

Stormwater Management System Report

TISBURY MARINE TERMINAL PROPOSED SITE IMPROVEMENTS DEP FILE No. SE074-0893

190 BEACH ROAD TISBURY, MASSACHUSETTS

Prepared for:

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Project No. 2371

FIELD
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CONSULTING ENGINEERS

Preface

Stormwater Management Standards Compliance Checklist



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.¹ 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 8²
- 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.

¹ 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.

² 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

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

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) (No net increase in impervious area)
- 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): Roof Drain Recharge Facility

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

Checklist (continued)

Standard 2: Peak Rate Attenuation (NOT APPLICABLE-NO NEW IMPERVIOUS SURFACE)

- 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 Field¹
- 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.

¹ 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.



Checklist for Stormwater Report

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

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) - NOT APPLICABLE

- 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: Redevelopment 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.

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Section 1

Hydrologic Overview

1.0 INTRODUCTION

1.1 Project Description

The applicant, Tisbury Marine Terminal, LLC, is proposing to perform a number of site improvements to their existing facility located at 190 Beach Road in the Town of Tisbury. The primary goals/objectives of the proposed project are to:

- Create a centralized control facility that has the unique ability to provide operational and maintenance services for offshore wind farms;
- Reduce global green-house gases by providing O&M services required to support offshore wind farms;
- Economic growth and job creation on Martha's Vineyard;
- Maintain and improve TMT marine infrastructure; and
- Enhanced public access to the shoreline while maintaining the working waterfront.

As described in detail in the Notice of Intent, the proposed project includes a number of improvements to the facility which has been in existence since the 1800's and includes but is not limited to the following:

- Replacement & Realignment of Existing Solid-fill Pier
- Barge Access & Berthing Area Improvements
- Steel Bulkhead Improvements
- Facility Berthing Area
- New Bulkhead & Fendering System
- New Pile-supported Pier Deck & Bulkhead
- Marine Support Building & Access Way

The proposed project is within a variety of coastal resource areas including Coastal Beach, Rocky Intertidal Shore, Land Under the Ocean, Barrier Beach (including Coastal Dune), Land Containing Shellfish, Land Subject to Coastal Storm Flowage, and is also within the 100-foot buffer zone to these resource areas. Other regulated areas within the proposed project area include historically mapped eelgrass and Natural Heritage and Endangered Species Program (NHESP) priority habitat of rare species and estimated habitat of rare wildlife. There is a portion of the NHESP within the proposed Operations and Maintenance facility berthing area and wave fence location as seen in the project plans. NHESP habitat are delineated in Massachusetts OLIVER GIS System and shown on project plan set. The applicant has filed a Notice of Intent for the proposed work which is currently being review by the Conservation Commission under MADEP File No. SE-074-0893.

1.2 Hydrologic Overview and Stormwater Management System Summary

The Dukes County Soil Conservation Service (SCS) mapping for this area indicates one major soil type, Urban Land, in the project area. The soil classification is as follows:

- Urban Land (602B), 0 to 8 percent slopes

There are minimal impervious surfaces within the project area that is proposed to be improved as a result of this project. The overwhelming majority of the runoff that falls on the site infiltrates into the ground through the existing gravel surfaces or flows directly into the harbor. A small portion of the runoff on the site would flow towards Beach

Road which is handled by a roadway drainage system. The intent of the design is to not allow any additional runoff to flow into Beach Road and maintain existing drainage patterns on the site. The existing solid fill pier area will be filled to existing grades surrounding the area and surfaced with similar gravel material as is existing allowing existing infiltrative capacities of the surface to remain. The applicant is proposing to construct an access driveway off of Beach Road which will consist of pervious pavement, once again allowing the majority of the runoff to infiltrate back into the ground. The proposed building is being constructed over previous gravel surface on top of a coastal dune and will be a pile supported structure. The runoff from the proposed building which represents the increase in impervious surface on the project site will flow through a subsurface recharge system which has been sized to retain the required recharge volume as specified in the Massachusetts Stormwater Management Handbook. The recharge system has been sized assuming A-type underlying soils.

In addition to the solid pier and building construction, the applicant is also proposing to construct a wood deck pier area as well as additional concrete piers supported with pilings over the harbor area. These areas will be open to the water below and will be designed to allow rainwater to continue to flow directly to the harbor through spacing in the decking on the wooden pier and scuppers on the concrete portions of the pier. This runoff will not come in direct extended contact with areas which could contribute significant amounts of TSS loading to the harbor.

The proposed stormwater management system incorporates a number of Best Management Practices (BMPs), as prescribed in the Department of Environmental Protection Stormwater Management Handbook. These practices include structural and non-structural measures providing stormwater quantity and quality management. These BMPs will function to minimize potential adverse water quality impacts to the surrounding wetland ecosystem. The following sections describe the temporary and permanent stormwater BMPs proposed for the site development.

The proposed stormwater management plan has been developed based on the projected site conditions and the present condition of the water resource areas that receive stormwater runoff from the site. The proposed BMPs have been designed to comply with the Massachusetts Stormwater Management Handbook. As described above, the runoff from the proposed roof areas will discharge to a subsurface recharge system which will take advantage of the underlying pervious soils and promote recharge on the site. Recharge volume calculations have been provided in Section 2 to show that more than adequate recharge volume has been provided on the project site to offset the new impervious surfaces being proposed.

1.3 Select Structural Best Management Practices (BMP's)

Subsurface Recharge System

Runoff from the clean roof drains from the new building will be discharged to a subsurface roof drain recharge system located on-site. The subsurface system will consist of plastic parabolic Cultec Contactor leaching chambers on a bed of double washed stone. These systems will achieve recharge to the groundwater through the underlying pervious soils as observed in borings performed throughout the property as well as material specified to be imported to fill the proposed pier/bulkhead area. The roof drain recharge systems will be allowed to overtop in the larger storm events through a 6" overflow pipe that will discharge directly into the harbor.

1.4 Select Non-Structural Best Management Practices (BMP's)

Pavement Sweeping Program

All pervious paved surfaces will be swept annually and after any major storm event exceeding 1" of rainfall over 24 hours. The sweeping program will remove contaminants directly from the paved surfaces before their release into the stormwater runoff. The U.S. Environmental Protection Agency has determined that pavement sweeping can be an

effective initial treatment for reducing pollutant loading into stormwater runoff. The pavement sweeping program will also assist in maintaining the pervious nature of the proposed porous pavement access driveway.

Stormwater Management System Maintenance Program

All structural components of the existing stormwater management system will be inspected and maintained on a regular basis in accordance with the requirements of the Stormwater Management Policy. A detailed Stormwater Management System Operation and Maintenance Plan has been prepared in accordance with the Stormwater Management Standards and Stormwater Management Handbook prepared by the Massachusetts Department of Environmental Protection.

1.5 Regulatory Compliance

The Massachusetts Stormwater Handbook, Volume 3 (February, 2008), has been used as the primary guidance for the selection and design of permanent non-structural and structural BMPs for the long-term protection of existing resource areas. The Stormwater Management Plan developed for this project incorporates water quality controls that will protect surface and groundwater resources, wetlands and adjacent properties from potential impacts due to increased impervious areas on the site.

The stormwater performance standards developed by the DEP and a brief discussion on how the proposed project will achieve the standards are provided below. A Stormwater Management System Compliance Certification and Checklist is included as a Preface to this Report.

Standard 1. No new stormwater conveyances may discharge untreated stormwater directly to, or cause erosion in wetlands or waters of the Commonwealth.

- No proposed site stormwater conveyance system will discharge untreated stormwater runoff directly to resource areas or cause erosion.

Standard 2. Stormwater management systems shall be designed so that the post-development peak discharge rates do not exceed pre-development peak discharge rates.

- The runoff from the site discharges to a coastal flood zone and would be subject to a waiver of Standard 2.

Standard 3. Loss of annual recharge to groundwater shall be eliminated or minimized through the use of environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.

- The runoff from the roof of the proposed Marine Support Building will flow through a subsurface recharge system to provide the required recharge volume associated with the new impervious surfaces related to the project. Recharge calculations are provided in Section 2 of this Report.

Standard 4. Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This standard is met when:

- a) Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;
- b) Structural stormwater best management practices are sized to capture the required water quality volume as determined in accordance with the Massachusetts Stormwater Handbook; and
- c) Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.

- The proposed project consists of the reconstruction of an existing gravel maintenance yard and the construction of a proposed building over existing gravel area amongst other site improvements. There are no other proposed impervious surfaces associated with the project, therefore TSS removal is not necessary.

Standard 5. For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If, through source control and/or pollution prevention, all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L.c. 21, §§ 26-53 and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

- The proposed project is not considered a high intensity use with higher potential pollutant loads.

Standard 6. Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharges near or to any other critical area require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook.

- The only stormwater discharge would be from the overflow of the roof drain recharge system and would consist of clean roof water. Therefore, there would be no negative impact to any critical areas as a result of this project.

Standard 7. A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

- While portions of the project may be considered redevelopment under the Stormwater Management Standards, the project as a whole has been designed to meet all of the Standards of the Stormwater Management Handbook.

Standard 8. A plan to control construction-related impacts, including erosion, sedimentation, and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.

- The proposed project covered under this Stormwater Management System Report is for the construction of a number of improvements to an existing terminal in the Town of Tisbury on Martha's Vineyard. As described in the Notice of Intent, floating booms will be installed around the work area to collect any debris that may enter the waterway. The Order of Conditions should include erosion control measures to be implemented at the time of construction, including erosion and sediment controls such as silt fence at the limits of work, temporary stone pads at construction entrances, and silt protection in any existing stormwater management structures within the adjacent Beach Road. A Construction Period Stormwater Pollution Prevention Plan has been provided as an Appendix to this Report.

Standard 9. A Long-Term Operation and Maintenance (O&M) Plan shall be developed and implemented to ensure that stormwater management systems function as designed.

- The Stormwater Management Plan for this project has been developed in compliance with the DEP Stormwater Management Policy. The Plan is based on a multi-dimensional approach to stormwater management that recognizes the need for proper site planning, source control of potential contaminants, and implementation of structural and non-structural treatment methods to ensure the protection of water resources in the vicinity of the site and adjacent properties. A detailed Long-Term Operation and Maintenance Plan is included in the in following sections.

Standard 10. Illicit Discharges to the Stormwater Management System are prohibited.

- An Illicit Discharge Compliance Statement has been completed and is attached to this Stormwater Management System Report.

1.5 Post Construction (Long Term) Operation and Maintenance Plan

Name and address of the Owner of Record

Tisbury Marine Terminal
190 Beach Road
Tisbury, Massachusetts 02568

1. The contractor shall be responsible for the proper inspection and maintenance of all stormwater management facilities until such time as the Stormwater Management System is accepted by the Owner. Thereafter the Owner shall be responsible for the proper inspection and maintenance of the stormwater facilities in accordance with this Operation and Maintenance Plan as well as the continuing conditions of the Certificate of Compliance on the property.
2. All Structural Best Management Practices (BMP's) should be inspected after every major rainfall event exceeding 1.0-inch for the first 6 months after construction to ensure proper stabilization, construction, and function.
3. Thereafter, regular BMP inspections should be conducted according to the following schedule:

<u>BMP Structure</u>	<u>Inspections per Year</u>
Roof Drain Recharge System	1

4. The contractor and the owner shall maintain and submit to the Conservation Commission (if requested) a BMP Inspection Report following each site inspection as recommended above. The BMP Inspection report shall identify the Date of Inspection, the name and contact number of the responsible party, specific structures inspected, specific maintenance required and observations at a minimum, inspection reports should address the following conditions:
 1. Erosion
 2. Accumulations of sediment removed from drainage structures
5. Accumulated sediment and trash should be removed a minimum of two times per year or if sediment exceeds three inches in depth.
6. All removed sediments are to be properly disposed of at a location to be approved by the Board of Health. Transportation and disposal of sediments shall comply with all applicable local, state, and federal regulations.
7. No disposal of materials shall be permitted within the buffer zones or resource areas on the project site. This prohibition applies to trash, fill material, construction debris, grass clippings, collected leaves and cut branches.
8. Any deficiencies noted during an inspection shall be reported to and corrected to the satisfaction of the project engineer and/or Conservation Commission.
9. An Operation and Maintenance Inspection Form shall be developed and copies of the completed forms shall be submitted to the Owner and Conservation Commission in accordance with the determined schedule.

10. The Owner shall either conduct the maintenance themselves or contract with a maintenance company to perform the operation and maintenance of the stormwater management system. The contact information for this company, if applicable, shall be provided to the Conservation Commission for their files.
11. Street sweeping shall be performed annually in the spring following the winter season as well as after any major storm event exceeding 1" of rainfall over 24 hours. Pervious pavement shall be installed and maintained in accordance with manufacturer's recommendations.

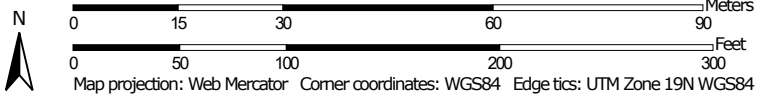
Section 2

Supplemental Data

Soil Map—Dukes County, Massachusetts




Map Scale: 1:1,080 if printed on A landscape (11" x 8.5") sheet.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils


 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.
 Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Dukes County, Massachusetts
 Survey Area Data: Version 17, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Nov 5, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
602	Urban land	2.4	74.3%
608	Water, ocean	0.3	7.9%
610	Beaches, sand	0.5	16.9%
612C	Hooksan sand, 3 to 15 percent slopes	0.0	0.8%
Totals for Area of Interest		3.2	100.0%

RECHARGE VOLUME CALCULATIONS - POST 1

Client:	Tisbury Marine Terminal	Job No.	2371
Project:	Tisbury Marine Terminal	Date:	10/9/2020
Location:	Beach Road, Tisbury	Design by:	Foth

RECHARGE VOLUME CALCULATIONS

HYDROLOGIC SOIL GROUP	A
UNIT VOLUME (in.) =	0.60
IMPERVIOUS AREA (s.f.) =	9,511
RECHARGE VOLUME (cu.ft.) =	476

AVAILABLE VOLUME CALCULATION (CULTEC FIELD)

5 Chambers/Row x 7.50' Long +0.50' Row Adjustment = 38.00' Row Length +12.0" End Stone x 2 = 40.00' Base Length

3 Rows x 36.0" Wide + 4.0" Spacing x 2 + 12.0" Side Stone x 2 = 11.67' Base Width

6.0" Base + 12.5" Chamber Height + 6.0" Cover = 2.04' Field Height

952.8 cf Field - 212.2 cf Chambers = 740.6 cf Stone x 40.0% Voids = 296.2 cf Stone Storage

Chamber Storage + Stone Storage = 508.4 cf = 0.012 af

RECHARGE VOLUME PROVIDED	508.4	0.012
RECHARGE VOLUME REQUIRED	475.6	0.011

DRAWDOWN TIME CALCULATION

DRAWDOWN TIME=(REQ.RECH. VOL.)/(DES. INFILTRATION RATE "K"*BOTTOM AREA)

RECHARGE VOLUME PROVIDED (CF)=	508.4	
DESIGN INFILTRATION RATE (IN/HR)=	2.41	
BOTTOM AREA(SF)=	466.8	
DRAWDOWN TIME (HRS)=	5.4	OK

Appendix A

Construction Period Stormwater Pollution Prevention Plan

Construction Period Pollution Prevention and
Erosion and Sedimentation Control Plan
Tisbury Marine Terminal
190 Beach Road
Tisbury, Massachusetts

1. Narrative

The applicant, Tisbury Marine Terminal, LLC, is proposing to perform a number of site improvements to their existing facility located at 190 Beach Road in the Town of Tisbury, The primary goals/objectives of the proposed project are to:

- Create a centralized control facility that has the unique ability to provide operational and maintenance services for offshore wind farms;
- Reduce global green-house gases by providing O&M services required to support offshore wind farms;
- Economic growth and job creation on Martha's Vineyard;
- Maintain and improve TMT marine infrastructure; and
- Enhanced public access to the shoreline while maintaining the working waterfront.

As described in detail in the Notice of Intent, the proposed project includes a number of improvements to the facility which has been in existence since the 1800's and includes but is not limited to the following:

- Replacement & Realignment of Existing Solid-fill Pier
- Barge Access & Berthing Area Improvements
- Steel Bulkhead Improvements
- Facility Berthing Area
- New Bulkhead & Fendering System
- New Pile-supported Pier Deck & Bulkhead
- Marine Support Building & Access Way

2. Construction Plan Pollution Prevention Measures and Operation and Maintenance Plan

Prior to the performance of any construction the contractors shall install floating booms around the work area. These booms will prevent the migration of any construction debris outside of the work area to downgradient and off-site receptors.

The floating booms will be inspected and maintained/repared at the beginning of each work day until all work has been completed. Debris will be removed on a regular basis.

Upon completion of the work and stabilization of all disturbed surfaces, the erosion controls will be removed and properly disposed of by the contractor.

3. Person or Entity Responsible for Plan Compliance

Tisbury Marine Terminal LLC
190 Beach Road
Tisbury, Massachusetts

4. Construction Plan Pollution Prevention Measures

The previously described floating booms will be used for pollution prevention to the surrounding coastal resource areas. Additionally, silt protection shall be installed in any stormwater inlets within close proximity of the project site to minimize the potential for debris entering the stormwater management system. Finally, crushed stone tracking pads will be installed at any construction entrance off Beach Road to minimize the potential for tracking of sediment off of the project site.

5. Vegetation Planning

Any disturbed surfaces will be restore to pre-existing conditions. Areas not being covered by pervious pavement, pavers, building or gravel for maintenance and storage of materials and equipment will be loam and seeded to establish vegetation and stabilize these areas.

6. Site Plan Erosion and Sedimentation Control Plan Drawings

The proposed site plans included with the Notice of Intent application that has been previously prepared and submitted for the project by Foth Infrastructure and Environment for the applicant shall serve as the erosion and sedimentation control plan drawings for the project. Floating booms have been specified on the plans and in the narrative and are to be approved by the Tisbury Conservation Commission prior to construction.

7. Inspection and Maintenance Log Form

A sample inspection and maintenance log form is attached.

Appendix B

Long Term Pollution Prevention Plan

Long Term Pollution Prevention Plan
Tisbury Marine Terminal
190 Beach Road
Tisbury, Massachusetts

1.0 Introduction

This Long Term Pollution Prevention Plan has been prepared in accordance with the Massachusetts Stormwater Handbook for Compliance with Stormwater Standards 4-6.

2.0 Good Housekeeping Practices/Storage Provisions

Good housekeeping practices including periodic inspections of stormwater management system components will be performed in accordance with the Stormwater Management System Operation and Maintenance Plan. It is not anticipated that any high pollutant materials would discharge directly to Town Wharf and/or the coastal wetland systems.

3.0 Routine Maintenance of Stormwater BMP's

The Stormwater BMP's including any existing stormwater structures will all be operated and maintained in accordance with the Stormwater Management System Operation and Maintenance Plan.

4.0 Landscaping Provisions

Disposal of any landscaping waste will be prohibited from any areas being used for stormwater management as well as in the coastal wetland resource areas.

5.0 Pet Waste Management Provisions

Any pet waste will be required to be cleaned by the pet owner.

6.0 Snow Disposal Guidelines

Plowing directly into the wetland resource areas or buffer zones will not be permitted. All snow stored on site will melt and flow through the stormwater management system.

7.0 Winter Road Salt and Sand Use

Sand will be used wherever possible during the winter months.

8.0 Street Sweeping Schedules

It is anticipated that street sweeping will be performed on an annual basis in the spring following the winter season.

9.0 Illicit Discharge Prevention

An Illicit Discharge Compliance Statement has been provided in this stormwater management system report. Illicit connections to the stormwater management system will be strictly prohibited. Any contractors performing work at the site will be notified of the prohibition of any illicit connections to the stormwater management system. All work done on site shall be per the approved design plans.

10.0 Training for Staff

Tisbury Marine Terminal personnel will be properly trained (as required) in the operation and maintenance of the Stormwater Management System. In addition, Tisbury Marine Terminal will work with the Town of Tisbury on the maintenance of the existing stormwater management system in the vicinity of the site.

11.0 Emergency Contacts

Tisbury Marine Terminal would be the emergency contacts for any implementation measures that may be required on this Long-Term Pollution Prevention Plan. Emergency contact information will be posted throughout the facility.

Appendix C

Illicit Discharge Compliance Statement

Illicit Discharge Compliance Statement
Tisbury Marine Terminal
190 Beach Road
Tisbury, Massachusetts

1.0 Description of Illicit Discharges

Illicit discharges are discharges to the stormwater management system that are not entirely composed of stormwater. Illicit discharges include (but are not limited to) wastewater discharges and discharges of stormwater contaminated by contact with process wastes, raw materials, toxic pollutants, hazardous substances, oil, or grease.

2.0 Illicit Discharge Prevention

The project, as designed, does not provide for any illicit connections to the proposed stormwater management system. As part of the long-term pollution prevention plan that will be on file at the Tisbury Marine Terminal, illicit connections to the stormwater management system will be strictly prohibited. Any contractors performing work at the site will be notified of the prohibition of any illicit connections to the stormwater management system.

3.0 Training for Staff

The Tisbury Marine Terminal staff will be properly trained as required to detect any unauthorized illicit discharges to the stormwater management system and eliminate them as soon as possible. It is anticipated that the Tisbury Marine Terminal personnel will be performing routine maintenance on the stormwater management system and at this time would be able to detect any unauthorized illicit discharges.

4.0 Site Map

Refer to sketch plans and proposed building drawings attached to the Notice of Intent for locations and information on the stormwater management system associated with this project.

5.0 Certification

As the design plan shows, there are no provisions for illicit discharges to the stormwater management system being proposed. Additionally, there are no proposed connections between any stormwater and wastewater management systems. Illicit discharges will be prohibited to the existing stormwater management system associated with the Tisbury Marine Terminal and staff will be trained to detect any unauthorized illicit discharges and to eliminate them as soon as possible.

Richard R. Riccio III, P.E.