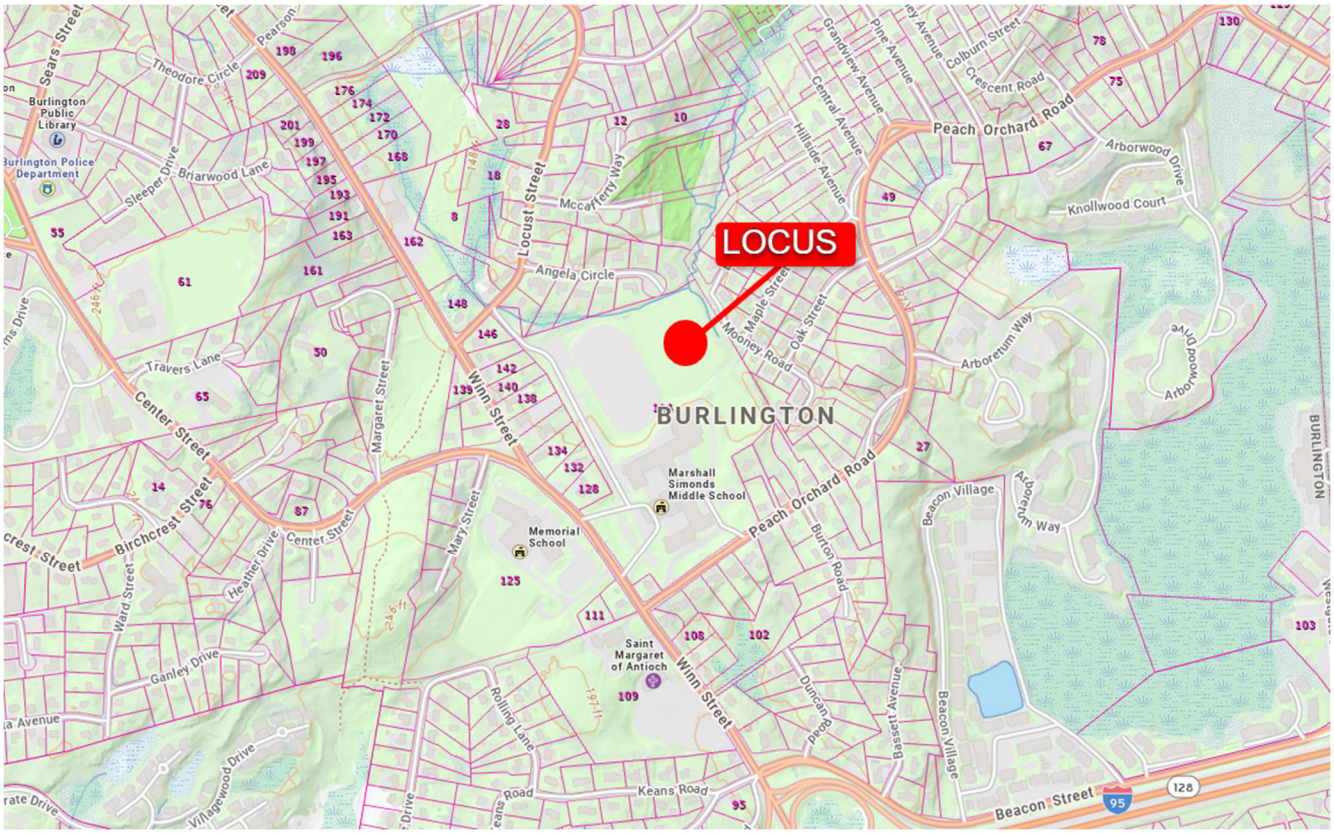
NESRA ENGINEERING

Long-Term Stormwater Operations and Maintenance Plan

Marshall Simonds Middle School Athletic Fields Renovation Project

Burlington, MA

Revised 11-2-25



Overview

The following Long Term Stormwater Operations and Maintenance plan has been completed as required by the NPDES Construction General Permit, the associated Stormwater Pollution Prevention Plan (SWPPP), and Federal, State, Local regulatory guidelines, as well as common civil engineering practices. All of which will be submitted by the contractor prior to start of construction and reviewed by Nesra Engineering LLC.

The purpose and intent of this Long-Term Stormwater Operations and Maintenance plan is to provide additional project-specific information related to the effective stormwater management implementation, operations and maintenance of stormwater measures. The information provided herein is intended to provide the operational and maintenance basis of all stormwater measures on-site, subject to updates, amendments, or revisions, as necessary. The property owner shall be notified in writing of this plan and be provided with a copy, along with a complete set of the approved project drawings depicting all stormwater elements.

The following outline is a basic summary of the stormwater operations and maintenance plan key elements:

Section A

Introduction

1. Purpose
2. Responsible Parties
3. Temporary Stormwater Measures
4. Permanent Stormwater Measures
5. Estimated Annual Costs

Section B

Stormwater Operations

1. Material and Equipment Storage
2. Stormwater Systems
3. Stormwater Operations and Maintenance
4. Source Control / Preventing Illicit Discharges

Section C

Stormwater Maintenance

1. Management, Training, and Certification
2. Observation Log
3. Correction Action Log

Section A

Introduction

The project involves replacing the existing natural grass fields adjacent to Marshall Simonds Middle School, 114 Winn Street, Burlington, MA, with one full-size synthetic multipurpose athletic field and one smaller youth/practice field. The design eliminates the previously proposed ADA parking area and associated drive, reducing impervious cover. Runoff from both fields and adjacent walkways is directed through the permeable turf base and collected by an underdrain system that discharges to a new bioretention rain garden for final filtration and infiltration before connecting to existing infrastructure. The project also includes new walkways, fencing, terraced seating, and minor grading improvements.

Currently, runoff originates from the south side of the property and flows northward across the parcel. Stormwater from the building and parking lot divides into two main paths: one portion flows northeast into a vegetated grass field before discharging into a catch basin, while the remainder moves north and northwest over a grassy hill and into a wetland categorized as a wood swamp deciduous wetland by MassDEP—adjacent to walking path that leads to the School. Additional runoff from the field continues north, eventually emptying into a linear wetland along the property's northern and eastern sections.

Purpose

The purpose of this Stormwater Operations and Maintenance Plan is to (1) identify the primary differences between temporary and permanent stormwater measures, proper operations, and system maintenance and (2) ensure the inspection of the system removal of accumulated sediments, oils, and debris, and the implementation of corrective action as well as record-keeping activities. The ongoing responsibility resides on the Owner(s), its successors, and assigns. Adequate maintenance is defined in this document in good working condition.

Stormwater management facilities are commonly installed in development projects such as the proposed renovation of the Winch Tennis Courts. The complexity and goals of these systems vary with the nature of the receiving waters as well as the type of change/renovation proposed. In general, stormwater runoff from areas may contain contaminants which can have an adverse impact on receiving waters. The installation of stormwater management systems that are properly designed, installed, and maintained can significantly reduce the non-point discharge from construction and developed areas. These measures are particularly important to the project in sensitive water bodies. The temporary and permanent stormwater measures are further described in the permit plans, construction documents, and Stormwater Pollution Prevention Plan.

The stormwater management system can protect and enhance the stormwater runoff water quality through the removal of sediments and pollutants, and source control significantly reduces the number of pollutants entering the system.

This Long-Term Stormwater Management System Operations and Maintenance (O&M) Manual shall be implemented to ensure that the stormwater management system functions as designed. The Owner possesses the primary responsibility for overseeing and implementing the O&M plan and assigning a person or persons who will be responsible for the proper operation and maintenance of the stormwater structures.

Included in this manual is an overall site plan which identifies the locations of the key components of the stormwater management system and a log for tracking the inspections and maintenance.

Owner(s) & Responsible Parties

Name: Burlington Public Schools
Address: 123 Cambridge St.
Town: Barrington
State: MA
Contact: 01803
Telephone: 781-238-5690
Email: T.B.P.

The Owner may sell, re-assign, or transfer ownership at any time, but not prior to the creation, documentation, and establishment of a successor. In the event the project ownership is sold, re-assigned or transferred, the stormwater operation and maintenance responsibilities shall also be transferred to the new Owner.

Temporary Stormwater Measures

Temporary stormwater measures are all those structural or non-structural practices intended to reduce or eliminate stormwater degradation and site erosion during active or inactive construction activities. Specifically, these temporary stormwater measures are purposefully chosen, sized and placed in such a manner that will result in stormwater and soil erosion mitigation. Ultimately, the monitoring and successful operations of all temporary stormwater measures shall be the Owner and Site Contractor's responsibility.

The proposed temporary stormwater measures are as follows (reasonable guide, not limited too):

- Stabilized construction entrance
- Hay Bales
- Silt Fence
- Silt Sock
- Material Stockpile Stabilization
- Mulching or Hydroseed or Erosion Control Blankets or Crushed Gravel Cover (travel lanes)
- Temporary Sediment Basins (where needed)
- Leaching Catch Basin Inlet Protection with Silt Sacks

All temporary stormwater measures costs are the responsibility of the Owner and Site Contractor. The Owner, Developer (if applicable), and Site Contractor are responsible to operate, maintain, replace or replace all temporary stormwater measures until the project is completely stabilized.

Permanent Stormwater Measures

Permanent stormwater measures are all those structural or non-structural practices intended to reduce or eliminate stormwater degradation and site erosion following construction completion, site stabilization, and property occupancy. Specifically, these permanent measures are purposefully chosen, sized and placed in such a manner that will result in measurable stormwater quality, volume and velocity controls. Ultimately, the monitoring and successful operations of all permanent stormwater measures shall initially be the Contractor's responsibility. Once the site is completely stable, the stormwater system(s) are one hundred (100) percent complete and fully functional, as designed and approved, the Contractor may transfer operational and maintenance responsibilities to the financially responsible entity.

It is highly recommended that a trained third-party stormwater agent is contracted by the Owner or property manager to operate and maintain the stormwater system. Any and all such contractual arrangements will be added to the final Stormwater Operations and Maintenance Plan, as an addendum with continual updates, business registrations, certifications, and proper insurances, as applicable.

The proposed Project's permanent stormwater measures and structures are as follows:

- ❖ Permeable synthetic turf system with engineered infiltration stone base
- ❖ Underdrain collection piping and overflow connections
- ❖ Bioretention Rain Garden (receives all field and walkway runoff)
- ❖ Overflow to existing closed drainage system
- ❖ Stone edge drains and vegetated perimeter slopes

Estimated Annual Costs

Estimated annual stormwater operation and maintenance cost is **approximately $3,000 per year**, with potential peaks to $4,000 every fifth year for specialized turf grooming or media replacement. It is anticipated this plan will be fully implemented by the Town or a single company specializing in the stormwater maintenance of similar facilities.

Section B

Stormwater Operations

This section provides additional project-specific permanent (fully occupied, stabilized site, functional systems) stormwater O&M information, including the equipment storage during construction, snow management, stormwater systems, and general site operations and maintenance. All temporary measures, prior to full ownership transfer will be the Contractor's responsibility.

Material and Equipment Storage

Material and equipment storage will be done in a safe and proper manner during all construction activities. Landscape contractors, pest management contractors and general maintenance staff shall follow all applicable product manufacturers, state and federal guidelines for the storage and handling of materials and chemicals on site.

All debris shall be collected and disposed of offsite in a legal manner. Temporary snow storage may be permitted, in accordance with the approved permit plans in the pre-determined locations only. Yard waste and snow are prohibited from being deposited in, near or adjacent to the onsite stormwater resources.

After the construction phase is completed, it is anticipated that the Owner, Contractor, or HOA (if applicable) will contract all services and not have any onsite facilities to store property operational or maintenance material or equipment.

Stormwater Systems

The permanent stormwater system consists of two permeable turf fields draining through dense-graded stone and

underdrains to the bioretention rain garden. The engineered system provides on-site capture, infiltration, and treatment of all precipitation up to the 100-year storm. No untreated discharge reaches resource areas.

Key Components:

- ❖ Turf infiltration base (stone depth ≈ 12–18 in.)
- ❖ Underdrain network routed to rain garden
- ❖ Rain garden with engineered soil, vegetation, and overflow structure
- ❖ Existing outfall connection (unchanged)

Stormwater Operations and Maintenance

The permanent onsite drainage systems operations and maintenance can be self-performed by the Town, or assigned party/entity responsible. Typically, a long-term contract is established with industry-specific trained and licensed professionals capable of operating, inspecting, and maintaining the site-specific designed stormwater system.

In general, good housekeeping, common sense, responsible site operations, and timely maintenance include the following activities:

- **Site Maintenance:** The site and all its components shall be kept in a neat, orderly, and clean fashion. Routine upkeep shall be performed by either the Public Works Department, Owner's representatives, Property Management Staff, and/or their assigned.. Typical site maintenance activities shall include, but not be limited to responsible construction practices, road sweeping, using a vacuum sweeper and landscape management including intensive spring and fall season cleaning.
- **Trash Disposal:** After construction is completed, all common waste materials will be (1) the Town's responsibility. (1) The Town will be responsible for trash disposal according to their predetermined pick-up trash pick-up schedule.
- **Spill Control & Containment:** Spill control practices will be followed to minimize stormwater contamination from vehicle oil and petroleum leaks during the construction phase.

Stormwater Management System Maintenance

Component	Inspection Frequency	Key Maintenance Activities
Synthetic Turf Fields	Monthly Apr–Nov	Inspect surface for settlement, seams, or infill migration; sweep/sanitize as needed.
	Quarterly	Brush/groom turf to redistribute infill and maintain infiltration.
	Annual	Inspect underdrain outlets for clear flow.

Rain Garden	Monthly Apr–Oct	Inspect vegetation and inflow points; remove sediment/debris.
	Semi-annual	Check mulch depth, replace if < 2 in.; remove invasive species.
	After major storm > 1 in.	Verify ponding drains within 72 hrs; if not, till top 3 in. and restore infiltration.
Underdrain Outlets / Overflow Structures	Quarterly	Flush as needed to prevent clogging.
Walkways and Perimeter Edges	Semi-annual	Sweep debris, inspect curb edges for infill migration; return material to field.

Source Control & Preventing Illicit Discharges

The following source control and pollution prevention measures shall be employed on the site to prevent contamination of stormwater runoff:

- Illicit discharges and unauthorized connections or discharge to the drainage system, rain garden, and catch basins are strictly prohibited.
- Routine maintenance will prevent migration of crumb-rubber infill beyond the field perimeter.
- No discharges from the turf drainage system will bypass the rain garden.
- No coal tar-based pavement sealants are to be used on site.

Section C

Management, Training, and Certification

This section will provide additional project-specific stormwater maintenance information, including management, training and certifications, observation log, correction action log, and project representative BMP library.

Permanent stormwater systems are to be monitored, operated, and maintained by trained individuals, certified in stormwater management practices. Either the Contractor, Developer, HOA (if applicable) or Property Management staff may become trained and certified or utilize a professional contractor with the appropriate training and certifications, capable of responsible stormwater systems operation and maintenance compliance.

The Contractor, Owner, HOA (if applicable) or Property Management shall maintain current records of stormwater management training and certifications of all, as typically required and performed within the SWPPP documentation.

Observation Log

The Contractor, Owner, or Property Management and/or their stormwater consultants are responsible for completing stormwater observation logs in compliance with state and local stormwater compliance regulations, in

addition to the suggested manufacturer specifications.

Correction Action Log

When required and as necessary, corrective action logs shall be prepared. The purpose and intent of correction action logs are to document stormwater occurrences that require additional, amended, or revised stormwater measures than those approved/permitted devices in operation.

Stormwater measures may require corrective action logs. The creation, documentation and corrective action log reporting shall be the Contractor, Owner, HOA or Property Management's and/or their stormwater consultant(s) responsibility.

Annual O&M review meetings shall be held between the Burlington School Department, DPW, and contracted turf maintenance vendor to confirm system performance and coordinate any adaptive management actions recommended by Nesra Engineering.

Compliance and Certification Statement

To the best of my knowledge and understanding, the undersigned recognizes the validity and importance of compliance with the Stormwater Operations and Maintenance Plan, as generally outlined and described herein. The undersigned further agrees to participate in the advancement and notification of this document and all future interested parties or entities responsible for the effective and meaningful operations and maintenance of both temporary and permanent stormwater systems.

_____

Contractor (Company, Name and Title) Date

_____

Owner (Name and Title) Date

APPENDIX

Stormwater Management System Operation and Maintenance Forms

NESRA ENGINEERING

STORMWATER MANAGEMENT SYSTEM

OPERATIONS AND MAINTENANCE MANUAL

TURF UNDERDRAIN OUTLETS

Inspection Date	Satisfactory			Location	Maintenance Needed and Description	Implementation Date of Maintenance
	Yes	No	N/A			

Name of Inspector: _____ Title: _____

Signature: _____

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STORMWATER MANAGEMENT SYSTEM

OPERATIONS AND MAINTENANCE MANUAL

RAIN GARDEN

Inspection Date	Satisfactory			Location	Maintenance Needed and Description	Implementation Date of Maintenance
	Yes	No	N/A			

Name of Inspector: _____ Title: _____

Signature: _____