

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
FOR COMPLIANCE WITH THE SPDES GENERAL PERMIT FOR CONSTRUCTION (GP-0-15-002)

Bluestone Wind Project

Towns of Sanford and Windsor, Broome County, New York

Owner/Operator:
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Published: August 2018

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FA No.: 175022

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- 1) "BLUESTONE WIND PROJECT" Civil Design Plans, Prepared by Fisher Associates PE, LS, LA, DPC, dated July 2018.

I. Introduction

The following Stormwater Pollution Prevention Plan (SWPPP) addresses the proposed stormwater mitigation measures and pollution prevention devices in conjunction with the proposed Bluestone Wind Energy Project (Project) located in the Towns of Sanford and Windsor, Broome County, New York.

According to Appendix B of the New York State Pollutant Discharge Elimination System (SPDES) General Permit GP-0-15-002, permanent access roads and substations surfaced with impervious cover that are constructed as part of a wind power project require a SWPPP that includes both Erosion and Sediment Controls (E&S) and Post Construction Stormwater Management Practices in order to be in compliance for stormwater discharges associated with construction activity.

The SWPPP includes the following:

- g. Stormwater Management Plans and Details
- h. Erosion and Sedimentation Control Plans and Details
- i. Notice of Intent (NOI)
- j. General Permit
- k. Notice of Termination (NOT)
- l. All records of inspections and activities which are created during the course of the project
- m. Other documents as may be included by reference to this SWPPP.

Changes, modifications, revisions, additions, or deletions shall become part of the SWPPP as they occur.

This SWPPP was created with the guidance of the New York State Stormwater Management Design Manual, November 2016 (SMDM) and documents the ability of the pollution prevention devices to comply with the SPDES requirements. The SWPPP will terminate when all disturbed areas are stabilized, permanent erosion and sedimentation controls installed, temporary erosion and sedimentation controls removed, all construction activities have ceased, and a completed NOT has been filed.

The general contractor and all sub-contractors involved in construction activities that disturb soil or implement pollution prevention controls must sign the Contractor Certification Forms. The certification forms are included in *Appendix 5*.

II. Background Information

A. Project Contact Information

Owner/Operator:

Bluestone Wind, LLC
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B. Project Description

The Project is located in the Towns of Sanford and Windsor, Broome County, New York, as depicted in Appendix A, Figure 1a. The Project is a proposed wind powered electric generating project that includes the installation and operation of up to 33 wind turbines and associated underground electrical collection lines, access routes, meteorological (met) towers, an operation and maintenance (O&M) building, collection substation with a battery storage component, and point of interconnection (POI) substation. The turbines will be connected by a system of underground electric cables. The proposed gravel access roads consist of a 16-foot wide permanent travel way. Roads that will be traversed by wind turbine assembly cranes will also have 18 feet of compacted earth adjacent to the roadway to accommodate the width of the crane. The additional 18-foot wide compacted earth areas will be decompacted and vegetated following construction. The 16-foot wide permanent gravel access roads will experience minimal traffic from occasional maintenance vehicles once the Project is operational.

New permanent stormwater management practices will be installed to provide the required runoff reduction, water quality, and water quantity volumes for the O&M building and collection and POI substations. During Construction, access roads will be treated by a combination of filter strips and naturally occurring buffers. The temporary laydown yard will include erosion and sediment controls that will remain in place for the duration of the construction and turbine erection. These features will capture and treat stormwater runoff and discharge prior to it leaving the project site.

III. Stormwater Management Planning

As noted in Chapter 3 of the 2015 NYS SMDM, planners and designers must use the following six-step process in stormwater management planning:

1. Site Planning,
2. Determine Water Quality Treatment Volume (WQv),
3. Apply Runoff Reduction Techniques and Standard Stormwater Management Practices (SMPs) with Runoff Reduction Volume (RRv) Capacity to Reduce Total WQv,
4. Determine the Minimum RRv Required,
5. Apply Standard SMPs to Address Remaining WQv
6. Apply Volume and Peak Rate Control Practices if Still Needed to Meet Requirements.

According to Chapter 4 of the NYS SMDM, the SWPPP must demonstrate that all green infrastructure planning and design options are evaluated to meet the runoff reduction requirement and provide documentation if any components of the approach are not technically feasible. The following sections of this report address the above requirements with respect to site constraints and requirements for development of the Project.

A. Step 1: Site Planning

In accordance with Chapter 3 of the SMDM, wetlands, waterways, buffers, floodplains, forested, critical areas, topography, soils, and bedrock or significant geology features have been mapped on the Civil Design Plans developed by Fisher Associates as referenced in this document.

1. Preservation of Natural Resources

- Preservation of Undisturbed Areas – Delineate and maintain undisturbed forests, native vegetated areas, riparian corridors, wetlands, and natural terrain.
 - The majority of the project is located on forested land. Access roads, electrical collection lines, turbines, collector substation, POI substation, and temporary laydown yards have been located to avoid streams, riparian corridors, wetlands, or other natural terrain as practicable. In order to allow for the delivery of turbine components and construction of access roads and electrical collection lines, it is not feasible to avoid tree clearing.
- Preservation of Buffers – Define, delineate and maintain naturally vegetated buffers along perennial streams, rivers, shorelines and wetlands.
 - The existing trees along streams will be preserved in their current condition where practicable. In some instances it may be necessary to cross perennial streams and/or wetlands in order to access the turbine sites. Appropriate erosion and sediment control measures will be in place prior to the crossings. Temporary culverts or timber mats will be utilized at the crossings to minimize permanent impacts. Because of the multiple property owners involved with wind projects and because of the linear nature of the project, it is not feasible to place perennial streams, rivers, shorelines and wetlands within a permanent conservation easement.

- Reduction of Clearing and Grading – Limit clearing and grading to the minimum amount needed for roads, driveways, foundation, utilities and stormwater management facilities.
 - The limit of disturbance is clearly shown on the construction documents and includes the minimum area necessary for the construction of the Project. No work outside of these limits shall take place.
- Locating Development in Less Sensitive Areas – Avoid sensitive resource areas such as floodplain, steep slopes, erodible soils, wetlands, mature forests and critical habitats by locating development to fit the terrain in areas that will create the least impact.
 - Slope – The project has been planned to avoid existing steep slopes as much as practicable. A small portion of the project is located within soil phase “E” or “F” soils as depicted on the soils map included as part of *Exhibit 21 of the Article 10 Application for the Project*. In areas where it is not feasible to avoid steep slopes, appropriate erosion and sediment control measures will be utilized to stabilize the disturbed areas.
 - Soil Erodibility - *Exhibit 21* states that soils range from moderate to severe in susceptibility to erosion within the Project limits. Appropriate erosion and sediment control measures will be used to minimize the effects of construction.
 - Sinkholes/Karst – *Appendix 9* indicates this Project is not located within a karst area.
 - Depth to Bedrock – *Exhibit 21* states that the depth to bedrock ranges from 3 feet to 8 feet from the surface. Bedrock may be encountered during foundation construction, but it is not anticipated that this will affect the stormwater design.
 - Water Table - *Exhibit 21* discusses the potential for perched water table conditions during spring and fall construction. Groundwater was not encountered during the preliminary geotechnical investigation, but according to the Natural Resources Conservation Service (NRCS) Web Soil Survey 3.0, the depth to the groundwater table ranges from being close to the surface to greater than 6.5’ deep. Should the final geotechnical report indicate that groundwater is anticipated to be encountered, proper dewatering practices will be utilized.
 - Historic and Archeological Resources – A Phase 1 Environmental Site Assessment is ongoing and being coordinated with the New York State Historic Preservation Office (SHPO).
 - Watershed - This project is located within the Oquaga Creek Watershed (USGS Hydrologic Unit Catalog (HUC) 020401010303), as shown on the watershed profile included as part of *Appendix 9*.
 - Impaired Waters - The project does not directly discharge to a watercourse listed as a 303(d) stream according to Appendix E of the General Permit.
 - Total Maximum Daily Load (TMDL) Water bodies - The project does not involve a watercourse that is on the list of waterbodies in the West Branch Delaware Watershed having TMDL limits (see Appendix E list of the General Permit).

- Municipal Separate Storm Sewer System (MS4) - The project is not located within a regulated MS4.
- Aquifers – The project is not located within an EPA Sole Source Aquifer. In addition, the project is not located over a Primary Aquifer according to the NYS Primary Aquifers Map.
- Wetlands – There are freshwater emergent and freshwater forested/shrub federal wetlands within the limit of disturbance or adjacent to the project, according to the National Wetland Inventory (NWI) map included as part of *Appendix 9*. There are no New York State Department of Environmental Conservation (NYSDEC) regulated wetlands located within the limits of disturbance. The wetlands have been field delineated by Bluestone Wind. The wetlands have been avoided as much as practicable.
- Floodplain - The Project is not within a 100-year floodplain, as determined from the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM), Town of Sanford, New York, Broome County and the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM), Town of Windsor, New York, Broome County
- Stormwater Hotspot - This project is not classified as a Stormwater Hotspot, as it does not involve any land uses or activities listed in Table 4.3 of the SMDM.
- Open Space Design - Use clustering, conservation design or open space design to reduce impervious cover, preserve more open space and protect water resources.
 - The project has been planned to use and improve as many existing roads as possible. The amount of new impervious surfaces has been kept to the minimal amount necessary to accommodate the construction and delivery traffic to and from the Project and to allow access to the facility during operation.
- Soil Restoration – Restore the original properties and porosity of the soil by deep till and amendment with compost to reduce the generation of runoff and enhance the runoff reduction performance of practices such as downspout disconnection, grass channels, filter strips, and tree clusters.
 - All disturbed areas that are to be permanently vegetated shall have soil restoration applied in accordance with Table 5.3 of the NYSDEC SMDM and the NYSDEC Deep-Ripping and Decompaction Manual.

2. Reduction of Impervious Cover

- Roadway Reduction – Minimize roadway widths and lengths to reduce site impervious area.
 - All proposed 16-foot wide roads will remain after construction. The 18-foot wide compacted earth areas adjacent to the gravel road surface will undergo soil restoration and be revegetated. The minimum width of roadway necessary to allow for construction and operation and maintenance vehicles to safely traverse the Project is utilized in the design.

- Sidewalk Reduction – Minimize sidewalk lengths and widths to reduce site impervious area.
 - There are no sidewalks as part of this Project.
- Driveway Reduction – Minimize driveway lengths and widths to reduce site impervious area.
 - Driveways for the substation and temporary laydown yard have been designed to minimize driveway length and width to the maximum extent practicable.
- Cul-de-sac Reduction - Minimize the number of cul-de-sacs and incorporate landscaped areas to reduce their impervious area.
 - There are no cul-de-sacs as a part of this Project.
- Building Footprint Reduction – Reduce the impervious footprint of residences and commercial buildings by using alternate or taller buildings while maintaining the same floor to area ratio.
 - Buildings or structures associated with the substation site are designed according to requirements of their intended functions. Their footprint is the minimum necessary to accommodate the proposed functions.
- Parking Reduction – Reduce imperviousness on parking lots by eliminating unneeded spaces, providing compact car spaces and efficient parking lanes, minimizing stall dimension, using porous pavement surfaces in overflow parking areas, and using multi-storied parking decks where appropriate.
 - The proposed parking area for the substation site will occur on the pad near the proposed electrical equipment. The minimum amount necessary to accommodate operation and maintenance during the life of the Project will be provided. The use of multi-story parking decks or porous pavement is not necessary or feasible for this Project given the small number of parking spaces required to accommodate staff.

B. Step 2: Determine Water Quality Treatment Volume (WQv)

1. Soils

Based on The National Cooperative Soil Survey (NCSS) Web Soil Survey 3.1 (WSS), the site contains Hydrologic Soil Groups “HSG” A, C, and D soils. A copy of the soils map is included as part of *Appendix 9*.

2. Proposed Surface Drainage & Covers

The Project includes the installation of up to 33 wind turbine generators (WTGs) that are located throughout the project limits. In addition to the WTGs, the project will also include a temporary laydown yard, collector substation with a battery storage component, O&M building, POI substation, access roads, culverts, wind turbine generator pads, temporary turnarounds, crane pads, an underground electrical

collection system, crane walk routing, and met towers. The following describes the proposed project components and the stormwater management practice utilized at each location:

- Temporary Laydown Yard - During the construction phase of the project, dedicated staging areas will be required. The staging areas are used for storing and moving necessary project components upon arrival to the project site and as emergency safety areas. These areas will consist of a gravel surface and are graded as close to the existing ground surface as possible while maintaining positive drainage across the site. Permanent stormwater management practices will not be utilized at these locations. Instead, temporary erosion and sediment control measures will be installed to capture any sediment from the disturbed area prior to runoff leaving the site.
- Collection Substation (with battery storage) and POI Substation - One substation will be constructed to collect the power generated from the turbines and then transmit to a proposed POI substation site that will connect to existing overhead electric transmission lines. The substation and interconnect consist of electrical equipment and/or buildings that are necessary for the wind generated electricity. The collection substation will include a battery component capable of storing up to 2 MW of electricity generated by the project. The sites will consist of open graded stone surrounding the electrical equipment and buildings that will allow stormwater runoff to infiltrate into the underlying soils. Runoff from impervious areas such as the access road around the equipment and buildings will be treated by a bioretention area prior to discharge from the site.
- O&M Site – A new building will be constructed for O&M purposes. Runoff associated with the building will be treated by a bioretention area prior to discharge from a sediment basin on site.
- Maintenance Garage/Storage – An approximately 3,200 sf building will be constructed that will house maintenance equipment for the life of the project. Runoff associated with the building will be treated by a bioretention area prior to discharge from the site.
- Access Roads and Culverts - Approximately 16 miles of access roads and 100 temporary or permanent culverts, including a portion of existing access road to be modified for use, are required for installation and maintenance of the WTGs. The access roads consist of a permanent 16-foot wide road to accommodate turbine component delivery trucks and operation and maintenance activities during the life of the project. An additional 18 feet of compacted earth adjacent to the access roads will be utilized in areas that the wind turbine assembly crane will traverse. After completion of the wind turbine assembly stage of the project, the additional compacted earth areas will be decompacted and revegetated for use as a filter strip.

The 16-foot wide gravel access roads will remain after construction and will only have minimal truck traffic for operation and maintenance of the wind turbines. The intent is to grade the access roads at the existing grade level to the greatest extent practicable in order to minimize disturbances. Culverts will be installed at existing ditch and stream crossings to maintain the existing drainage conditions of the site. Runoff from permanent access roads will be treated by filter strips, naturally occurring riparian buffers, and/or open stormwater channels when necessary. In areas where stormwater channels are needed, check

dams will be utilized to provide stormwater quality and quantity treatment and volume. In accordance with NYSDEC guidance, the filter strip will provide complete runoff reduction and water quality volumes for the access road as long as the filter strip is at least the width of the impervious area draining to it. In this case, the impervious area is a maximum of 16' and the filter strip is 18'.

- Wind Turbine Generator Pads - There are up to 33 proposed WTGs on the project. The turbine foundation is anticipated to be a spread footer that will predominately be underground. An 18-foot diameter concrete pedestal will remain above ground that will be surrounded by a 10-foot gravel ring. The turbine components, including tower sections, nacelle and blades, are to be delivered by truck along access roads built for this project. Cranes will be used to assemble these components at each WTG location. Stormwater runoff from the WTG sites will be treated utilizing filter strips and/or naturally occurring buffer areas that are a minimum width equal to the impervious area width draining to the filter strip. No additional stormwater management practices will be utilized at the WTG sites in order to minimize disturbances to the adjacent property and agricultural uses.
- Crane Pads - A crane pad designed with a maximum slope of 1 percent in all directions will be constructed at each WTG location to provide an area for the assembly crane. The crane pad areas measure approximately 65 feet by 100 feet in size. Upon completion of the foundation and backfilling the area, the heavy cranes will pick up the turbine components and install them over the foundation. These gravel pads will remain in place after construction for future operation and maintenance of the WTGs. It is expected that minimal truck traffic will utilize the pad during operation and maintenance of the turbines. Stormwater runoff from the crane pad areas will be treated by filter strips and/or naturally occurring buffer areas that are a minimum width equal to the impervious area width draining to the filter strip.
- Underground Electrical Collection System - Typically, the location of the collection system for electric power is grubbed prior to trenching, resulting in a 100 foot wide strip per cable. Depending on the electrical design there may be more than 1 cable trench per strip with a 15-foot separation between them. In areas where the underground cable is crossing a delineated wetland, the collection lines will either be installed by an open trench, underbore or horizontal directional drilling to avoid impacts. Disturbed areas will remain vegetated after construction and erosion and sediment controls will only be utilized at critical environmental areas, such as wetlands and stream crossings.
- Met Towers- Two met towers will be installed within the project boundary during the construction phase and will remain during the operational phase to monitor wind resources. The met towers will be surrounded by a 42-foot by 42-foot gravel pad. Stormwater runoff will be treated by a filter strip or naturally occurring buffer surrounding the pad that is a minimum width equal to the width of the impervious area draining to the filter strip.

Refer to the project drawings, referenced in the Table of Contents of this report, for further information.

3. Stormwater Quality

According to the guidance from the NYSDEC, runoff reduction and water quality volume for the linear access roads, WTG sites, and met tower sites can be achieved by the use of a filter strip or naturally occurring buffer area as long as the filter strip width is equal to or greater in width than the impervious area draining to it. No other runoff reduction or water quality practice is proposed for these areas. For the collection and POI substation sites, the minimum runoff reduction and water quality volume of the increased impervious area will be treated in accordance with the NYSDEC SMDM.

C. Step 3: Runoff Reduction by Applying Green Infrastructure Techniques and Standard SMPs with Runoff Reduction Volume (RRv) Capacity

According to Chapter 4 of the SMDM, runoff reduction shall be achieved by infiltration, groundwater recharge, reuse, recycle, evaporation/evapotranspiration of 100% of the post-development Water Quality Volumes to replicate pre-development hydrology. This requirement can be accomplished by application of on-site green infrastructure practices, standard stormwater management practices with runoff reduction capacity, and good operation and maintenance.

1. Conservation of Natural Areas

There are no forests, native vegetated areas, riparian corridors, wetlands, or other natural terrain within the project area that can be placed within a permanent conservation easement.

2. Sheetflow to Riparian Buffers or Filter Strips

The 18 feet of decompacted soil along the access roads will be revegetated and act as filter strips. In accordance with NYSDEC guidance, the filter strips will provide runoff reduction and water quality volume as long as the filter strip width is at least the width of the impervious area draining to it. The filter strips will not be located on steep slopes. The access roads and WTG sites will be graded in a manner that will allow sheet flow to adjacent naturally vegetated areas where possible. Point discharges from access roads and WTG and Meteorological Sites will be minimized as much as practicable.

3. Vegetated Open Swales

Existing drainage conveyance swales will remain as much as practicable. In areas that the access roads are in a cut situation, swales will be utilized to convey stormwater to the nearest outlet point or culvert. Check dams will be utilized within the swales to provide runoff reduction and water quality benefits.

4. Tree Planting/Tree Box

Tree plantings are not proposed as a part of this project. The existing trees on the site will remain to the maximum extent practicable. In addition, tree protection will be utilized during construction of the project to protect the existing trees that are to remain.

5. Disconnection of Rooftop Runoff

Although all of the buildings constructed as a part of this project will have disconnected rooftops, there is not adequate space to provide a vegetated filter strip outlet for water quality or runoff reduction.

6. Stream Daylighting

There are no existing enclosed streams that can be daylighted within the project limits.

7. Rain Garden

Rain gardens are not feasible for this project because the contributing drainage areas are greater than the maximum allowed in the SMDM.

8. Green Roof

Green roof practices are not feasible for any building or structure in this project due to the type of construction of the buildings.

9. Stormwater Planters

There are no locations throughout the project where stormwater planters can be utilized due to lack of area to construct.

10. Rain Tanks/Cisterns

Because there is not a planned use for collected rainwater at this site, rain tanks/cisterns are not technically feasible.

11. Porous Pavement

Porous pavement was not utilized on the site because the proposed paved surfaces are being treated by other practices to meet runoff reduction and water quality requirements.

12. Standard SMPs with RRv Capacity

Standard stormwater management practices that have runoff reduction capacity are infiltration practices, bioretention practices and open channel practices. A percentage of the water quality volume provided by these practices, in accordance with the SMDM Table 3.5, can be applied towards meeting the required runoff reduction volume for the project.

D. Step 4: Apply Standard Stormwater Management Practices to Address Remaining Water Quality Volume

Because the majority of the project is linear in nature, stormwater runoff will be spread over a large area. The intent of the project is to provide stormwater quantity practices for the individual sites where it is more practical to control stormwater, such as the substation. The access roads, WTG sites, and met tower sites will not have permanent stormwater quantity practices installed other than filter strips as previously

mentioned. A downstream analysis will be performed for these areas as described in Step 5, item number 3.

As stated previously, a bioretention basin is proposed to capture and treat the required water quality volume for the substation site.

E. Step 5: Apply Volume and Peak Rate Control Practices if Still Needed to Meet Requirements

1. Existing Runoff

HydroCAD version 10.00, which utilizes the Soil Conservation Service (SCS) method, will be used to model the existing conditions for the individual sites under the National Weather Service (NWS) 24-hour, 1-year, 10-year, and 100-year frequency peak flow in accordance with the standards set forth in the SMDM. The resulting flow information will be included in the final SWPPP.

2. Proposed Runoff

HydroCAD version 10.00, which utilizes the SCS method, will be used to model the proposed conditions under the NWS 24-hour, 1-year, 10-year, and 100-year frequency peak flow in accordance with the standards set forth in the SMDM. Because there is an increase in imperviousness, water quantity will be controlled to reduce the resulting runoff to pre-construction conditions.

3. Downstream Analysis

Within the turbine and access road areas, the channel protection (1-year), overbank flood (10-year), and extreme storm (100-year) volumes need to be controlled to protect the downstream channels from erosion and flooding, according to the SMDM. However, the linear nature of the project and the limited land control make volume control practices infeasible. As discussed with the NYSDEC, volume controls for the 1-year, 10-year, and 100-year storm events are not necessary if it can be shown that there is less than a 2.5% increase of the peak flow during the 1-year event and less than 5% during the 10-year and 100-year events by comparing the existing conditions to the proposed conditions in these areas. This extensive analysis will be performed to determine if the project fits these criteria as part of the final SWPPP.

As described previously, the alterations to land cover within the drainage areas will consist of the conversion of forested areas to wind turbine pads and associated access roads. Other disturbed areas outside of the proposed impervious area will be revegetated. Temporary improvements and the collection lines are not included in the analysis because their drainage characteristics will remain essentially unchanged following construction.

IV. Pollution Prevention Measures

The primary goal of pollution prevention efforts during project construction is to control soil and pollutants that originate on the site and prevent them from flowing to surface waters. The purpose of this SWPPP is to provide guidelines for achieving that goal. A successful pollution prevention program also relies upon careful inspection and adjustments during the construction process in order to enhance its effectiveness. Prior to the commencement of construction of the project, a Notice of Intent (NOI) shall

be filed with the NYSDEC to obtain coverage under SPDES General Permit GP-0-15-002 for stormwater discharges from construction activity. The NOI shall be signed by the owner/operator and SWPPP Preparer and submitted to the NYSDEC.

Note that temporary stabilization of the project shall be employed to the fullest extent practical prior to freezing conditions. This shall include temporary seeding and establishment of vegetation wherever possible or other methods approved by the Qualified Professional, such as rolled erosion control products. If this is achieved, winter shutdown observations can be limited to one time per 30 calendar days.

A. Erosion and Sedimentation Control

The areas of disturbance are to be minimized as much as practical and limited to the areas depicted on the project drawings. Permission from the Regional NYSDEC Office is required if it is deemed necessary to disturb more than 5 acres at any one time. A request to disturb greater than 5 acres will need to be submitted prior to construction exceeding the threshold.

The erosion and sediment control plan is included within the referenced construction plans. A summary of the construction sequencing for erosion control features is as follows:

- a. Evaluate, mark and protect, with appropriate erosion control measures, important trees, associated rooting zones, and other existing site features designated to remain.
- b. Construct stabilized construction entrances as depicted on the plans to capture mud and debris from construction vehicles before they enter the public highway.
 - Stabilize bare areas (entrances, construction routes, equipment areas) immediately as work takes place. Top these areas with gravel or maintain vegetative cover.
 - Sediment tracked onto public roads shall be removed or cleaned on a daily basis and as necessary throughout the day.
- c. Construct temporary erosion and sediment control measures (silt fencing, tree protection, etc.).
 - Silt fence and tree protection material and installation must comply with the standard drawing and specifications.
 - Install silt fence at appropriate spacing intervals. Decrease this interval as the slope increases. The area below the silt fence should be undisturbed ground.
- d. Remove and stockpile topsoil and vegetation from areas to be impacted by the construction activities. No organic debris shall be buried on site. The topsoil stockpile should be stabilized by seed, mulch, or other appropriate measures as soon as possible.
- e. Commence construction activities.
- f. Stabilize all disturbed areas as soon as practical in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased.

This requirement does not apply in the following instances:

- When the initiation of the stabilization measures by the 14th day after construction activity temporarily or permanently ceased is precluded by snow cover or frozen ground conditions, the stabilization measures shall be initiated as soon as practical.
 - When construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 21 days, initiation of temporary stabilization measures is not required on that portion of the site.
- n. All erosion and sediment control features shall be maintained until establishment of a substantial stand of grass or other approved vegetation on all green areas, in accordance with the maintenance procedure. On acceptance of restoration by the owner, remove all temporary features.

B. Other Pollution Prevention Controls

4. Dust and Mud Control

Construction traffic must enter and exit the site at the stabilized construction entrances as depicted on the plan sheets and in accordance with the latest version of the NYSDEC Standards and Specifications for Erosion and Sediment Control (SSESC). The purpose is to trap dust and mud that would otherwise be carried off-site by construction traffic. Water trucks or other dust control agents may be used as needed during construction to reduce dust generated on the site. Other dust control measures may be implemented as necessary. After construction, the site will be stabilized (as described elsewhere), which will reduce the potential for dust generation.

5. Solid Waste Disposal

No solid materials, including building materials, are allowed to be discharged from the site with storm water. All solid waste, including disposable materials incidental to major construction activities, must be collected and placed in containers. The containers will be emptied as necessary by a contract trash disposal service and hauled away from the site. Containers shall remain closed at all times. Substances that have the potential to pollute surface and/or groundwater must be controlled by whatever means necessary in order to ensure that they do not discharge from the site.

6. Sanitary Facilities

All personnel involved with construction activities must comply with state and local sanitary or septic system regulations. Temporary sanitary facilities shall be provided at the site throughout the construction phase. They must be utilized by all construction personnel and shall be serviced by a commercial operator.

7. Water Source

Non-storm water components of site discharge must be clean water. Water used for construction that discharges from the site must originate from a public water supply or private well approved by the State Health Department. Water used for construction that does not originate from an approved public supply must not discharge from the site.

8. Concrete Batch Plant

Stormwater from a temporary concrete batch plant will discharge to designated areas prepared to prevent runoff from discharging from the site. The location of the concrete batch plant is to be determined during final design. The cured residue from the diked areas shall be disposed in accordance with applicable state and federal regulations.

9. Concrete Waste from Concrete Ready-Mix Trucks

Discharge of excess or waste concrete and/or wash water from concrete trucks will be allowed on the construction site, but only in specifically designated diked areas prepared to prevent contact between the concrete and/or wash water and storm water that will be discharged from the site. Alternatively, waste concrete can be placed into forms to make riprap or other useful concrete products. The cured residue from the concrete washout diked areas shall be disposed in accordance with applicable state and federal regulations.

10. Fuel Tanks

Temporary on-site fuel tanks for construction vehicles shall meet all state and federal regulations. Tanks will be equipped with secondary containment with a capacity of at least 110% of the capacity of the tank. The tank shall be in sound condition free of rust or other damage, which might compromise containment. Hoses, valves, fittings, caps, filler nozzles, and associated hardware shall be maintained in proper working condition at all times. Refueling shall take place 100 feet minimum outside of wetland or stream areas.

11. Hazardous Waste Management and Spill Reporting

Any hazardous or potentially hazardous waste generated at the construction site will be handled properly in order to reduce the potential for stormwater pollution. All materials used on the construction site will be properly stored, handled and dispensed following applicable label directions. Material Safety Data Sheets (MSDS) for materials used during construction will be kept on site in hard copy or electronic form.

- In the event of an accidental spill, immediate action shall be taken by the General Contractor to contain and remove the spilled material. All hazardous materials shall be disposed of by the Contractor in the manner specified by local, state, and federal regulations and by the manufacturer of such products. As soon as possible, the spill shall be reported by the General Contractor to representatives of Bluestone Wind to determine whether the incident must be reported to federal, State and/or local authorities.

Any spills of hazardous materials in quantities in excess of Reportable Quantities as defined by the U.S. Environmental Protection Agency (EPA) and/or NYSDEC shall be immediately reported to the EPA National Response Center (NRC) (1-800-424-8802) and the NYSDEC Spill Hotline (1-800-457-7362). Oil spills to surface water or adjoining shoreline that cause a sheen must be reported immediately to the NRC. Petroleum spill must be reported immediately to the NYSDEC Spill Hotline unless they are “de minimis, i.e., less than 5 gallons, to an impervious surface (not to soil or water), contained and controlled, and cleanup up with 2 hours of discovery. See 6 NYCRR 613-4.5(d) and Appendix 1.1-1 of the NYSDEC Division of

Environmental Remediation Technical Field Guidance Spill Reporting and Initial Notification
Requirements for hazardous materials spill reportable quantities and procedures.

In order to minimize the potential for a spill of hazardous materials to come in contact with stormwater, the following steps will be implemented:

- a. All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) shall be stored in a secure location, under cover, when not in use.
- b. The minimum practical quantity of all such materials shall be kept on the job site and scheduled for delivery as close to time of use as practical.
- c. A spill control and containment kit (containing, for example, absorbents, such as kitty litter or sawdust, acid neutralizing agents, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) shall be provided at the storage site and each Facility vehicle shall have a spill kit.
- d. All of the product in a container shall be used before the container is disposed of. All such containers shall be triple rinsed, with water prior to disposal. The rinse water used in these containers shall be disposed of in a manner in compliance with state and federal regulations and shall not be allowed to mix with storm water discharges.
- e. All products shall be stored in and used from the original container with the original product label.
- f. All products shall be used in strict compliance with instructions on the product label.
- g. The disposal of excess or used products shall be in strict compliance with instructions on the product label and will comply with all applicable federal, state and local laws.

12. Allowable Non-Stormwater Discharges

The following non-stormwater discharges are allowed as indicated in this SWPPP:

- Vehicle wash water if no detergents are used
- Firefighting activities
- Fire hydrant flushing, with chlorine residuals of 0.2-ppm or less
- Potable water sources including water line flushing, with chlorine residuals of 0.2-ppm or less
- Uncontaminated groundwater or spring water (with geotechnical evaluation only)
- Building wash water if no detergents are used
- Water used to control dust
- Uncontaminated excavation dewatering (with geotechnical evaluation only)

V. Construction Phasing and Sequence of Activities

A. Phasing

In accordance with the GP-0-15-002, the Owner/Operator shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the NYSDEC.

If it is anticipated that more than 5 acres will be disturbed at one time, a request must be submitted before exceeding the threshold. Note that the GP-0-15-002 requires construction observations to occur two times per week if the 5-acre threshold is exceeded.

B. Sequence of Construction Activities

Construction of the project is scheduled to take place between the months of October of 2019 and December of 2020. In general, the proposed construction sequence shall consist of installation of all perimeter erosion and sediment control and green practices prior to starting the tasks listed below, unless indicated otherwise on the construction documents. In addition, all disturbed areas are to be vegetated prior to commencement of subsequent tasks.

1. Prepare Temporary Staging Areas;
2. Box out, Compact Subgrade, and Install Access Roads;
3. Set up Concrete Batch Plant, if required;
4. Excavate for WTG Foundations;
5. Place WTG Foundations
6. Construct Crane Pads;
7. Erect WTGs;
8. Install Substations;
9. Install Underground Electrical Collection System;
10. Dismantle Temporary Structures;
11. Remove Temporary erosion and sediment control devices after final stabilization of each area is declared by the Qualified Professional;
12. Restore any disturbed area due to removal of temporary measures.

After construction is completed, all cleared areas are to be reclaimed and revegetated, while agricultural activities are to be permitted to resume to the limits of the permanent 16-foot wide access road and WTG pads. The crane pads near the turbines are to remain in place, while all other areas not used for maintenance equipment are to be decompacted and revegetated or return to their previous agricultural use. Areas adjacent to impervious areas will remain as permanent filter strips to provide runoff reduction and water quality volume. Refer to the information listed below for a detailed description of the proposed construction sequencing for each of the various project components.

1. Temporary Staging Area- The items below provide a generalized construction sequence for the control of erosion and sedimentation during construction of the staging area.
 - Install erosion and sediment controls along perimeter of disturbance.
 - Install sediment basin
 - Rough grade site and stockpile topsoil. Install silt fence or straw bales around soil stockpile and/or stabilize as necessary.
 - Place gravel and geotextile (as determined by design) over the area.
 - After use of the area, restore site to pre-construction contours and stabilize according to specifications.
 - After site has been stabilized, remove erosion and sediment controls.
2. Access Roads (Not Crossing Wetlands or Streams)- The items below provide a generalized construction sequence for the control of erosion and sedimentation during the construction of the access roadways.
 - Install stabilized construction entrance at all intersection locations with County or Town roads.
 - Install erosion and sediment controls at the locations shown on the construction drawings.
 - Complete clearing and grubbing.
 - In agricultural areas, remove topsoil for the width of the access roadways and stockpile. Install silt fence or straw bales around soil stockpile and/or stabilize as necessary.
 - Place geotextile (as determined by design) and place gravel over the geotextile.
 - Use the roadways to deliver equipment and materials to the WTG sites.
 - Stabilize according to temporary/permanent stabilization methods.
 - After the access roadways have been stabilized, remove all erosion and sediment control structures.
3. Access Roads (Crossing Wetlands or Streams)- The items below provide a generalized construction sequence for the control of erosion and sedimentation during the construction of the access roadways crossing wetlands or streams.
 - Install erosion and sediment controls at the locations identified on the construction drawings.
 - Limit clearing to minimum width necessary.
 - Install culverts, as identified on the construction drawings, and as described in the following paragraph, to maintain wetland/stream hydrology.
 - Construct the roadway as described above.
 - Stabilize the disturbed areas and restore wetland or stream to pre-construction contours.
 - After the site has been stabilized, remove all erosion and sediment control structures.

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4. Culverts- The items below provide a generalized construction sequence for the control of erosion and sedimentation during culvert installation.
 - Install the erosion and sediment controls as identified on the construction drawings.
 - Complete the excavation required for the culvert installation.
 - Install the culvert and complete the backfill and compaction operations.
 - Finish slopes around the culvert. Install erosion control blankets on the slopes.
 - Complete final grading and stabilize.
 - After the site has been stabilized, remove all erosion and sediment control structures.
 5. WTG Pads- The items below provide a generalized construction sequence for the control of erosion and sediment during WTG construction:
 - Install erosion and sediment controls along perimeter of WTG site area.
 - Complete site clearing and grubbing; stockpile topsoil where required.
 - Rough grade site and stockpile soil. Install silt fencing or straw hay bales around soil stockpiles and/or stabilize as required.
 - Finish-grade the slopes around the WTG site.
 - Install erosion control blankets, where applicable, and apply mulch and seeding. All seeding and erosion matting (if required) shall be performed upon completion of the foundations and erection, while construction is still in progress.
 - Excavate and construct the WTG foundations and crane pads and assemble the WTG components.
 - Decomact permanent pervious areas, complete the final grading of the site, replace topsoil, and stabilize according to specifications.
 - After site has been stabilized, remove erosion and sediment controls.
 6. Underground Electric Collection System- The following provides a generalized construction sequence of the construction and implementation of the erosion and sediment controls during construction of the collection system:
 - Install the erosion and sediment controls around perimeter of areas to be disturbed.
 - Complete clearing along the cable route.
 - Strip and stockpile topsoil. Install silt fencing or straw hay bales around soil stockpiles and/or stabilize as required.
 - Install and backfill trench in one operation.
 - Replace topsoil and place seed and mulch.
 - After the site is stabilized remove erosion and sediment controls.
 7. Underbore/Horizontal Directional Drilling (HDD) for Electric Collection System- The following provides a generalized construction sequence of the construction and implementation of the erosion and sediment controls for installation of the collection system beneath public roads, wetland, floodplains, and streams:

- Install the erosion and sediment controls around perimeter of areas to be disturbed for each bore pit.
 - Strip and stockpile topsoil. Install silt fencing or straw hay bales around soil stockpiles and/or stabilize as required.
 - Install conduit for collection cable.
 - Install collection cable.
 - Backfill bore pits from stockpiled soil.
 - Replace topsoil and place seed and mulch.
 - After the site is stabilized remove erosion and sediment controls.
8. Collection and POI Substations- The items below provide a generalized construction sequence for the control of erosion and sedimentation during construction of the substation sites, including the battery component.
- Install the erosion and sediment controls around perimeter of disturbance.
 - Complete site clearing and grubbing.
 - Install stabilized construction entrance.
 - Rough grade site and stockpile soil for reuse. Install silt fencing or straw hay bales around the soil stockpile.
 - Finish the slopes around the substation. Install erosion control blankets, where applicable, and apply mulching and seeding.
 - Install all the substation components.
 - Complete the final grading of the site and install gravels within the substation area. Stabilize the outside areas.
 - After the site has been stabilized, construct bio-retention facility and remove erosion and sediment controls.
9. O&M Building - The items below provide a generalized construction
- Install the erosion and sediment controls around perimeter of disturbance.
 - Complete site clearing and grubbing.
 - Install stabilized construction entrance.
 - Rough grade site and stockpile soil for reuse. Install silt fencing or straw hay bales around the soil stockpile.
 - Construct the foundation elements and place the concrete floor. Install walls, roof and complete interior work.
 - Complete the final grading of the site and install gravel in the site area. Stabilize the areas adjacent to the site.
 - After the site has been stabilized, construct bio-retention facility and remove erosion and sediment controls.

VI. Construction Observation & Maintenance Procedures

A. Inspection Schedule

The Owner/Operator shall have a Qualified Professional conduct an assessment of the site prior to the commencement of any non-erosion and sediment control construction work and report that the appropriate erosion and sediment controls described herein have been installed adequately for construction of the project to begin.

Construction observations shall be completed upon commencement of disturbance at least 1 time every 7 days (2 times every 7 days in the event 5 acres or more are disturbed at any one time) until final stabilization of the site is achieved. Construction observation reports shall be completed by the Qualified Inspector after each observation and filed with the SWPPP. Digital photographs, with date stamps, that clearly show conditions that have been identified as needing corrective actions—as well as the same areas following corrective action—shall be included with the inspection report. A copy of each required report form is included as part of *Appendix 6*.

B. Observation and Maintenance Practices

The following observation and maintenance practices shall be used to maintain the proposed erosion and sediment controls and all post construction stormwater management practices identified herein throughout construction:

1. Construction Entrances are to be inspected for evidence of off-site sediment tracking where vehicles exit the project area. Each contractor and subcontractor is responsible for maintaining the construction entrance and other controls as previously described.
2. Material storage areas that are exposed to precipitation are to be inspected. Offsite storage areas for materials used exclusively for the project are to be included in the inspections and inspection reports are to be completed.
3. Swales shall be observed for breaches and they shall be repaired when found.
4. Check dams shall be inspected for depth of sediment and built-up sediment shall be removed prior to it exceeding a depth of one-third the height of the dam.
5. Sediment traps, if required, shall be inspected for depth of sediment and built-up sediment shall be removed prior to it exceeding a depth greater than 50 percent of the basin, as measured at the outlet of the structure. Vegetation within the structure shall be limited to a maximum height of 18 inches. The outlet device shall be cleaned when drawdown time exceeds 36 hours and repaired as necessary. Note that these devices shall be used for snow storage, if required, during construction.
6. All sediment and debris shall be managed/disposed of in accordance with all applicable waste disposal regulations.
7. Temporary and permanent seeding, as well as plantings shall be inspected for washouts, bare spots, and healthy growth. Washout areas shall be stabilized by jute-mesh, sod, or other approved energy dissipation means. Bare spots and unhealthy growth areas shall be re-established, as required.
8. All measures shall be maintained in good working order and in accordance with the latest edition of the SSESC. If a repair is necessary, it shall be initiated within 24 hours of report and completed within 48 hours thereafter.

C. Inspection Reporting

Construction observation reports shall be performed by a Qualified Inspector and review by a Qualified Professional after each observation and filed with the SWPPP.

Additional forms, which can be found on the NYSDEC webpage, such as the “NYS DEC Inspection Checklist”, should be reviewed by the Owner/Operator or a duly authorized representative prior to commencement of construction. Note that a duly authorized representative must have written authorization from the Owner/Operator to sign documents, and a copy of the authorization must be submitted to the NYSDEC. The forms shall be posted on-site in a publicly-accessible location.

D. Site Stabilization Inspections

The site shall be cleaned of all construction debris prior to demobilization. Temporary erosion and sediment control practices shall be removed when soils are stabilized, as determined by the Qualified Professional. After the Qualified Professional declares final stabilization of the site and reports that all temporary controls have been removed, the Notice of Termination shall be signed by the Owner/Operator and filed with the NYSDEC. Note that all permanent stormwater management structures, including required structures due to modifications of the SWPPP, shall be listed on the NOT.

E. Modifications/Revisions

Any necessary modifications to this SWPPP shall be implemented within 7 calendar days of an inspection. Modifications are necessary if a control measure or procedure does not provide adequate pollutant control. All revisions are to be recorded in the Construction Log Book, included in *Appendix 6*, within 7 calendar days of an inspection.

VII. Post-Construction Operation & Maintenance Procedures

In accordance with the SPDES General Permit, the SWPPP shall include a maintenance schedule to achieve continuous and effective operation of each post-construction erosion and sediment control practice and stormwater control practice. The Owner/Operator shall at all times properly operate and maintain stormwater controls. Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures as well as operation and maintenance of all facilities, systems of treatment, systems of control, and related appurtenances that were installed as a requirement of the SWPPP. The following procedures, which include the maintenance requirements found in the SMDM for the proposed facilities, constitute the post-construction operation and maintenance plan for the facility:

1. Inspect the proposed erosion and sediment control practices at the end of each spring and during dry times of the year, as summarized below:
 - a. Vegetation- Observe areas for bare spots, washouts, and healthy growth. Apply topsoil, seed, and mulch to areas, as necessary. Water as required to reestablish vegetation as quickly as possible. In highly erodible areas, install sod or an approved energy dissipating device until re-establishment is achieved.
 - b. Plantings- Observe for weak and unhealthy species. Prune and replace as necessary.
 - c. Mulch- Observe areas for bare and thin spots. Re-apply mulch, as necessary, to obtain a minimum depth of 4 inches over the entire area.
2. Inspect the proposed stormwater control practices at least once per month during the spring, summer, and fall and after each 6-inch snow-melt event, as summarized below:
 - a. Bioretention Basins
 - Inspect the proposed stormwater control practices as indicated in the Bioretention Operation, Maintenance and Management Inspection Checklist included as part of [Appendix 7](#).
 - Inspect for breaches and bare spots and repair as necessary.
 - Remove built-up sediment prior to it exceeding a depth greater than 6 inches and dispose in accordance with all applicable waste disposal regulations.
 - Limit vegetation growth to a maximum height of 18 inches.
 - Remove all trash and debris as necessary and dispose in accordance with all applicable regulations.
 - Note that these devices can be used for snow storage.
 - b. Dry Swale
 - Inspect the proposed stormwater control practice as indicated in the Sand/Organic Filter Operation, Maintenance and Management Inspection Checklist included as part of [Appendix 7](#).

Operation, maintenance, and management reports should be made by the Owner/Operator after each inspection and filed with the SWPPP. Copies of each suggested report form to be used for the proposed practices are included in this report.

Note that this plan shall be updated, as necessary, to include all permanent stormwater management structures listed on the NOT and that the plan shall include the operation and maintenance procedures

necessary for the structures to function as designed after final stabilization, as described in the SPDES General Permit.