



Andrews Survey & Engineering, Inc.

Land Surveying - Civil Engineering - Site Planning



Operation & Maintenance Plan

April 18, 2019



Project:
Cultivate Burncoat
22 Burncoat Street
Leicester, MA 01524

Assessors Map/Lot:
Map 18B, Parcels B11 & B12

Applicant:
Cultivate Holdings LLC
P.O. Box 245
Leicester, MA 01524

Owner:
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Long Term Pollution Prevention and Stormwater System Operation and Maintenance Plan

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Preface:

The goal of this manual is to improve water quality by initiating performance standards for the operation and maintenance of stormwater management structures, facilities, and recognized practices. The stormwater performance standards are set up to meet the statutory and regulatory authorities of the Department of Environmental Protection, including the Wetland Protection Act, surface water discharge permits under the Clean Waters Act, the 401 certification program for fill in wetlands, and the 401 certification of federal permits based on the water quality standards.

The local Conservation Commission and the Department of Environmental Protection are responsible for ensuring the protection of wetlands through the issuance of permits for activities in flood plains and in or near wetlands, as per the Wetlands Protection Act, MGL c.131 s. 40. Proposed work within a resource area or a one hundred (100') foot buffer zone requires an order of conditions.

Resource areas include freshwater and coastal wetlands, banks, beaches, and dunes bordering on estuaries, streams, riverfront, ponds, lakes, or the ocean; lands under any of these bodies of water; land subject to tidal action, coastal storm flowage, or flooding.

The discharge of pollutants to water of the Commonwealth without a permit is prohibited under the state Clean Waters Act, MGL c. 21, ss 26-53. Stormwater discharges are subject to regulations when two criteria are met under 314 CMR 3.04(2). First, there must be "conveyance or system of conveyances (including pipes, ditches, and channels) primarily used for collecting and conveying stormwater runoff." 314 CMR 3.04(2)(a). Second, the stormwater runoff must be "contaminated by contact with process wastes, raw materials, toxic pollutants, hazardous substances, or oil and grease," or, be designated on a case-by-case basis. Such designations must be made when the "stormwater discharge" is subject to effluent or toxic pollutant limitations, is located in an industrial plant area, or may be a significant contributor of pollutants to waters of the Commonwealth. Any activity resulting in a discharge to waters of the United States must comply with Section 401 of the Federal Clean Water Act and comply with state water quality standards. All stormwater discharges must be set back from the receiving waters or wetlands and best management practices (BMP) must be implemented. A permit is required for any stormwater discharge to an Outstanding Resource Water (ORW) which meets the regulatory definition in 314 CMR 3.04(2). Outstanding Resource Waters are defined under Surface Water Quality Standards 314 CMR 4.06 and include public surface water supplies, coastal and some inland Areas of Critical Environmental Concern (ACECs), and certified vernal pools.

This manual is set up to explain how to operate and maintain Best Management Practices that control erosion and minimize delivery of sediment and other pollutants to surrounding water and air.

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| Chapter 1 | is an introduction to the site and describes the Best Management Practices used on this site. |
| Chapter 2 | outlines the inspection and maintenance schedules for the site. |
| Chapter 3 | outlines the operation and function of the Best Management Practices. |
| Chapter 4 | describes how and when the Best Management Practices should be inspected and how frequently they must be maintained and cleaned. |

1. Project Description

The proposed project consists of an approximately 132,325 s.f. building containing greenhouses and a processing center located at 22 Burncoat Street and is an allowed use in the Highway Business-Industrial District 1 (HB-1) zoning district and is defined as “Marijuana Establishment.”. The site is located approximately 660 feet southerly of the intersection of Burncoat Street and Main Street (Route 9) and is bounded to the north by a currently vacant building, undeveloped parcels and a single-family home accessed from Main Street (Route 9), to the west by undeveloped properties, to the south by a residential subdivision on Pine Ridge Road and an undeveloped property, on the east by single-families residential properties and Burncoat Street.

The existing site consists an existing single-family house a garage and shed and approximately 39 acres of undeveloped wooded land. The topography of the existing project site consists of land sloping from the northeast to the southwest with a grade change of approximately 28 feet across the project area. The existing grade at Burncoat Street at the project entrance is approximately elevation 1037 and the elevation at the proposed building entrance is approximately 1030.

According to the USDA’s Web Soil Survey, the subject parcels consist of hydrologic soil group classification C. The subject parcels do not have any known water protection districts or wellhead protection areas, areas of critical environmental concerns (ACEC’s), NHESP Estimated or Priority Habitats, or Activity and Use Limitation areas (AUL). The subject site has three (3) wetland resource areas and associated buffer zones within the property limits. Two (2) of the wetland resource areas are located to the southwest of the project area and one (1) is located to the northwest of the project area.

This proposed establishment will consist of two (2) approximately 55,600 s.f of greenhouse space and one (1) approximately 21,100 s.f. processing area centered between the greenhouses. The proposed facility will contain 66 parking vehicular parking spaces and a loading lock providing access into the processing center. Water and sewer will be provided from Main Street (Route 9) down Burncoat Street to the site. Electric and communications will be provided from existing utility poles on Burncoat Street in the vicinity of the facility entrance.

Stormwater runoff from the development will be collected in a number of Best Management Practices (BMP’s), including deep sump catch-basins, sediment forebay, and infiltration basin. To control erosion and minimize delivery of sediment and other pollutants into the atmosphere and adjacent wetlands, Best Management Practices (BMP’s) have been provided within the site’s stormwater management system. These practices include but are not limited to:

- Deep Sump Catch Basin;
- Sediment Forebay;
- Infiltration Basin;

This manual is designed to help responsible parties become aware of urban non-point pollution problems and to provide detailed information about operating and maintaining stormwater management practices. The success of the Best Management Practices is dependent on their continued operations and maintenance.

2. Maintenance Requirements

- **Owner**

The owner(s) of the BMP's shall be the person, persons, trust, corporation, etc., or their successors who have title to the land on which the BMP is located. It is anticipated that all BMP's will be owned and maintained by Cultivate Holdings LLC.

- **Operation and Maintenance Responsibilities**

- The party or parties responsible for the funding, operation and maintenance of the BMP's shall be the OWNER or their designees.
- BMP's each have specific maintenance requirements to ensure long-term effectiveness. These stormwater management systems will be operated, inspected and maintained on a regular basis by a qualified professional with expertise in inspecting drainage system components. All of the stormwater BMP's shall be kept in good working order at all times.
- A maintenance agreement providing for the funding, operation and maintenance of all the stormwater management BMP's shall be provided.

- **Source of Funding for Operation and Maintenance**

- The party or parties responsible for the funding, operation and maintenance of the BMP's shall be the OWNER or their designees.
- A maintenance agreement providing for the funding, operation and maintenance of all the stormwater management BMP's shall be provided.
- Approximate estimated annual maintenance costs for the site are:
 - Deep sump hooded catch basins - \$300 / structure
 - Manhole and connecting pipes - \$100 / structure
 - Sediment Forebay & Stormwater Basin - \$750

- **Schedule for Inspection and Maintenance:**

- BMP's each have specific maintenance requirements to ensure long-term effectiveness. These stormwater management systems will be operated, inspected and maintained on a regular basis in accordance with this manual. All of the stormwater BMP's shall be kept in good working order at all times.
- As a minimum, the owner shall follow the general guidelines outlined herein for the BMP's provided on this site.
- An Operation and Maintenance log must be maintained for the last three years, outlining inspections, repairs, replacement and disposal for each Best Management Practice (BMP). In the case of disposal, the log shall indicate the type and material and the disposal location. This rolling log shall be made available to the Mass DEP and/or the Leicester Conservation Commission upon request.

3. Operation of Best Management Practices

Deep Sump Hooded Catch Basin

Is an underground concrete structure which is designed to retain removed trash, debris and coarse sediment from stormwater runoff and serve as temporary spill containment devices for floatables such as oil and greases prior to discharge into a storm sewer pipe. The functions of a deep sump hooded catch basin include:

- A grate and/or vertical notch found in the curbing, that allow stormwater to enter the structure while filtering out larger objects such as trash and leaves;
- A four-foot (minimum) sump below the invert of the storm sewer pipe provides an area for detention time which allows sands and other sediments to settle out of the runoff prior to discharge.

Sediment Forebay

Is a post-construction practice consisting of an excavated pit, bermed area or cast (in-place or pre-) structure combined with a weir, designed to slow incoming stormwater runoff and facilitating the gravity separation of suspended solids prior to flowing to a subsequent BMP or system discharge. The functions of the sediment forebays include:

- Filter out sediments within the stormwater runoff
- Reduce runoff velocities;
- Reduce peak discharge flows.

Infiltration Basin

Are stormwater runoff impoundments that are constructed over permeable soils which allow for the recharge of treated runoff into the groundwater. The functions of an infiltration basin include:

- Provide groundwater recharge;
- Reduce local flooding;
- Preserve the natural water balance of the site.

4. Inspection and Maintenance of Best Management Practices

Deep Sump Hooded Catch Basins and Manholes

At a minimum, deep sump hooded catch basin and manhole inlets shall be inspected four times per year. Inlet inspection should be conducted at the end of the foliage and snow removal seasons. Each structure should be cleaned whenever the depth of sediment deposits is greater than or equal to one half the depth of the sump from the bottom of the structure to the bottom of the lowest pipe invert. Structures shall be inspected for a buildup of sediments, oils and debris, cracks, breaks, or deformations. Any function of the catch basin or manhole structure that is not in working order will be replaced with similar materials, as per the details. The catch basins and manhole sumps will be cleaned by means of hand held shovels, scallop shovel and/or vacuum trucks. The grate opening shall be clear of any foreign or lodged object. Sands and salts used in the winter will be removed from the catch basin sumps in the early spring. Leaves, pine needles, and branches brought down by autumn winds, rain, and cold weather will be removed from the catch basins sumps in the late fall.

Collected sediment and debris will be properly disposed of per local, state and federal

requirements. Any sediment and debris removed from a catch basin deemed to be contaminated must be evaluated in accordance with the Hazardous Waste Regulations, 310 CMR 30.000, and handled as hazardous waste.

Sediment Forebay

At a minimum, the forebay shall be inspected after every major storm event (1-inch of rain or greater) for the first six (6) months, then monthly thereafter. Sediment and debris should be removed a minimum of four (4) times per year, starting in the spring and spaced at even time increments until the late fall season, thereafter.

Rip-rap area between the flared end section and the gabion wall, as well as the gabion wall itself shall be inspected within the sediment forebay. Riprap should be checked after every major storm event (1-inch of rain or greater) for displaced stones, slumping, and erosion at edges, especially downstream or downslope. If the riprap has been damaged, it should be repaired immediately before further damage can take place.

Collected sediment and debris will be properly disposed of per local, state and federal requirements. Any sediment and debris removed from the sediment forebay deemed to be contaminated must be evaluated in accordance with the Hazardous Waste Regulations, 310 CMR 30.000, and handled as hazardous waste.

Stormwater Basins (including drawdown devices, flared end sections and rip-rap aprons)

At a minimum shall be inspected after every major storm event (1-inch of rain or greater) for the first six (6) months, then in the spring and fall of every year, thereafter. Note how long water remains standing in basin after a storm; standing water within the basin >72 hours after storm events suggests potential clogging and should be immediately addressed. Also, check for signs of differential settlement, cracking, erosion, leakage in embankments, tree growth in embankments, condition of riprap aprons, sediment accumulation and the health of the turf. If necessary, the drawdown device in each stormwater basin shall be utilized to conduct the required maintenance. At a minimum, inspect drawdown devices, flared end sections and rip-rap aprons associated with the stormwater basins at least twice a year. Inspect the drawdown device for sediment collection, erosion, and overall operation. Inspect the flared end sections for condition of the riprap stone, signs of erosion, integrity and joint connection with the drawdown device pipe, and vegetative growth. Riprap outfalls should be checked after every major storm event (1-inch of rain or greater) for displaced stones, slumping, and erosion at edges, especially downstream or downslope. If the riprap has been damaged, it should be repaired immediately before further damage can take place.

Stormwater basins shall be mowed a minimum of twice per year. Grass clippings and accumulated organic matter should be removed to a non-sensitive area. Repairs and reseeding should be done as required. Sediment and debris should be removed manually when stormwater basin is thoroughly dry, a minimum of once per year or when the sediment level reaches a depth of 3".

At a minimum, inspect and clean pretreatment devices associated with the stormwater basins at least twice a year.

5. Temporary Erosion & Sediment Control Best Management Practices

Temporary Sediment Traps

Are temporary erosion control measures to be placed during construction to prevent sediment and erosion from stormwater runoff. Each sediment trap shall have a maximum drainage area of 5 acres and should be used in conjunction with diversion swales and/or channels. The temporary traps shall be placed at the low areas of the site but not within the final permanent location of the detention basins.

Maintenance:

- 1) Temporary sediment traps shall be readily accessible for periodic maintenance and sediment removal.
- 2) A stake shall be set to at one-half ($\frac{1}{2}$) of the design depth of the temporary sediment trap. Sediment shall be removed when sediment accumulates to this level.
- 3) Temporary sediment traps shall be inspected after every storm event. Any erosion or scouring shall be repaired immediately.
- 4) Inspect spillway and clean or replace spillway gravel facing if clogged or damaged.
- 5) Inspect riprap areas and replace any displaced stones in the spillway.
- 6) Inspect vegetation for stabilization; reseed and remulch if necessary.
- 7) Check spillway depth periodically to ensure minimum of 1.5 ft depth from lowest point of the settled embankment to the highest point of the spillway crest. Fill any low areas of the embankment to maintain design elevation.
- 8) After all sediment-producing areas have been stabilized, inspected and approved, remove the temporary sediment trap structure and all sediment. The site shall be graded to blend in with adjoining areas and stabilized immediately.

Erosion Control Barriers/Stabilization

In addition to the silt fence/straw wattle at the limit of work area at the perimeter of the project site, intermediate erosion control barriers shall be placed on slopes 10% or greater at intervals of a maximum of 100'. The site shall remain stabilized during construction. In addition to the erosion controls barriers and temporary sediment traps, the site should be stabilized as quickly as possible with temporary and permanent seed mixtures to avoid having large disturbed areas.

General Site

In addition to providing ongoing maintenance of the stormwater management system, the overall site in general shall be kept free of debris and trash that would negatively impact the stormwater management system.

Best Management Practices (BMP) Inspection Log

General Information			
Project Name	Cultivate Burncoat		
Location	22 Burncoat Street, Leicester, MA		
Date of Inspection		Start/End Time	
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Inspector's Qualifications			
Type of Inspection: <input type="checkbox"/> Regular <input type="checkbox"/> Emergency			
Weather Information			
Weather at time of this inspection? <input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Rain <input type="checkbox"/> Sleet <input type="checkbox"/> Fog <input type="checkbox"/> Snowing <input type="checkbox"/> High Winds <input type="checkbox"/> Other: _____ Temperature: _____			
Are there any discharges at the time of inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: <div style="height: 40px; border: 1px solid black; margin-top: 5px;"></div>			

Site-specific BMPs

- The structural BMPs are identified on the BEST MANAGEMENT PRACTICES LOCUS included within the LONG TERM POLLUTION PREVENTION & STORMWATER SYSTEM OPERATION & MAINTENANCE PLAN. Carry a copy of the Locus map with you during your inspections. This list will ensure that you are inspecting all required BMPs at your site.*
- Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.*

	BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
1	Deep sump catch basins	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2	Sediment Forebay	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3	Infiltration Basins	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
7		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
8		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
9		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
10		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Overall Site Issues

Below are some general site issues that should be assessed during inspections. Customize this list as needed for conditions at your site.

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1	Are discharge points and receiving waters free of any sediment deposits?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2	Are storm drain inlets properly working?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3	Is trash/litter from site areas collected and placed in covered dumpsters?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5	Are materials that are potential stormwater contaminants stored inside or under cover?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5	Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6	(Other)	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Non-Compliance

Describe any incidents of non-compliance not described above:

CERTIFICATION STATEMENT

"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."

Print name and title: _____

Signature: _____ **Date:** _____