# 1 Project Narrative

## 1.1 Introduction

Fuss & O'Neill has prepared this Soil Erosion and Sediment Control (SESC) Report for construction activities associated with the Main Street Dam and Slater Mill Dam – Blackstone River Fish Passage Restoration Project, located in Pawtucket, Rhode Island. The project includes the construction of a vertical slot fishway, access improvements to the fishway and the Blackstone River to allow future public access to the river and operation and maintenance access to the fishway, and stormwater management. The proposed stormwater management system consists of using pervious materials for the new pedestrian and vehicle access improvements, impervious materials will not be used for the construction of access improvements. The purpose of this SESC Report is to describe the erosion and sedimentation controls that shall be employed during and after construction of the project, and to provide appropriate maintenance measures for the controls.

This project is defined as a "construction activity" in the *General Permit for the Rhode Island Discharge Elimination System* (RIPDES) *Stormwater Discharge Associated with Construction Activity*, dated September 2020. The contractor shall be responsible for implementing all elements of the erosion and sedimentation control measures defined within this SESC Report during construction and complying with the terms and conditions of the General Permit. The property owner shall be responsible thereafter. The project will not be considered complete until all disturbed areas have been satisfactorily stabilized, any erosion that has occurred on-site has been repaired, and all temporary erosion and sedimentation controls have been removed.

The SESC Report shall be stored and maintained on-site at all times during the extent of coverage under the General Permit. A copy of the General Permit is provided in *Appendix B*.

## 1.2 Project Description

The project includes the construction of a vertical slot fishway, access improvements to the fishway and the Blackstone River to allow future public access to the river and operation and maintenance access to the fishway, and stormwater management. Stormwater treatment and recharge will be provided by use of pervious surfaces such as porous pavers, porous concrete, permeable pavement, articulated concrete block designed in accordance with the Rhode Island Stormwater Management, Design, and Installation Rules (Stormwater Rules).

## 1.3 Site Conditions

The Site consists of three parcels of land adjacent to the Blackstone River that extends from downstream of the Main Street Dam to upd=stream of the Slater Mill Dam (See *Appendix A* for Site Location Map). Grades on the site generally slope down to the river and stormwater runoff from the site currently drains overland directly into the Blackstone River.

According to the Natural Resources Conservation Service's (NRCS) Web Soil Survey, the Site is underlain by the Merrimac–Urban land complex (0–8% slopes; 41% of site) and mapped Urban Land (37% of site), with smaller mapped areas of fresh water (W) and saline water (Ws) associated with the Blackstone and Seekonk Rivers (22%). The Merrimac–Urban land complex (MU) is dominated by well-drained sandy soils formed in glacial outwash and classified as hydrologic soil group (HSG) "A". Areas mapped as Urban Land consist of disturbed or

filled soils typical of dense historic development and lack a natural soil profile. As the site is majority MU, the site can be classified as hydrologic soil group (HSG) A for the purposes of hydrologic analysis.

The primary wetland resource identified near the project includes a deciduous wooded Swamp associated with wetland flags #100–112, in addition to the Blackstone River, a regulated riverine wetland. The wooded Swamp is located within the active floodplain and is subject to periodic inundation when river levels rise. At the time of inspection, portions of the Swamp showed evidence of recent flooding. Dominant vegetation within this wetland includes eastern cottonwood (Populus deltoides), silky dogwood (Swida amomum), purple loosestrife (Lythrum salicaria), and goldenrod (Solidago sp.). The wooded Swamp is less than one acre in size.

One Natural Heritage Area polygon overlaps the project site according to the RIDEM Environmental Resource Map (ID: 43). Consultation with RIDEM indicated that the mapped polygon represents observations of the common nighthawk (*Chordeiles minor*) and northern diamondback terrapin (*Malaclemys terrapin*). The common nighthawk, a species of State Concern, was last observed in 1986 approximately 1,000 ft north of the project site and presumably is no longer active in the area. As such, potential adverse impacts to the species are not anticipated as a result of the proposed project.

Based on the RIDEM Environmental Resource Map, the Site is in the Lower Blackstone River Subwatershed, which drains southward to the Seekonk River and ultimately Narragansett Bay. The Federal Emergency Management Agency (FEMA) Flood Map FIRM Panel 44007C0194J and Panel 44007C0307J, both effective October 2, 2015, indicate that the entire Site lies within Zone AE, an area of 100-year flood hazard. Portions of the river corridor are designated as Regulatory Floodway.

## 1.4 Construction Sequence

The construction sequence is listed on the Plans.

# 2 Erosion and Sedimentation Control

Temporary and permanent structural and nonstructural practices shall be implemented throughout the project to minimize erosion of soils from the disturbed site. These measures are proposed to provide protection against erosion and sedimentation both during and after construction. Erosion and sedimentation controls shall be continually monitored to ensure proper function. Additional controls shall be installed if conditions warrant and when directed by the property owner, representative of the property owner, or RIDEM.

Erosion and sediment control measures shall be constructed in accordance with the *Rhode Island Soil Erosion and Sediment Control Handbook* (2016) with latest addenda and revisions. Refer to Section 3.0 of this report for maintenance notes regarding the erosion controls.

## 2.1 Vegetative Practices

- **Temporary Vegetative Cover**: Temporary vegetative cover shall be applied to exposed soils and stockpiles that have not yet reached finished grade as soon as possible, but not more than 14 days after the construction activity in that area has temporarily ceased, unless the activity is to resume within 21 days.

Temporary vegetative cover shall be installed as outlined in the *Rhode Island Soil Erosion and Sediment Control Handbook* between the following recommended seeding dates: March 1 to July 15 and August 1 to October 15. Temporary vegetative cover shall consist of 60% Annual or Perennial Ryegrass and 40% Millet or Sudangrass or 100% Winter Rye. Optimum seeding dates for Millet and Sudangrass are between May 15 and July 15. Annual or Perennial Ryegrass shall be planted at a rate of 1.0 pounds per 1,000 square feet, Winter Rye shall be planted at a rate of 3.0 pounds per 1,000 square feet, and Millet or Sudangrass shall be planted at a rate of 0.5 pound per 1,000 square feet.

- **Permanent Vegetative Cover**: Permanent vegetative cover shall be applied within 14 days after the construction activity in a disturbed area has permanently ceased or when grading work within the limit of disturbance is to be suspended for a period of more than one year. Permanent vegetative cover shall be installed as outlined in the *Rhode Island Soil Erosion and Sediment Control Handbook* between the following recommended seeding dates: April 1 to June 15 and August 15 to September 30.

  Permanent vegetative cover shall receive the seed mixture and fertilizer in accordance with the Contract Documents.

- **Mulching**: If seeding cannot be completed immediately or within the recommended seeding dates, temporary mulching will be used to protect the site and delay seeding until the next recommended seeding period. Straw mulch, wood fiber mulch, and hydromulch are recommended. Wood fiber mulch should not be used alone in the winter or during hot, dry weather. Straw mulch shall be anchored immediately after spreading to prevent wind-blowing. Mulch anchoring should also be used on slopes greater than 3H:1V and concentrated flow areas such as diversion and waterway channels.

  All mulches shall be inspected periodically, particularly after rainstorms, to check for fill erosion. Where erosion is observed, additional mulch shall be applied. If netting is used, the netting should be inspected after rainstorms for dislocation or failure. If washouts or breakage occur, the netting shall be reinstalled as necessary after repairing damage to slope. Inspections should take place until grasses are firmly established. Grass is considered to be firmly established at a minimum height of three (3) inches.

## 2.2 Structural Practices

- **Perimeter Sediment Barriers**: Wattles or other approved sediment barriers shall be installed downgradient of the site as shown on the plans. Additional wattles may be used within the limit of disturbance to minimize the areas of exposed soils contributing runoff to the perimeter barrier.

- **Catch Basin Inlet Protection**: Silt sacks and/or wattles shall be installed in on-site and off-site catch basins that may be subject to sedimentation to prevent sediment from entering storm drainage system prior to permanent stabilization of the disturbed site.

- **Construction Access:** Construction access shall be installed at all locations where construction vehicles will exit the site. All vehicle traffic entering or exiting the project site shall pass over the construction entrances to reduce the tracking or flowing of sediment onto the surrounding roadways.

## 2.3 Other Controls

- **Dust Control**: Dust control is proposed to prevent blowing and movement of dust from exposed soil surfaces and to reduce the presence of dust which may cause off-site damage or pose a hazard to the health of humans, wildlife, and plants. Dust control may include, but is not limited to, application of water, mulch, and/or crushed stone or coarse gravel to exposed topsoil. Water should be applied at an average application rate of one (1) gallon of water per square yard of exposed area. The exact number of applications and amount of water used shall be based upon field and weather conditions. Water should not be used if it results in hazardous or objectionable conditions such as, but not limited to, ice, flooding, or pollution.

- **Waste Disposal:** All waste containers shall be covered to avoid contact with wind and precipitation. Materials which could be a potential source of stormwater pollution such as gasoline, diesel fuel, hydraulic oil, etc. shall be stored at the end of each day in a storage trailer or covered location and taken off-site and properly disposed of. All types of waste generated at this site shall be disposed of in a manner consistent with State Law and/or regulations. Excess soil shall be disposed of in accordance with the RIDEM-approved Soil Management Plan.

- **Street Sweeping:** The contractor is responsible for sweeping adjacent walks and roadways during and at the completion of construction. Paved areas should be inspected and swept prior to rain events. Trash, sediment, and construction debris within the street shall be removed and disposed of in accordance with applicable local, state, and federal guidelines and regulations.

- **Staging and Stockpiling:** Stockpiles of any construction material shall not be located outside the designated staging area. Stockpiles shall not have side slopes greater than 3H:1V, and stockpiles of erodible material shall be seeded and ringed with perimeter controls specified in the *Rhode Island Soil Erosion and Sediment Control Handbook*. If soil stockpiles are not stabilized with vegetation, then they must be securely covered at the end of each workday to avoid contact with precipitation and wind. Migrated stockpiled materials shall not be swept or washed onto impervious surfaces or into any drainage inlet.

  All chemicals and/or hazardous waste material must be stored properly and legally in covered areas, with containment systems constructed in or around the storage areas. Areas must be designated for materials delivery and storage.

  Soil on the site is regulated by RIDEM Office of Waste Management Remediation Regulations. All earthen material shall be stockpiled in accordance with the RIDEM-approved Soil Management Plan.

- **Designated Washing and Fueling Areas:** Fueling, maintenance, and washing of vehicles and equipment should be conducted off-site when feasible. If any of these activities occur on-site, they shall take place in designated areas approved by the engineer to prevent pollutants from being discharged to surface or ground waters. Absorbent spill cleanup materials shall be made available on-site. Designated fueling and maintenance areas shall be located away from catch basins and shall protected with berms and dikes from run-on, run-off, and to contain spills.

- **Good Housekeeping**: The project site shall provide for the minimization of exposure of construction debris (including, but not limited to, insulation, wiring, paints and paint cans, solvents, wall board, etc.) to precipitation by means of disposal and/or proper shelter or cover. In addition, construction waste shall be properly disposed of in order to avoid exposure to precipitation at the end of each working day.

# 3 Inspection

All stormwater control measures, disturbed areas, areas used for the storage of materials that are exposed to precipitation (including soil stockpiles), discharge locations, and locations where vehicles enter and exit the site, shall be inspected by or under the supervision of the permittee at least once every seven (7) calendar days and within 24 hours after any storm event that generates at least 0.25 inches of rainfall per 24-hour period and/or after a significant amount of runoff. The site shall be inspected for evidence of, or the potential for, pollutants entering the waters of the State or a separate storm sewer system.

If an inspection reveals a discharge of sediments to the waters of the State or a separate storm sewer system, the permittee shall notify the RIDEM of the nature of the discharge, the measures taken to clean up the discharge, and the measures taken to prevent future releases. Based on the results of the inspections, the *Soil Erosion and Sediment Control Report (SESC Report)* shall be revised as appropriate, but in no case later than seven calendar days following the inspection. Such modifications shall provide for implementation of any changes to the SESC Plan within seven calendar days following the inspection.

A report summarizing the scope of the inspection, name(s), and titles of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the SESC Report, and actions shall be made and retained as part of the SESC Report for at least five years from the date that the site has undergone final stabilization. Reports shall identify any incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report shall contain a certification that the site is in compliance with the SESC Report and this permit. The report shall be signed in accordance with Part V. G. of the General Permit which has been included in *Appendix B.*

## 3.1 Corrective Actions

If, in the opinion of the designated site inspector, corrective action is required, the inspector shall inform the site operator that corrective action is necessary. The site operator must make all necessary repairs whenever maintenance of the erosion and pollution controls is required. Non-compliance issues shall be addressed no later than seven (7) calendar days from the date of inspection.

In accordance with the SESC Report, the site operator shall commence with the requisite cleaning and maintenance measures no later than the next consecutive calendar day after receiving notification from the designated site inspector and shall aggressively and expeditiously perform such cleaning and maintenance work until the original problem is remedied.

The corrective action log contained in each inspection report must be completed, signed, and dated by the site operator once all necessary repairs have been completed.

# 4 Maintenance

The Contractor is responsible for the maintenance and/or replacement of all temporary and permanent erosion and sedimentation control devices and Best Management Practices (BMPs) to ensure proper operation throughout the life of the project. The Contractor is responsible for the maintenance of permanent measures until construction of the project is completed. The Owner is responsible thereafter.

## 4.1 Perimeter Sediment Barriers

Perimeter sediment barriers shall be repaired or replaced promptly as needed. Accumulated sediment shall be removed when sediment behind the barriers reaches one-half of the original height of the barrier. Barriers that are deteriorated or otherwise ineffective shall be replaced.

## 4.2 Inlet Protection

Silt sacks should be inspected for tears in the fabric barrier and replaced immediately upon discovery of failure. Sediment removal shall be performed in accordance with the manufacturer's instructions. Wattle inlet protection should be replaced once every month until the area is stabilized. Existing and proposed drainage structures and pipes shall be cleaned as needed to complete the construction; during construction in the event of sedimentation in the drainage system; and at the completion of construction.

## 4.3 Construction Entrances

All proposed construction entrances shall be maintained in a condition that will prevent tracking or flowing of sediment onto the surrounding roadways. This will require periodic top dressing with additional stone or additional length as conditions demand, and repair or replacement of any measures used to trap sediment. All sediment spilled, dropped, washed, or tracked onto the surrounding roadways shall be removed immediately.

## 4.4 Dust Control

It shall be the Contractor's responsibility to control dust and take all necessary measures to ensure all roads are maintained in a dust-free condition at all times throughout the life of the contract. The contractor shall provide a water truck on the site for the duration of the site construction, or until exposed soil is protected from wind or water erosion. Repetitive treatments shall be applied, as necessary.

## 4.5 Extreme Weather Events

Extreme weather events (e.g., increased precipitation, intense winds, etc.) have the potential to result in severe erosion during construction. The Contractor shall work in concert with the owner, engineer, and regulatory agencies to prepare the site for extreme weather events. The Contractor is responsible for controlling erosion based on the specific means and methods of construction and the specific weather events that may occur.

The Contractor shall monitor the extended weather forecast for the duration of the project for extreme weather events. Extreme weather events shall include rain events forecasted to result in more than three (3) inches of precipitation in a 24-hour period, a precipitation rate of one (1) inch per hour or greater, or more than one (1) inch of precipitation within a 24-hour period with standing snowpack greater than 6 inches. Extreme weather events

shall also include flooding from off-site areas onto or adjacent to the site. The Contractor shall inform the engineer five (5) days prior to the anticipated extreme weather event.

### 4.5.1 Extreme Weather Preparation Measures

The Contractor shall begin preparations for the extreme weather event no later than 24 hours prior to the anticipated start of the event. The site shall be completely prepared for the extreme weather event no later than 12 hours prior to the anticipated start of the event.

Minimum preparation measures include the following:

- Inspect all erosion controls and remove accumulated sediment so that each control measure has the maximum available storage capacity.
- Temporary grade disturbed areas to a smooth surface to reduce the risk of concentrated flows. Deploy temporary stabilization measures (e.g., 2 inches of mulch, temporary jute nets, etc.) to all disturbed areas.
- Cover soil stockpiles that are not stabilized with plastic sheeting (minimum thickness of 5 mils). Secure sheeting by placing heavy objects (e.g., boulders, sandbags, etc.) so that the sheeting will be secure for the duration of the rain event. Overlap the sheeting by a minimum of 4 feet so that runoff does not run underneath the sheeting.
- Deploy additional controls throughout the site based on actual field conditions.

The engineer shall be allowed to inspect the site prior to an extreme weather event. The Contractor shall correct any deficiencies noted during the inspection immediately.

### 4.5.2 Post-Event Site Inspection

The Contractor shall inspect the site within 12 hours of the end of the extreme weather event or as soon as it is safe to do so, whichever is sooner. Damaged erosion controls shall be repaired immediately. The Contractor shall immediately inform the engineer if sediment has left the site. All damaged or missing erosion controls shall be repaired or replaced, and any sedimentation shall be removed prior to resuming normal construction operations. A report summarizing the scope of the inspection, name(s), and titles of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the SESC Report, and actions shall be made and retained as part of the SESC Report for at least five years from the date that the site has undergone final stabilization.

# 5 Spill Prevention and Control

## 5.1 Prohibited Discharges

In accordance with Part III.J.2.a of the *RIPDES Construction General Permit*, the following discharges are prohibited at the construction site:

- Contaminated groundwater, unless authorized by DEM.
- Wastewater from washout of concrete unless the discharge is contained and managed by appropriate controls.
- Wastewater from washout of stucco, paint, form release oils, curing compounds, and other construction materials.

- Fuels, oils, and other pollutants used in vehicle and equipment operation and maintenance.
- Soaps or solvents are used in vehicle and equipment washing.
- Toxic or hazardous substances from a spill or other release.

## 5.2 Spill Prevention and Response Procedure

Any inadvertent or deliberate discharge of waste oil or any other pollutant to the stormwater disposal system requires immediate notification to the RIDEM Oil Pollution Control Program at (401) 222-1360, as per the Oil Pollution Control Regulations. During non-working hours, notification of spills can be made to the RIDEM Division of Enforcement at (401) 277-3070 (the 24-hour emergency response phone number).

Any incident of groundwater contamination resulting from the improper discharge of pollutants to the stormwater disposal system shall be the responsibility of the property owner as well as any other parties that the RIDEM determines to be responsible for the contamination. Pursuant to State Laws and Regulations, the RIDEM may require the property owner and other responsible parties to remediate any incidents that may adversely impact groundwater quality.

The Owner shall create a maintenance log, showing the date, time, name of inspector, inspection comments, and any actions taken. The Owner shall be responsible for remediating incidents that adversely impact groundwater quality.

## 5.3 Control of Allowable Non-Stormwater Discharges

If allowable non-storm water discharges occur at the site, such discharges shall be visually observed and recorded as outlined in accordance with Part I.B.2 of the General Permit in Appendix B. The list of potential sources of allowable non-stormwater discharges for this project is as follows:

- Discharge from vehicle wash-down where no detergents are used
- The use of water to control dust
- Firefighting activities
- Fire hydrant flushings
- Natural springs or uncontaminated groundwater
- Lawn watering
- Portable water sources including waterline flushings
- Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled materials have been removed) and where detergents are not used
- Foundation or footing drains where flows are not contaminated with process materials such as solvents, or contaminated by contact with soils where spills or leaks of toxic or hazardous materials have occurred
- External building wash-down where no detergents are used, and external surfaces do not contain hazardous substances (e.g., paint or caulk containing polychlorinated biphenyls (PCBS)), and appropriate control measures have been implemented to minimize discharges of mobilized solids and other pollutants.

## 6 Party Certifications

All parties working at the project site are required to comply with the Soil Erosion and Sedimentation Control (SESC) Report for any work that is performed on-site. The site owner, site operator, contractors and subcontractors are encouraged to advise all employees working on this project of the requirements of the SESC Report. A copy of the SESC Report may be obtained by contacting the site owner or site operator. The site owner and site operator and each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement.

***I acknowledge that I have read and understand the terms and conditions of the SESC Plan for the above designated project and agree to follow the practices described herein.***

**Applicant/Owner SESC Contact**

Company:
Name and Title:
Address:
City, State, Zip Code:
Telephone:
E-mail:

_____
Signature/Date

**Contractor (Site Operator)**

Company:
Name and Title:
Address:
City, State, Zip Code:
Telephone:
E-mail:

_____
Signature/Date

**Designated Site Inspector**

Company:
Name and Title:
Address:
City, State, Zip Code:
Telephone:
E-mail:

_____
Signature/Date

**SESC Plan Contact**

Fuss & O'Neill, Inc.
Nils Wiberg, PE
3 Davol Square, Suite C200
Providence RI 02908
401-533-5979
Nils.Wiberg@fando.com

_____
Signature/Date

## 7 Operator Certification

(Upon Contract award the Operator must sign this certification statement before construction may begin)

*I certify under penalty of law that this document and all attachments were prepared under the direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.*

*I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I am aware that it is the responsibility of the owner/operator to implement and amend the SESC Plan as appropriate in accordance with the requirements of the RIPDES Construction General Permit.*

_____ _____

Operator Signature Date

Contractor Representative:
Contractor Title:
Contractor Company: