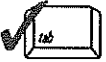




# Checklist for Stormwater Report

## 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

## 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.

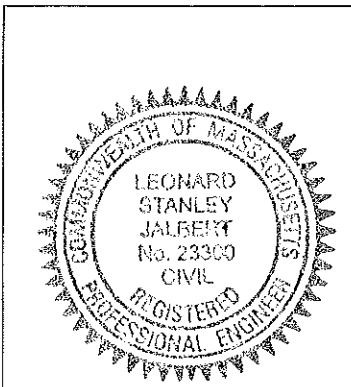
*Note:* Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that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

### 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



*Leonard Stanley Jalbert* 06/23-2023  
Signature and Date

### 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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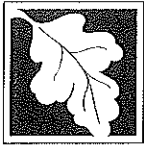
## Checklist (continued)

**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

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## 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.

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<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 propriety 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.



**Stormwater Operation and Maintenance Plan  
& Long-term Pollution Prevention Plan**

**for**

**Ashley Steppic**

60 Main Street

Sturbridge, MA

Job #23012

**June 23, 2023**

**Prepared by**

**Jalbert Engineering, Inc.**

54 Main Street

Sturbridge, MA 01566

**Stormwater Operation and Maintenance Plan**  
For  
**Ashley Steppic**  
60 Main Street  
Sturbridge, MA  
Job #23012

This is an Operation and Maintenance Plan for the Definitive Site plan.

Current Operator:

Ashley Steppic  
60 Main Street  
Sturbridge, MA 01566

Long term Operator of Stormwater System:

Owner of the site

**Stormwater Management Systems**

The stormwater management system for the site is as follows:

- Deep Sump Hooded Catch Basin
- Bio-Retention Area

**Maintenance Procedures**

**Maintenance log shall be completed after any maintenance is performed on any component listed. (See attached Maintenance Log sheet)**

*Asphalt Area*

Check for sediment accumulation in spring and fall

*Catch Basin*

Check for sediment accumulation quarterly, maintenance required when the depth of deposits is greater than or equal to one half of the sump depth.

*Bio-Retention Area*

Check for sediment accumulation and trash monthly

### **Inspection Schedule**

**The inspection log shall be completed after every inspection of each component listed below. (See attached Inspection Log sheet)**

#### *Asphalt Area*

In spring, sand is to be removed from the asphalt parking areas by a mechanical broom or a vacuum truck. Gravel areas to be inspected for erosion or pot holes and be marinated as needed. Remove sediment more frequently if needed.

#### *Catch Basins*

After winter sand is removed from the parking lot, use a clamshell to remove sediment from the sump of catch basin and inspect hood to ensure proper use. Remove sediment more frequently if needed.

#### *Bio-Retention Area:*

Remove accumulated sediment as needed. Mow the bio-retention area 2-12 times per year. Mulch, fertilize, remove dead vegetation and prune shrubs annually.

### **Plans:**

Plans indicating the location and features of the stormwater management system can be found on the site plan for Ashley Steppic.

### **Description of Public Safety Features:**

All features associated with the stormwater controls are located above ground and are designed with a maximum of 3:1 slopes so should not pose any danger to the public.

### **Operation and Maintenance Budget:**

The owner will have to pay for a service to perform the operation and maintenance described above; therefore the budget is mainly for labor and disposal of sediment collected.

The estimated yearly cost is approximately \$1,000.00



**Long-term Pollution Prevention Plan**  
for  
**Ashley Steppic**  
60 Main Street  
Sturbridge, MA

This is a Long-term Pollution Prevention Plan for the above-mentioned site.

Current Operator:

Ashley Steppic  
60 Main Street  
Sturbridge, MA 01566

Long term Operator of Plan:

Owner of the Site

**Good Housekeeping:**

Good housekeeping practices, outlined below, will be used on site:

An effort will be made to store only enough products that will be needed.

All materials stored on site will be stored neatly, in their appropriate containers, and, if possible, under a roof or other enclosure.

Products will be kept in their original containers with the original manufacturer's label.

Substances will not be mixed with one another unless recommended by the manufacturer.

Whenever possible, all of a product will be used up before disposing of the container.

Manufacturer's recommendations for proper use and disposal will be followed.

**Routine Inspections:**

Routine inspections and procedures are outlined in the Stormwater Operation & Maintenance Plan.

**Waste Materials:**

All waste materials will be collected and stored in a metal dumpster. All trash and debris from the site will be deposited in the dumpsters. Dumpsters will be emptied weekly or more often if necessary, and the trash will be hauled off-site to an approved waste facility. No construction waste materials will be buried on site. All personnel will be instructed regarding the correct procedures for waste disposal. Individual(s) managing day-to-day operations will be responsible for seeing that these procedures are followed.

**Hazardous Waste:**

All hazardous waste materials will be disposed of in the manner specified by local or state regulation or by the manufacturer. Site personnel will be instructed in these practices and the individual managing day-to-day operations will be responsible for implementing these practices.

**Hazardous Materials:**

These practices will be used to reduce the risks associated with hazardous materials.

Products will be kept in original containers unless they are not re-sealable. Original labels and material safety data sheets (MSDS) will be retained; they contain important product information. Manufacturers' and local and/or state recommended methods for proper disposal of excess materials will be followed.

**Spill Control Practices:**

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be used for spill prevention and cleanup:

Manufacturers' recommended methods for spill cleanup will be clearly posted and site personnel will be familiar with the procedures and location of the information and cleanup supplies.

Materials and equipment necessary for spill cleanup will be kept in the material storage area on site. Equipment and materials will include, but not be limited to, brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.

All spills will be cleaned up immediately upon discovery.

Spill areas will be kept well ventilated, and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.

Spills of toxic or hazardous material will be reported to the appropriate state or local government agency, regardless of the size of the spill.

The spill prevention plan will be adjusted to include measures to prevent this type of spill from re-occurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included.

**Snow and Ice Management:**

Any deicing materials will be stored indoors and used per manufacturer's recommendations. Site personnel will be instructed in these practices and the individual managing day-to-day operations will be responsible for implementing these practices.

**Grass Cutting:**

The grass shall be cut to a depth of no less than 3 inches and should be cut as needed during the growing season.

**Supporting Plans & Analyses:**

Proposed Site Plan and Detail Drawings

Stormwater Operation and Maintenance Plan, Stormwater Drainage Analysis

## STORMWATER MANAGEMENT CALCULATIONS

### **Standard #1, No New Untreated Discharges:**

No new untreated discharges are proposed to existing wetland resources. The proposed site development will follow the same drainage patterns as the existing.

### **Standard #2, Post-development peak Discharge Rates:**

Post-development peak discharge rates are demonstrated on the Summary page of this report. Post-development peak discharge rates do not exceed pre-development rates on the site at the points of discharge.

### **Standard #3, Recharge to groundwater**

There will be an additional 1,385 s.f. of impervious surfaces to the site once developed. The recharge requirement will be met within the proposed rain garden and the additional proposed grassed area. The rain garden will have a capacity of 1,930 cubic feet of recharge.

Hydrologic Soil Group "C" = 0.25 in/hr  
 $1,385 \text{ s.f.} * 0.25 \text{ in/hr} / 12 = 29 \text{ c.f. required}$

The site is mapped by the NRCS Soil Survey as a Hydrologic Soil Group C soils.

Drawdown Calculation:

$\text{Drawdown Time} = Rv / [K * \text{Bottom Area}]$

$Rv = 29 \text{ c.f.}$

$K = 0.17 \text{ in/hr}$

$\text{Bottom Area} = 170 \text{ s.f.}$

$\text{Drawdown Time} = 29 \text{ c.f.} / [0.17 \text{ in/hr} * 1/12 * 170 \text{ s.f.}]$

$= 12 \text{ hours} < 72 \text{ hours} \quad \text{OK}$

### **Standard #4, 80% TSS Removal**

TSS removal is met through the use of a bio-retention area.



Water quality volume:  $1,385 \text{ s.f.} * 0.50 \text{ in}/12 = 58 \text{ c.f.}$   
Bio-retention area provides 58 c.f. of storage.

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

The proposed Land Use is not a listed Higher Potential Pollutant Load.

**Standard #6, Critical Areas**

The site does not discharge to a critical area

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

The site is not a redevelopment project

**Standard #8, Construction Period Pollution Prevention and Erosion and Sedimentation Control**

A Site Plan that shows stormwater controls & erosion control measures has been provided under the title of "Proposed Site for Ashley Steppic.

**Standard #9, Operation/maintenance plan**

See Attached Operation/maintenance plan

Tributary to BioRetention Area

Ashley Steppic

60 Main Street, Sturbridge MA 01566

Location:

# TSS Removal Calculation Worksheet

B BMP	C TSS Removal 0	D Starting TSS Load	E Amount Removed (C*D)	F Remaining Load (D-E)
Bio Retention Area	0.90	1.00	0.90	0.10
	0.00	0.10	0.00	0.10
	0.00	0.10	0.00	0.10
	0.00	0.10	0.00	0.10
	0.00	0.10	0.00	0.10

Separate Form  
Needs to be  
Completed for  
Each Outlet or  
BMP Train

90%

**Total TSS Removal =**

\*Equals remaining load from previous BMP (E)  
which enters the BMP

23012
L.S. Jalbert
6/26/2023

Project No.

Information for Calculating Stormwater Discharge Rates on Small Projects

$$Q = CIA$$

Where,

Q=peak discharge, cfs

C=Runoff Coefficient

i=Rainfall Intensity, in/hr

A=Area, acres

Ms. Ashley Steppic  
60 Main Street  
Sturbridge, MA 01566  
JOB NUMBER 23012  
REDEVELOPMENT-COMMERICAL

Below are the suggested i values for small watersheds.

(Taken from Boston Intensity-Duration-Frequency Curve; assuming 5 minute time of concentration)

Storm Event	Rainfall Intensity, i (in/hr)
2 Year	4.1
10 Year	5.4
100 Year	7.4

Suggested C factors (conservative, but commonly used values).

Surface	Runoff Coefficient, C
Impervious (e.g. roof, pavement)	0.9
Semi-pervious	0.4
Pervious (e.g. grass)	0.3

Parcel Area: 0.33 Acres Redelvelment Area: 7,928 sq.ft. (.0182a.)  
Data: House area:0.0205 a. Parking lot: .0257 a. Lawn: 0.122 a.  
Walkways: .0072 a. Deck areas: .0052a.

2 Year Storm

Existing Site

$$(0.9)(4.1)(.0393) = .145 \text{ cfs}$$

$$(0.3)(4.1)(0.182) = .224 \text{ cfs}$$

10 Year Storm

Existing Site

$$(0.9)(5.4)(.0393) = .191 \text{ cfs}$$

$$(0.3)(5.4)(.182) = .295 \text{ cfs}$$

100 Year Storm

Existing Site

$$(0.9)(7.4)(.0393) = .262 \text{ cfs}$$

$$(0.3)(7.4)(.182) = .404 \text{ cfs}$$

2 Year Storm

Proposed Site

$$(0.9)(4.1)(.0255) = .0941 \text{ cfs}$$

$$(0.3)(4.1)(.122) = .150 \text{ cfs}$$

$$(0.9)(4.1)(.0329) = .121 \text{ cfs}$$

10 Year Storm

Proposed Site

$$(0.9)(5.4)(.0584) = .284 \text{ cfs}$$

$$(0.3)(5.4)(.122) = .197 \text{ cfs}$$

100 Year Storm

Proposed Site

$$(0.9)(7.4)(.0584) = .389 \text{ cfs}$$

$$(0.3)(7.4)(.122) = .271 \text{ cfs}$$

## Required Tables & Checklist for RDA and NOI Filings

**Buffer Zone Resource Area Disturbance Table (Square Feet)**

	0 to 50 FOOT BUFFER ZONE			50 to 100 FOOT BUFFER ZONE		
	Existing	Proposed	Difference	Existing	Proposed	Difference
Work access & graded area	N/A			N/A		
Semi-pervious *						
Impervious **						
Total Disturbance	----	----		----	----	

\* Semi-pervious includes: pervious asphalt or paver driveway, decks, dry-laid walkways and patios

\*\* Impervious includes: house, septic tanks, paved or gravel driveways, wet-set walkways and patios, pool

Shade the plan (in grey) all new areas of impervious area within the 100' Buffer Zone

Crosshatch (in black) all removed areas of impervious area within the 100' Buffer Zone

**Riverfront Resource Area Disturbance Table - if applicable (Square Feet)**

	0 to 100 FOOT RIVERFRONT			100 to 200 FOOT RIVERFRONT		
	Existing	Proposed	Difference	Existing	Proposed	Difference
Work access & graded area	N/A			N/A		
Semi-pervious *						
Impervious **	NOT APPLICABLE					
Total Disturbance	----	----		----	----	

**Stormwater Discharge Rates for Drainage Area (cfs) (incl. area outside 100' BZ if applicable)**

Storm Event	Pre-Condition	Post-Condition	Difference (cfs)	Difference (%)
2 Year	.369 cfs	.365 cfs	.008	-2.16%
10 Year	.486 cfs	.481 cfs	.005	-1.03%
100 Year	.666 cfs	.660 cfs	.006 cfs	-.9%

### Checklist for Best Stormwater, Construction Site & Landscape Maintenance Practices

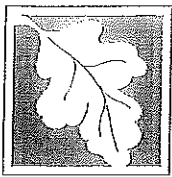
- This project will not result in any new stormwater conveyances that will discharge untreated stormwater directly to or cause erosion in the wetland, buffer zone or riverfront resource areas.  
Proposed *Green Infrastructure* – (circle) sheet flow, swale, rain garden, other \_\_\_\_\_  
Proposed *Hard Infrastructure* – (circle) stone drip edge, drywell, chambers, other \_\_\_\_\_
- As indicated above, post-dev. discharge rates will not exceed pre-dev. discharge rates
- This project will not result in the loss of annual recharge to groundwater
- This project employs the following best construction practices in order to prevent pollutants and suspended solids from entering the wetland, buffer zone and riverfront resource areas.
  - o Erosion controls and construction fencing will be installed and maintained
  - o Stone aprons and construction staging areas will be used and maintained
  - o Topsoil stockpile areas and waste & recycling dumpsters will be used and maintained
  - o Import and export of natural materials will be minimized
- This project employs the following best landscape practices in order to prevent pollutants and suspended solids from entering the wetland, buffer zone and riverfront resource areas.
  - o Salt, sand and deicing chemicals will be minimized and only used as needed
  - o Fertilizers, herbicides and pesticides will be minimized and only used as needed
  - o All disturbed soils will be stabilized and planted with regionally native vegetation
  - o New infestations of invasive species will be properly managed

			06/06/2023
Applicant's Signature	Date	Representative's Signature	Date

## SUMMARY

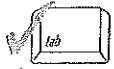
The proposed development will have a decrease in peak rate of runoff for the site. A comparison of the rates of runoff for storms of various return periods are tabulated and presented below.

<u>Return</u> <u>Period</u>	<u>Total Runoff to the Existing Wetland</u>	
	<u>Exist.</u> <u>( cfs )</u>	<u>Prop.</u> <u>( cfs )</u>
2 yr	.369	.365
10 yr	.486	.481
100 yr	.666	.660



Massachusetts Department of Environmental Protection  
 Bureau of Resource Protection - Wetlands  
**NOI Wetland Fee Transmittal Form**  
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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



**A. Applicant Information**

1. Location of Project:

60 MAIN STREET

a. Street Address

STURBRIDGE

b. City/Town

33099

c. Check number

\$250.00

d. Fee amount

2. Applicant Mailing Address:

LEONARD S.

a. First Name

JALBERT

b. Last Name

Jalbert Engineering, Inc.

c. Organization

54 MAIN STREET

d. Mailing Address

STURBRIDGE

e. City/Town

MA

f. State

01566

g. Zip Code

508-347-5136

h. Phone Number

508-347-7962

i. Fax Number

LSJALBERT@JALBERTENGINEERING.COM

j. Email Address

3. Property Owner (if different):

ASHLEY

a. First Name

STEPPIC

b. Last Name

OWNER

c. Organization

234 UPPER ROAD

d. Mailing Address

STAFFORD

e. City/Town

CT

f. State

06076

g. Zip Code

774-452-1695

h. Phone Number

i. Fax Number

j. Email Address

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

**B. Fees**

Fee should be calculated using the following process & worksheet. *Please see Instructions before filling out worksheet.*

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

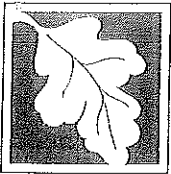
Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract \$12.50. To calculate the city/town share of the fee, divide the total fee in half and add \$12.50.



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**B. Fees** (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Category 2g			\$500.00

Step 5/Total Project Fee: \$500.00 \*\*

Step 6/Fee Payments:

Total Project Fee:	\$500.00
a. Total Fee from Step 5	\$500.00
State share of filing Fee:	\$250.00
b. 1/2 Total Fee less \$12.50	\$250.00
City/Town share of filling Fee:	\$250.00
c. 1/2 Total Fee plus \$12.50	\$250.00

**C. Submittal Requirements**

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection  
 Box 4062  
 Boston, MA 02211

b.) To the Conservation Commission: Send the Notice of Intent or Abbreviated Notice of Intent; a copy of this form; and the city/town fee payment.

To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a copy of this form; and a copy of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)


\*\* Enclosed is the additional fee for the storm drain discharge.

JALBERT ENGINEERING, INC.  
 7 OLD VILLAGE ROAD  
 STURBRIDGE, MA 01566-1041

DATE	INVOICE	AMOUNT
	Ashley Steppic	
	new steam water	Discharge
	60 Main St (N.G.E)	
	Sturbridge	

53-7054/2113  
 33098

PAY Two hundred Fifty and <sup>none</sup>/<sub>100</sub> DOLLARS

CHECK AMOUNT  Security Features Included. Details on back.

DATE	TO THE ORDER OF	DESCRIPTION	CHECK NO.	AMOUNT
6/26/23	TOWN OF Sturbridge		33098	\$ 250.00

JALBERT ENGINEERING, INC.  
 STURBRIDGE, MA.

*Leonard A. Galbert*

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⑈033098⑈ ⑆266370545⑆ 8242876677⑈

JALBERT ENGINEERING, INC.  
 7 OLD VILLAGE ROAD  
 STURBRIDGE, MA 01566-1041

DATE	INVOICE	AMOUNT
	Ashley Steppic	
	60 Main St. Sturbridge N.G.E.	
	Discharge (EXTRA)	

53-7054/2113  
 33099

PAY Two hundred Fifty and <sup>none</sup>/<sub>100</sub> DOLLARS

CHECK AMOUNT  Security Features Included. Details on back.

DATE	TO THE ORDER OF	DESCRIPTION	CHECK NO.	AMOUNT
6/26/23	Commonwealth of Massachusetts		33099	\$ 250.00

JALBERT ENGINEERING, INC.  
 STURBRIDGE, MA.

*Leonard A. Galbert*

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⑈033099⑈ ⑆266370545⑆ 8242876677⑈