegetative condition in the semi-wet zone;

- Stability of the original depth zones and the micro-topographic features; and
- Accumulation of sediment in the forebay and micropool; and survival rate of plants (dead plants must be replanted).

Site Maintenance

Parking Lots

Parking lots, driveways and sidewalks shall be swept regularly by the property owner to clean trash and other debris. At a minimum, sweeping should occur quarterly. The property owner will sweep parking lots on its property in the spring to remove winter accumulations of road sand.

Landscaping

The property owner will maintain landscaped areas. Normally the landscaping maintenance will consist of pruning, mulching, planting, mowing lawns, raking leaves, etc. Use of fertilizers and pesticides will be controlled and limited to minimal amounts necessary for healthy landscape maintenance.

The lawn areas, once established, will be maintained at a typical height of 2½"-3". This will allow the grass to be maintained with minimal impact from weeds and/or pests. The low-maintenance slope areas will be maintained as a meadow, buffer enhanced plantings where applicable, or allowed to revert back to natural conditions.

Pesticides will only be used as a control method when a problem has been clearly identified and other natural control methods are not successful. All pesticide applications shall be by licensed applicators, where necessary.

Topsoil, brush, leaves, clippings, woodchips, mulch, and other material shall be stored off site.

Outdoor Storage

There will be no outdoor storage of hazardous chemicals, fertilizer, pesticides, or herbicides anywhere in the site.

Snow Removal & Storage

Snow shall be shoveled and plowed from sidewalks, driveways and parking areas as soon as practical during and after winter storms and stored in snow storage areas on site where indicated.

MAINTENANCE SCHEDULE

During the First Year of Operation:		
Task:	Completion Date:	Manager's Initials:
JANUARY:		
Employee Training Program with Spill Program		
*Catch Basin/Yard Drain		
*Subsurface Detention System		
FEBRUARY:		
* Subsurface Detention System		
MARCH:		
* Subsurface Detention System		
* Stormwater Wetland Pond		
APRIL:		
*Catch Basin/Yard Drain		
* Subsurface Detention System		
* Stormwater Wetland Pond		
Shrub Fertilization		
Lawn Limbing (if necessary)		
AUGUST:		
*Catch Basin/Yard Drain		
* Subsurface Detention System		
* Stormwater Wetland Pond		
OCTOBER:		
* Subsurface Detention System		
* Stormwater Wetland Pond		
Tree and Lawn Fertilization		
DECEMBER:		
*Catch Basin/Yard Drain		
* Subsurface Detention System		

*NOTE: Use appropriate guidelines found in this plan to conduct the inspection/cleaning.

After the First Year of Operation:		
FOR YEAR _____		
Task:	Completion Date:	Manager's Initials:
JANUARY:		
Employee Training Program with Spill Program		
*Catch Basin/Yard Drain		
APRIL:		
*Catch Basin/Yard Drain		
* Subsurface Detention System		
*Stormwater Wetland Pond		
Shrub Fertilization		
Lawn Limbing (if necessary)		
AUGUST:		
*Catch Basin/Yard Drain		
OCTOBER:		
* Subsurface Detention System		
Tree and Lawn Fertilization		
*Stormwater Wetland Pond		
DECEMBER:		
*Catch Basin/Yard Drain		

*NOTE: Use appropriate guidelines found in this plan to conduct the inspection/cleaning.

CATCH BASIN / CATCH BASIN INSERT INSPECTION LOG

Name of Inspector:

Date:

Catch Basin ID	Condition (circle one)		Debris above 1' within sump? (If yes then catch basin is to be cleaned)		Date of Catch Basin Cleaning (if debris is greater than 1')		Condition of Hood (if applicable)	Comments:
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							

	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							
	Fair	Poor	Yes	No	Yes	No		
	Excellent							

On-site Procedures for Inspection and Maintenance of Catch Basin Inserts

- Secure traffic and pedestrian traffic with cones, barrels, etc.
- Clean surface area around each catch basin
- Remove grates and set aside
- Clean grates, remove litter and debris that may be trapped within the grate
- Remove by vacator hose the debris that has been trapped in the trough area. Dispose of in accordance with local, state and federal regulatory agency requirements. Most debris that is captured in the trough or sump area will fall into the non-hazardous waste category.
- Visually inspect and check the condition of the trough area.
- Replace grate and lockdown as needed.
- Un-secure traffic control area.
- Complete service report and submit to facility owner.