SECTION 10.
BUFFERS

10.1 INTRODUCTION

This section describes the desired objectives, characteristics, and methods to develop and maintain vegetated buffers for the Number Nine Wind Farm (Project). Vegetated buffers are important for maintaining the water quality of local surface waters and providing habitat and travel corridors for wildlife. In addition, vegetated buffers provide an effective visual screen for certain development structures and the buffers around access roads provide important natural filters for runoff. Vegetated buffers will be maintained around Project turbines, access roads, substation, operations and maintenance (O&M) building, along the overhead portions of the electrical collector line, and along the approximately 51.6-mile electrical generator lead line. The generator lead line consists of 2 segments; the 26.2-mile North Generator Lead Line (North Line) and the 25.4-mile Bridal Path Generator Lead Line (Bridal Path Line).

Buffers around Project turbine pads, access roads, substations, and the O&M building will be preserved to provide stormwater and phosphorus treatment. The collector line and generator lead line will be continuously vegetated with grass and shrubs, and several methods will be used to maintain vegetated buffers along these proposed corridors. Buffers and restrictions for the Project will include:

1. Limited-cut stormwater buffers around turbines, access roads, substations, and the O&M building (see Section 12 of this Application for details on stormwater buffers);
2. Typical right-of-way (ROW) clearing and maintenance procedures for the Project;
3. Clearing and pole placement restrictions in wetlands;
4. Limited clearing within buffers of streams;
5. Selective clearing within an enhanced buffer around Atlantic salmon (*Salmo salar*) habitat stream crossings;
6. Selective clearing and timing restrictions in Significant Vernal Pool (SVP) buffers;
7. Selective clearing and timing restrictions within mapped Inland Waterfowl and Wading Bird Habitat (IWWH);
8. Selective clearing and minimization efforts within mapped Deer Wintering Areas (DWA);
9. Selective clearing within locations of identified rare plants; and
10. Clearing restrictions within historic sites.

The vegetation clearing practices proposed include a variety of techniques designed to minimize the impacts on sensitive resources. Restrictions include areas of no cutting, limited or selective clearing, hand-cutting only, and mechanized clearing with the selective use of herbicides in allowed areas. The specific methods used along the Project ROWs will be tailored

to meet the buffer objectives in a manner that provides a clear, achievable set of guidelines for construction and maintenance personnel. The Applicant will maintain these buffers according to the Post-Construction Vegetation Maintenance Plan (VMP), provided in Exhibit 10-A. The Applicant will also follow the protocol described in the Invasive Species Management Plan (ISMP), provided in Exhibit 10-B. It is anticipated that the Bridal Path Line will be acquired by a utility at some point in the future; therefore, an alternative VMP and ISMP is provided in Exhibit 10-C in the instance that this acquisition occurs.

If a third party (excluding a utility) acquires either the Bridal Path Line, and/or the North Line, separate from the Turbine Area, any VMP/ISMP obligations will be transferred to such third party. If a utility acquires either the Bridal Path Line, and/or the North Line, separate from the Turbine Area, those assets shall become a permanent part of the utility infrastructure and will be subject to the VMP and ISMP provided in Exhibit 10-C. In anticipation of this potential transfer, Central Maine Power Company and Emera Maine have requested that if the Department approves the VMP and ISMP included in Exhibit 10-C, the Department explicitly address this contingent approval in the Order approving the Number Nine Wind Farm application.

Table 1 summarizes the buffers and restrictions proposed for the Project, and describes the clearing and maintenance practices to be implemented for each type of buffer. Additional details and variations are included in the following sub-sections and in Exhibit 10-A.

Section 10.
Buffers

Table 10-1. Summary of Buffers and Restrictions for the Number Nine Wind Farm.

Resource Type	Typical Buffer Width	Clearing Restrictions within Buffer	Maintenance Restrictions within Buffer	Herbicide Use	Pole Placement
Typical Electrical Line ROW (Collector and Generator Lead)	Not applicable	Machine-cut large vegetation; remove, mow, or flail smaller vegetation	Cut capable species only at ground level	Allowed, with standard restrictions	Allowed
Wetlands	Not applicable	Winter clearing, when possible	Not applicable	Allowed when no standing water in wetland	Avoid and minimize when possible
Streams	25-100'	Within 25' of stream, only capable species greater than 8-10' will be cut; from 25-100', cut all species greater than 2" DBH, but no mowing, flailing, removal of additional shrub or herbaceous vegetation	Within 25' of stream, only capable species greater than 8-10' tall will be cut; from 25-100' vegetation will be cut similar to typical ROW maintenance	Not allowed	Avoid and minimize when possible
Atlantic Salmon Streams	100'	Cut only capable species greater than 8-10' tall; no other vegetation is cut	Cut only capable species greater than 8-10' tall; no other vegetation is cut	Not allowed	Avoid and minimize when possible
Significant Vernal Pools	100'	Cut only capable species greater than 8-10' tall; additional restrictions between April 1 and June 30	Cut only capable species greater than 8-10' tall; additional restrictions between April 1 and June 30	Not allowed	Not allowed within 100' of pool

Section 10.
Buffers

Resource Type	Typical Buffer Width	Clearing Restrictions within Buffer	Maintenance Restrictions within Buffer	Herbicide Use	Pole Placement
Inland Waterfowl/Wading Bird Habitat	Within mapped habitat only	Cut only capable species greater than 8-10' tall; if possible, 2-3 snags per 500' of corridor will be left to provide nesting habitat; no clearing between April 15 and July 15	Cut only capable species greater than 8-10' tall; no maintenance with motorized vehicles or mechanized equipment between April 15 and July 15	Not allowed within 25' of wetlands within habitat	Minimize pole location in habitat; locate pole in upland buffer where possible
Deer Wintering Areas	Within mapped habitat only	Cut only capable species greater than 8-10' tall; "feathering" of edge of corridor clearing to reduce clearing width	Cut only capable species greater than 8-10' tall; "feathering" of edge of corridor clearing to reduce clearing width	Allowed, with standard restrictions	Minimize pole location in habitat
Rare Plant Locations	Location of rare plant only	Cut only capable species greater than 8-10' tall within the demarcated habitat	Cut only capable species greater than 8-10' tall within the demarcated habitat; no vehicle use in habitat	Not allowed	Not allowed within demarcated habitat
Historic Site	33' from edge of historic site	No mechanized equipment within buffer. Hand cut or reach-in cutting only. No pulling of stumps or root balls and no grubbing. Cut vegetation lifted out of buffer with no dragging.	No mechanized equipment within buffer. Hand cut or reach-in cutting only. Cut vegetation lifted out of buffer with no dragging.	Allowed, with standard restrictions	Not allowed

10.2 BUFFER DESIGN CONSIDERATIONS

The number, size, location, and construction and maintenance restrictions for the Project buffers were determined using multiple sources. Consultation with regulatory agencies, review of Best Management Practices (BMP) and performance standards guidance, recently approved buffer standards for similar projects, ISO New England (ISO-NE) Vegetation Maintenance Standards, and the North American Electric Reliability Corporation's (NERC) Transmission Vegetation Management (FAC-003-3) requirements were considered when drafting these buffer and vegetation management standards for the Project. The buffers and restrictions proposed are designed to adhere to the regulatory guidelines and to protect environmentally sensitive resources. Seven critical goals were identified during the buffer development process:

1. Use natural, vegetated buffers as part of the stormwater and phosphorus control;
2. Comply with the parameters and requirements identified in this application for the initial clearing of the collector and generator lead lines;
3. Provide reliable operation of the collector and generator lead lines;
4. Protect and preserve natural resources and the natural environment;
5. Maintain the industrial and company standard ROW construction and maintenance practices;
6. Enable landowner access for existing land use activities; and
7. Continue the Applicant's commitment to environmentally sensitive development.

These goals were identified in an attempt to balance the operational needs of the Project with the environmental benefits of natural resource buffers. The Applicant believes the proposed buffers and restrictions combine successful, existing practices with focused resource concerns, while also being realistic for implementation in the field. The Applicant believes these buffers and restrictions and the VMP (Exhibit 10-A) proposed for this Project address concerns expressed by the Maine Department of Environmental Protection (MDEP) and the Maine Department of Inland Fisheries and Wildlife (MDIFW) and creates uniform and practical vegetative buffers.

10.3 TURBINE PADS, ACCESS ROADS, SUBSTATIONS, AND O&M BUILDING BUFFERS

Stormwater buffers for the turbine pads, access roads, substations, and O&M building will include limited-cut areas providing a visual break from Project components and providing phosphorus and stormwater treatment. Section 12 of this application contains the Stormwater Management Plan for the Project. The locations of these buffers are shown on the Project drawings in Section 12. In addition to these buffers, the turbine pads, with the exception of the gravel ring around the turbine and associated access roads, will be allowed to revegetate with herbaceous and low shrubs plants to provide additional buffering capacity.

10.4 TYPICAL RIGHT-OF-WAY CLEARING AND MAINTENANCE PROCEDURES

Construction of the collector and generator lead lines requires cutting vegetation to meet safety standards required by the ISO-NE to prevent vegetation from contacting the wires. Buffers are designed to allow the necessary cutting but also maximize protection of natural resources encountered within the ROW.

The Applicant's typical ROW construction and maintenance procedures require retaining and promoting low ground cover to the extent possible during construction, along with the restoration and stabilization of areas affected by construction and maintenance activity. The goal is to create a utility corridor that has diverse, healthy, low-growing vegetation cover that minimizes the need for maintenance yet provides cover for small wildlife and browse for larger mammals. This vegetation cover also reduces soil erosion and sedimentation to rivers, streams, brooks, and other wetland resources.

Ground disturbance will be limited primarily to structure locations and equipment access ways. Necessary erosion and sedimentation control measures will be installed and maintained for the duration of construction to prevent adverse impacts to surface waters and other resources. The collector and generator lead line ROWs will remain vegetated with low shrub and understory species subsequent to construction. Section 14 of this application, Basic Standards, expands on the Erosion and Sedimentation Control standards described in this section.

10.4.1 Typical Right-Of-Way Clearing Procedures

Prior to any construction or clearing activity, all resources (wetlands, streams, SVPs, IWWH, DWA, rare plant locations) and associated buffers will be flagged in the field to aid clearing crews with identification. A table that defines the flagging and marking methods will be provided to the clearing contractors. During active clearing, methods to reduce ground disturbance, erosion, and sedimentation will be used as applicable. Specific measures within each resource buffer are detailed in sections 10.5 through 10.12 below. To the extent possible, clearing operations will be performed in the winter during frozen ground conditions.

Typically, clearing contractors begin clearing with whole-tree harvesting machines that cut larger vegetation (trees, saplings, and large shrubs) at ground level. The remaining smaller vegetation (small trees and shrubs) is removed by hand-clearing crews and/or mowing and flailing machines. Significant branches that overhang the ROW and any dead or damaged trees outside the ROW that could contact the wires or cause an arc after construction (i.e., hazard trees) are also removed. Vegetation cut during the initial clearing will be chipped on site or removed, in accordance with the Maine Slash Law.

10.4.2 Typical Right-Of-Way Vegetation Maintenance Procedures

The objective of the Applicant's ROW vegetation maintenance will be to control the growth of woody vegetative capable of contacting the electrical lines to ensure the integrity and safe operation of the electrical lines, consistent with the ISO-NE Standards and NERC Transmission Vegetation Management (FAC-003-3). This will be accomplished by employing an integrated vegetation management strategy, which uses a combination of hand-cutting and selective herbicide applications. Mechanical mowing may be used in unusual circumstances to regain control of vegetation, should the typical procedures not be sufficient. Vegetation maintenance within the ROWs will typically be conducted on a 4- or 5-year cycle, depending on growth, vegetation type, weather, and geographic location. Capable species (i.e., tree species that are capable of growing to a height to potentially make contact with electrical lines) will be removed. Herbaceous vegetation and low-growing shrubs will be allowed to persist. Herbicide use is permitted along the typical ROW, subject to the regulations put forth by state and federal agencies, and the buffer standards provided below. Additional details regarding the VMP for the Project are provided in Exhibit 10-A.

10.5 FRESHWATER WETLAND BUFFERS AND RESTRICTIONS

Wetlands have been identified along the collector and generator lead lines throughout the Project area. Wetlands range in type from small, emergent wetlands formed in ruts from logging equipment to large forested wetland systems. Section 7, Exhibit 7-C of this application, contains detailed information about the wetland resources identified during natural resource delineations for the Project.

10.5.1 Wetland Clearing and Construction Procedures

No specific buffers are proposed for the wetlands identified within the collector or generator lead lines. To the extent possible, the Applicant will perform clearing operations in wetlands in the winter during frozen ground conditions to reduce the potential for disturbance to wetland resources. If winter clearing is not possible, timber mats will be used as necessary to prevent excessive rutting within wetlands. In addition, no refueling or maintenance of equipment, including chain saws, will be performed within mapped wetlands. No slash will be accumulated within mapped wetlands, and no slash will be accumulated within 50 feet of the upland edge of an emergent marsh or open water wetland.

Temporary soil disturbance will be restored to the original contours and allowed to revegetate naturally, where practicable. If larger areas of disturbance are created, the area will be stabilized with permanent seeding after clearing and construction are complete.

10.5.2 Wetland Maintenance Procedures

Vegetation maintenance within wetlands will typically be conducted on a 4- or 5-year cycle, depending on growth and vegetation. Consistent with clearing practices for the typical ROW, capable species within wetlands will be cut at ground level. Vegetation maintenance within freshwater wetlands will primarily be conducted by hand cutting with hand tools or chainsaws. Herbicide use is permitted in wetlands with no standing water at the time of the application. No herbicides will be stored, mixed, or transferred between containers within wetlands, and no refueling of chain saws or other equipment will be allowed.

10.5.3 Structure Placement

Placement of permanent structures (utility poles) in wetlands has been avoided where possible within the Project ROWs. Additionally, the placement of structures within 100 feet of wetlands in Land Use Planning Commission (LUPC) jurisdiction designated as P-WL1 wetland (Wetlands of Special Significance) will be avoided where possible. A total of 148 poles on the collector line, 78 poles on the North Line, and 114 poles on the Bridal Path Line will be located within wetlands. A total of 28 poles on the collector line, 5 poles on the North Line, and 30 poles on the Bridal Path Line will be located within 100 feet of mapped P-WL 1 wetlands in LUPC jurisdiction.

10.6 STREAM BUFFERS

The Applicant proposes a minimum 25-foot buffer, measured from the top of each bank, for the streams (i.e., perennial and intermittent streams that are not protected by other habitat buffers) crossed by the ROWs and those adjacent to access roads, with additional clearing restrictions within 100 feet of these streams. Streams crossed by the ROWs range from perennial streams mapped by the U.S. Geological Survey (USGS) to small, intermittent streams that are disconnected from larger stream systems. There are 54 streams within the collector line ROW, 62 streams within the North Line ROW, and 16 streams within the Bridal Path Line ROW. Section 7, Exhibit 7-C of this Application contains detailed information and locations of these streams.

To minimize soil disturbance adjacent to rivers and streams, the collector lines and generator lead lines have been designed to avoid placing structures in stream buffers where possible. In addition there are procedures and restrictions to protect these resources from sedimentation and other adverse impacts during construction and vegetation maintenance activity.

Vegetated buffers around streams are typically designed to provide one or more of the following functions:

- Minimize soil erosion and sedimentation of surface waters;
- Slow the velocity, increase the infiltration, and remove sediment and other contaminants in stormwater runoff before it enters surface waters;

- Deter off-road vehicles from crossing streams;
- Provide shade to surface waters and reduce the warming effect of sunlight (insolation);
- Provide cover for wildlife while accessing the waters and traversing the ROWs; and
- Provide a visual screen between development and recreational users of a waterbody.

A 25-foot vegetated buffer, along with an additional 100-foot buffer where removal of vegetation is further restricted, protects streams crossed by the Project from adverse effects from sedimentation and contaminated runoff. Generally, converting forest cover to a scrub-shrub or early successional cover type within an electrical line ROW increases the density of the root mass and near-ground leaf and stem material which improves the ability of the land to absorb runoff.

In 1993, A.M. Peterson reported in the *North American Journal of Fisheries Management* that the removal of tree canopy on new ROWs increases stream insolation during the short-term; however, within 2 years, the areas are bordered by dense shrubs and emergent vegetation, and water temperatures are not significantly greater when compared with upstream forested reaches.[1] The following sections describe the restrictions related to vegetation clearing and maintenance to provide taller vegetation within stream buffers. This vegetation consists of tall shrubs and short trees that provides additional shading of streams and reduces insolation of the stream. The resulting stream buffers will continue to function in a similar manner as before construction.

The stream crossing table provided as Table 1 in Exhibit 10-A includes the names and locations of streams crossed by the ROW.

10.6.1 Stream Buffer Clearing and Construction Procedures

During initial clearing, only capable species greater than 8–10 feet tall will be removed within the 25-foot buffer zone. No other vegetation, other than dead or hazard trees, will be removed unless necessary for construction access or temporary bridge crossings, and impacts to shrub and herbaceous vegetation will be minimized. Capable species greater than 8–10 feet tall will be removed by hand-cutting or by traveling/reaching into the buffer zone with low ground pressure (tracked) tree harvesting equipment. Mobile equipment will only be allowed inside the buffer on timber mats or while carefully monitored to limit disturbance and rutting.

Within 100 feet of streams, crews with whole-tree harvesting machines will ground-cut vegetation greater than or equal to 2 inches diameter-at-breast height. However, no removal, mowing, or flailing of remaining shrub and herbaceous vegetation will occur within 100 feet of the streams to provide additional protection to the streams. No slash will be placed within 50 feet of the

[1] Peterson, Allen M., *Effects of Electric Transmission Rights-Of-Way on Trout in Forested Headwater Streams In New York*, North American Journal of Fisheries Management, vol. 13, pp. 581-585, 1993.

edge of the stream. When possible, clearing within the stream buffers will take place during frozen ground conditions or will utilize timber mats to minimize disturbance.

During construction, temporary equipment crossing structures will be used to span streams within the ROWs. Temporary equipment crossings will consist of timber mats or bridges and will span the stream channel with no disturbance to the channel or banks. An environmental inspector will be present during construction to observe the activity at these sensitive resources and when any temporary equipment crossing structures will span the waterbody. The type and location of erosion and sedimentation controls will follow the design details, and will be established at the time of construction to suit the unique needs of each location.

Upon completion of construction, any temporary soil disturbance within stream buffers will be restored to the original contours and allowed to revegetate naturally, where practicable. If larger areas of disturbance are created, the area will be stabilized with permanent seeding after clearing and construction are complete. Herbicide use is prohibited within the 100-foot stream buffer. No equipment refueling or maintenance will be performed within the 100-foot stream buffer zone, unless done so on a public access road.

10.6.2 Stream Buffer Maintenance Restrictions

Vegetation maintenance within stream buffers will typically be conducted on a 4- or 5-year cycle, depending on growth and vegetation. Consistent with clearing practices for construction, only capable species greater than 8–10 feet tall will be removed within the 25-foot buffer zone. Removal will be by hand-cutting or reach-in techniques only within the 25-foot buffer. Within the 100-foot buffer, vegetation will be cut similar to typical ROW maintenance procedures. No herbicides will be applied within the 25-foot stream buffer, no herbicides will be stored, mixed, or transferred between containers within the 100-foot stream buffer areas, and no refueling of chain saws or other equipment will be allowed within the 100-foot buffer, unless done so on a public access road.

10.6.3 Structure Placement

The number of permanent structures (utility poles) placed within 25 feet of streams has been minimized to the greatest extent possible. A total of only 2 structures on the collector line and 5 structures on the North Line will be located within 25 feet of a stream. No structures on the Bridal Path Line will be located within 25 feet of a stream.

10.7 ATLANTIC SALMON HABITAT STREAM BUFFERS

In 2009, the US Fish and Wildlife Service designated Critical Habitat for the freshwater geographic range occupied by the Gulf of Maine Distinct Population Segment of Atlantic salmon, including

all perennial streams, rivers, and lake habitats connected to the marine environment (50 CFR 226: Federal Register, June 19, 2009). A portion of the Bridal Path Line, approximately 15.5 miles in TA R2 WELS, Forkstown Twp, and Haynesville, is located within the designated Critical Habitat (HUC 10 0102000302 East Branch Mattawamkeag River and HUC 10 0102000301 West Branch Mattawamkeag River). The perennial streams located within this section of the Bridal Path Line are considered Critical Habitat for Atlantic salmon. Within this portion of the line, a 100-foot buffer will be established around perennial streams to provide enhanced protection to these streams. Enhanced construction design criteria and clearing and maintenance restrictions will provide additional shading of perennial streams crossing the ROW to the maximum extent allowed by the safety considerations. The ROW within the designated Critical Habitat contains 9 perennial streams that will receive this enhanced buffer.

10.7.1 Atlantic Salmon Habitat Stream Buffer Clearing and Construction Procedures

During initial clearing of the ROW, only capable species greater than 8–10 feet tall will be removed within the 100-foot buffer. Topping trees will be utilized only if it will leave sufficient leaf matter to sustain the tree. No other vegetation other than dead or hazard trees will be removed unless necessary for construction access or temporary stream crossings. Vegetation removal within the 100-foot buffers will be by hand-cutting or by traveling/reaching into the buffer zone with low ground pressure (tracked) tree harvesting equipment. Mobile equipment will only be allowed inside the buffer on timber mats or while carefully monitored to limit disturbance and rutting. Due to the limited reach of mobilized tree harvesting equipment (e.g., feller bunchers or mechanical harvesters), access ways may be needed within the buffers. These access ways will enable cutting and removing large trees without the potential for additional ground disturbance and damage to remaining vegetation that can occur if the trees were hand cut and dragged out of the buffer with a cable. Additionally, no refueling or equipment maintenance (including chainsaws) will be performed within the Atlantic salmon stream buffer zone. No slash will be placed within 50 feet of the edge of the stream.

Temporary erosion and sedimentation control measures will be implemented within the Atlantic salmon stream buffer. Temporary soil disturbance caused by the use of harvesting equipment will be restored by returning the ground to its original contour and allowing the area to revegetate naturally, where practicable. If larger areas of disturbance are created, the area will be stabilized with permanent seeding after clearing and construction are complete.

10.7.2 Atlantic Salmon Habitat Stream Buffer Maintenance Procedures

Vegetation maintenance within the 100-foot Atlantic salmon habitat stream buffers will typically be conducted on a 4- or 5-year cycle, depending on the growth and vegetation type. The vegetation maintenance procedures and restrictions within these buffers are the same as those applied during the initial clearing, with limited use of motorized equipment in areas that are

directly accessible from public or private access roads. No herbicides will be used, stored, mixed, or transferred between containers within the Atlantic salmon stream habitat buffer areas, and no refueling or equipment maintenance (including chainsaws) will be performed within the Atlantic salmon stream buffer zone during maintenance activities.

10.7.3 Atlantic Salmon Habitat Stream Buffer Structure Placement

The number of structures placed within 100 feet of Atlantic salmon streams has been minimized to the greatest extent possible. Within the designated Critical Habitat, only 2 poles will be located within the 100-foot buffers, with the closest of these 2 poles located at least 68 feet from the stream.

10.8 SIGNIFICANT VERNAL POOL BUFFERS

Seasonally appropriate vernal pool surveys were conducted for the Project during May and June, 2014 and during May and June, 2015..

Twenty-three SVPs were identified either within the Project ROWs or had critical terrestrial habitat that overlapped with the ROWs: 14 on the collector line, 6 on the North Line, and 4 on the Bridal Path Line. The Project design proposes no direct impacts to the pool depressions of the SVPs crossed by the ROWs; however, the Project will result in clearing impacts to the critical terrestrial habitat within 250 feet of these SVPs. The Applicant has established a 100-foot buffer around the SVPs located within the collector and generator lead line ROWs to minimize these impacts and provide enhanced protection to these resources. Vernal pool survey results for the Project can be found in Section 7, Exhibit 7-C of this application.

10.8.1 Significant Vernal Pool Clearing and Construction Procedures

A minimum 100-foot vegetated buffer, as measured from the edge of the pool depression, will be maintained for the SVPs crossed by the collector and generator lead line ROWs. During clearing, only capable species greater than 8-10 feet tall will be removed within the buffer. No other vegetation, other than dead or hazard trees, will be removed unless necessary for construction access.

Large trees will be cut and carefully removed from the buffer area. Due to the limited reach of mobilized tree harvesting equipment (e.g., feller bunchers or mechanical harvesters), access ways may be needed within the buffers. These access ways will enable cutting and removing large trees without the potential for additional ground disturbance and damage to remaining vegetation that can occur if the trees were hand cut and dragged out of the buffer with a cable. Low ground pressure equipment will enter/exit the buffer in a manner that minimizes disturbance. Mats will be utilized if necessary to prevent excessive rutting or soil displacement.

No equipment travel will occur within the SVP depressions. Herbicides will not be used within the 100-buffer. Additionally, no refueling or maintenance of equipment, including chainsaws, will be performed within SVP buffers. No slash will be accumulated within 50 feet of the edge of the SVP depression.

Temporary erosion and sedimentation control measures will be implemented within the SVP buffers. Consistent with the practices along the entire ROW, ground disturbance caused by the use of harvesting equipment will be repaired by returning the ground to its original contour, as needed, and allowing the area to revegetate naturally, where practicable. If larger areas of disturbance are created, the area will be stabilized with permanent seeding after clearing and construction are complete.

Initial ROW clearing within SVP buffers will be performed under frozen ground conditions whenever practical. Between April 1 and June 30, clearing the ROWs will not be conducted with wheeled or tracked equipment within the 100-foot buffer surrounding the SVPs. Only hand tools will be used. Wheeled or tracked vehicles may be permitted on existing roads or established access ways during this time to facilitate Project construction. Additionally, no clearing within 25 feet of SVPs will occur during this time period.

10.8.2 Significant Vernal Pool Vegetation Maintenance Procedures

Similar to maintenance operations for stream buffers, only capable species greater than 8-10 feet tall will be removed from the 100-foot buffers during routine vegetation maintenance of the ROWs. Removal will be by hand cutting or reach-in techniques only, with limited use of motorized equipment in areas that are directly accessible from public or private access roads or from the access ways established during initial clearing. The use of mechanized equipment will not be allowed within the SVP depression. No herbicides will be used, stored, mixed, or transferred between containers within the 100-foot SVP buffer areas, and no refueling of chainsaws or other equipment will be allowed during maintenance, unless done so on a public access road.

Maintenance of the ROW between April 1 and June 30 will not be conducted with wheeled or tracked equipment within the 100-foot buffer surrounding the SVPs. Only hand tools will be used. Additionally, no vegetation maintenance will occur within 25 feet of SVPs during this time period.

Exhibit 10-A provides additional details regarding the vegetation maintenance practices within SVP buffers.

10.8.3 Significant Vernal Pool Structure Placement

The number of structures placed within 250 feet of SVPs has been minimized to the greatest extent possible. Three permanent structures (utility poles) will be located within 250 feet of an SVP along the generator lead lines, and none will be located within 100 feet of the depression.

A total of 33 structures on the collector line will be located within 250 feet of a SVP depression, but only 9 will be within 100 feet of the depression.

10.9 INLAND WATERFOWL AND WADING BIRD HABITAT

Inland Waterfowl and Wading Bird Habitats (IWWH) are habitats mapped by MDIFW that contain an inland wetland complex used by waterfowl and wading birds, plus a 250-foot upland buffer surrounding the wetland. The upland buffer is considered to be part of the mapped habitat. No additional buffer is proposed for the Project, and the clearing and maintenance restrictions apply to the mapped habitat only. The proposed collector line ROW crosses mapped IWWH at 3 locations in the Turbine Area, 1 in TD R2 WELS and 2 in T8 R3 WELS. The proposed generator lead line crosses mapped IWWH at 3 locations along the Bridal Path Line, with 2 in TA R2 WELS and 1 in Forkstown Twp. No other impacts to IWWH are proposed for the Project. IWWH areas are shown on the Natural Resource Maps provided in Section 7, Exhibit 7-C, and on the final design plans. The Applicant has identified specific construction design criteria and further vegetative maintenance restrictions that will minimize impacts to the mapped habitat to the extent possible.

10.9.1 Inland Waterfowl and Wading Bird Clearing and Construction Procedures

During initial clearing of the collector lines and generator lead lines, only capable species greater than 8-10 feet tall will be removed. Topping of large-diameter trees (greater than 12 inch diameter at breast height) is the preferred method of clearing in the IWWH to create snags to support waterfowl nesting cavities. No other vegetation, other than dead or hazard trees, will be removed unless necessary for construction access. Removal of capable species will be by hand-cutting or with low ground pressure tree harvesting equipment working from inside the IWWH. Mats will be used as necessary to prevent excessive rutting. In addition, no herbicide use will be permitted within 25 feet of any wetland within the IWWH and no refueling or maintenance of equipment, including chain saws, will be performed within the IWWH. No accumulation of slash will be left within 50 feet of the edge of the mapped habitat.

Where possible, two to three snags (i.e., dead, standing trees) will be left per approximately 500 linear feet of corridor within the IWWH to provide nesting habitat for waterfowl. Snags will consist of naturally occurring dead or dying trees or will be created by topping and girdling the largest diameter capable species available in the stand to the maximum height allowable. Snags will only be left or created if they do not present a safety hazard to operation of the collector lines and generator lead lines.

Vegetation clearing within the IWWH will be performed under frozen ground conditions whenever practical. Between April 15 and July 15, no clearing within a mapped IWWH will occur unless otherwise approved in consultation with MDEP and MDIFW.

Bird diverters or marker balls will be installed according to manufacturer's guidelines and applicable transmission line codes where the collector lines and generator lead lines cross mapped IWWH to minimize the risk of bird collisions. The Applicant is also committed to following guidance provided by the Avian Power Line Interaction Committee (APLIC) to reduce and prevent bird mortalities and associated power outages.

10.9.2 Inland Waterfowl and Wading Bird Habitat Vegetation Maintenance Procedures

The vegetation maintenance procedures and restrictions within mapped IWWH are primarily the same as those that apply during initial clearing, except that topping of trees and the creation of snags will not be utilized during maintenance activities. Similar to clearing restrictions, maintenance procedures will be avoided between April 15 and July 15. Exhibit 10-A provides additional details regarding the vegetation maintenance practices within mapped IWWH.

10.9.3 Inland Waterfowl and Wading Bird Habitat Structure Placement

The Applicant has located structures (utility poles) outside of the mapped IWWH where possible. When structures were required within the habitat, structures were located in the upland buffer portion of the habitat to the extent possible. A total of 24 poles will be located within mapped IWWH along the collector line, 15 of which will be located within the upland portion of the habitat. A total of 9 structures will be located within mapped IWWH along the Bridal Path Line, 4 of which will be located within the upland portion of the habitat.

10.10 DEER WINTERING AREAS

Deer Wintering Areas (DWA) provide important refuge for white-tailed deer (*Odocoileus virginianus*) during the winter months in northern climates and are typically characterized by an extensive forest stand of mature softwood species with a dense forest canopy. There are no proposed impacts to DWAs in the Turbine Area or along the proposed collector line. The Bridal Path Line crosses 2 DWAs mapped by MDIFW in Haynesville (#100068 and #100075). During the winter of 2014, surveys of the 2 mapped DWAs were performed to assess use and habitat characteristics (see Section 7, Exhibit 7-D2 of this application). The surveys indicated that the 2 DWAs may be providing suitable DWA cover. In the DWAs, the proposed generator lead corridor has the potential to remove contiguous softwood shelter and/or fragment existing or potential travel corridors through the DWAs. Therefore, the Applicant has proposed clearing and maintenance procedures to minimize impacts to the DWAs.

10.10.1 Deer Wintering Area Clearing and Construction Procedures

During initial clearing of the collector lines and generator lead lines, only capable species greater than 8-10 feet tall will be removed. No other vegetation, other than dead or hazard

trees, will be removed unless necessary for construction access. Removal of capable species will be by hand-cutting or with low ground pressure tree harvesting equipment working from inside the DWA. Mats will be used as necessary to prevent excessive rutting. In addition, no refueling or maintenance of equipment, including chain saws, will be performed within the DWA. No accumulation of slash will be left within 50 feet of the edge of the mapped habitat.

In addition, clearing of the ROWs within mapped DWAs will consist of "feathering" ("V-style clearing") of the cleared area (Figure 1). "Feathering" means that the vegetation will be cut at an angle, so that taller vegetation is retained at the corridor edges and shorter vegetation is retained in the middle of the corridor. This method results in a narrower crossing corridor for deer and other wildlife in these areas. With taller vegetation on the edges of the ROW, less wintering habitat is impacted through the construction of the line and a greater winter refuge is retained.

10.10.2 Deer Wintering Area Vegetation Maintenance Procedures

The vegetation maintenance procedures and restrictions within mapped DWAs will be the same as those that apply during initial clearing. Maintenance procedures will include "feathering" of the cleared corridor within the mapped habitat. Exhibit 10-A provides additional details regarding the maintenance practices that will be implemented within the DWAs.

10.10.3 Deer Wintering Area Structure Placement

The Applicant has located structures (utility poles) outside of the mapped DWAs where possible. When structures were required within the habitat, structures were located in the upland portion of the habitat to the maximum extent practicable. A total of 13 structures will be located within mapped DWA along the Bridal Path Line, 9 of which will be located within the upland portion of the habitat.

10.11 RARE PLANT LOCATIONS

Rare plants were found in 15 locations along the proposed generator lead lines, as identified by Stantec during wetland delineations and rare plant surveys in 2014 and 2015. The rare plant species identified include:

- Showy lady's-slipper (*Cypripedium reginae*): State-Threatened[2,3] (2 locations along Bridal Path Line; 1 location along North Line);
- Swamp honeysuckle (*Lonicera oblongifolia*): State-Special Concern (3 locations along Bridal Path Line);

[2] State rarity status is based on the Maine Natural Areas Program Rare, Threatened, and Endangered Plant Taxa list, as updated November 2012.
[3] This listing of this species is presently proposed by the Maine Natural Areas Program to change from Threatened to Special Concern.

- Lesser yellow water crowfoot (*Ranunculus gmelinii*): State-Threatened[4] (2 locations along Bridal Path Line; 1 location along North Line);
- Marsh valerian (*Valeriana uliginosa*): State-Special Concern (1 location along Bridal Path Line and 1 location along North Line);
- Northern bog sedge (*Carex gynocrates*): State-Special Concern (2 locations along Bridal Path Line)
- Goldie's fern (*Dryopteris goldiana*): State-Special Concern (1 location along North Line); and
- Male fern (*Dryopteris filix-mas*): State-Endangered (1 location adjacent to the North Line).

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In the areas surrounding these rare plant locations, vegetation clearing and maintenance of the proposed generator lead line ROWs has the potential to impact the plants and/or alter their habitat. The Applicant has identified additional construction criteria and vegetative maintenance restrictions that will minimize impacts to the rare plants. The above-listed plants are either herbaceous or shrub species, therefore compliance with ISO-NE and NERC standards is not a concern for these buffers. These additional restrictions will apply only to the demarcated location of identified rare plants. No additional buffer will be established surrounding the rare plant locations. These restrictions are intended to maintain the hydrology and limit soil disturbance within these rare plant locations. Refer to Section 9 of this application for additional information regarding the rare plant locations.

10.11.1 Rare Plant Location Clearing and Construction Procedures

Prior to initial clearing of the ROWs near the rare plant locations, a qualified consultant will demarcate the locations of the rare plants. In these locations, the habitat containing the densest concentrations of rare plants will be demarcated with brightly colored flagging or other obvious material (e.g., caution tape, snow fence). This process will serve to clearly distinguish the area in which the clearing restrictions must be applied.

During the initial clearing, only capable species within the demarcated habitat that are 8-10 feet or taller will be cut at ground level. To maintain suitable habitat conditions for the rare plants, no other vegetation will be cut within the demarcated areas. To avoid and minimize disturbance to flagged rare plants, capable species within the demarcated habitat will be cut by hand or by reach-in techniques. No mechanized harvesting equipment will be permitted within the demarcated rare plant locations. The clearing contractor will also maintain wetland hydrology within and immediately adjacent to the rare plant locations when operating equipment around the habitats. Mats and other erosion control materials will be utilized to minimize impacts to wetland hydrology and to reduce rutting around the plant locations.

[4] This listing of this species is presently proposed by the Maine Natural Areas Program to change from Threatened to Special Concern.

10.11.2 Rare Plant Location Vegetation Maintenance Procedures

The vegetation maintenance restrictions within rare plant locations are the same as those that apply during the initial clearing process. Maintenance procedures will be designed to avoid impacts to flagged rare plants, maintain hydrology, limit soil disturbance, and minimize impacts within the demarcated rare plant habitats. No herbicide use is permitted within the demarcated rare plant locations. Exhibit 10-A details the vegetation maintenance practices that will be implemented in the rare plant locations.

10.11.3 Rare Plant Location Structure Placement

No structures (utility poles) will be located within the mapped rare plant locations.

10.12 HISTORIC SITES

One historic site was identified along the proposed North Line. The historic site, the Frisbie Homestead, is a cellar hole marking a homestead location. The site is located between B Road and B Stream in Houlton. In the area surrounding this historic site, vegetation clearing and maintenance of the proposed generator lead line has the potential to impact the site. The Applicant has identified additional construction criteria and vegetative maintenance restrictions that will minimize impacts to the site. These additional restrictions will apply to the location of the historic site, plus a 33-foot (10 meter) buffer around the historic structure. These restrictions are intended to avoid ground disturbance within the buffer.

10.12.1 Historic Site Clearing and Construction Procedures

Prior to initial clearing of the ROW near the historic site, a qualified consultant will demarcate the edge of the 33-foot historic site buffer. This process will serve to clearly distinguish the area in which the clearing restrictions must be applied.

During the initial clearing, no mechanized equipment will be permitted within the buffer. All capable species will be cut at ground level within the buffer. Harvesting equipment set up outside of the buffer may reach into the buffer to facilitate cutting trees; however, no ground disturbance is permitted. To this end, cut vegetation will be lifted out of the buffer; no cut vegetation will be dragged out of the buffer. No grubbing or pulling of stumps is permitted within the buffer. No placement of debris, brush or other material is permitted within the buffer, and no accumulation of slash will be left within the buffer.

10.12.2 Historic Site Vegetation Maintenance Procedures

The vegetation maintenance restrictions within and surrounding historic site are the same as those that apply during the initial clearing process. Maintenance procedures will be designed to

minimize ground disturbance within the demarcated buffer. Exhibit 10-A details the vegetation maintenance practices that will be implemented in the historic site location.

10.12.3 Rare Plant Location Structure Placement

No structures (utility poles) will be located within the historic site location.

10.13 POST-CONSTRUCTION RIGHT-OF-WAY VEGETATION MAINTENANCE

The Applicant will be adopting vegetation maintenance practices to adequately clear vegetation during operation of the line. As outlined in the preceding sections, the Applicant must also maintain appropriate buffers that serve a range of purposes, including environmental conservation, protection of fisheries, and visual mitigation.

Routine vegetation maintenance of the ROW will be consistent with industry standards to maintain the integrity and functionality of the conductors, to maintain access in case of emergency repairs, and to facilitate safety inspections. Clearing and trimming vegetation before it gets too close to electrical conductors is essential to ensure the safe, reliable, and uninterrupted availability of electrical power. Power outages may occur if trees or other vegetation come in contact with or get too close to the conductors. In either case, an object in close proximity to the conductor can create an electric arc that can cause short circuits and fires. Consistent with operating procedures and to ensure safe, reliable operation, the VMP must ensure that there is a minimum distance of 15 feet between any object and the conductor during all phases of the maintenance cycles. Failure to do so may result in the line short circuiting and/or line outages.

The Applicant's proposed buffer maintenance plan balances the practical need to maintain the safety and integrity of the line with the environmental benefits of the proposed buffers.

10.13.1 Vegetation Maintenance Plan

The Applicant has prepared a VMP (Exhibit 10-A) to be a stand-alone document containing post-construction vegetation maintenance requirements specific to the Project. The VMP contains detailed descriptions of the procedures and maintenance restrictions that apply to the listed buffers and other protected areas. The VMP also describes the system of identiying the buffers and resources in the field either by use of flagging and signage or by the use of GPS data and GIS shapefiles.

If a utility acquires either the Bridal Path Line, and/or the North Line, separate from the Turbine Area, those assets shall become a permanent part of the utility infrastructure and will be subject to the VMP provided in Exhibit 10-C.

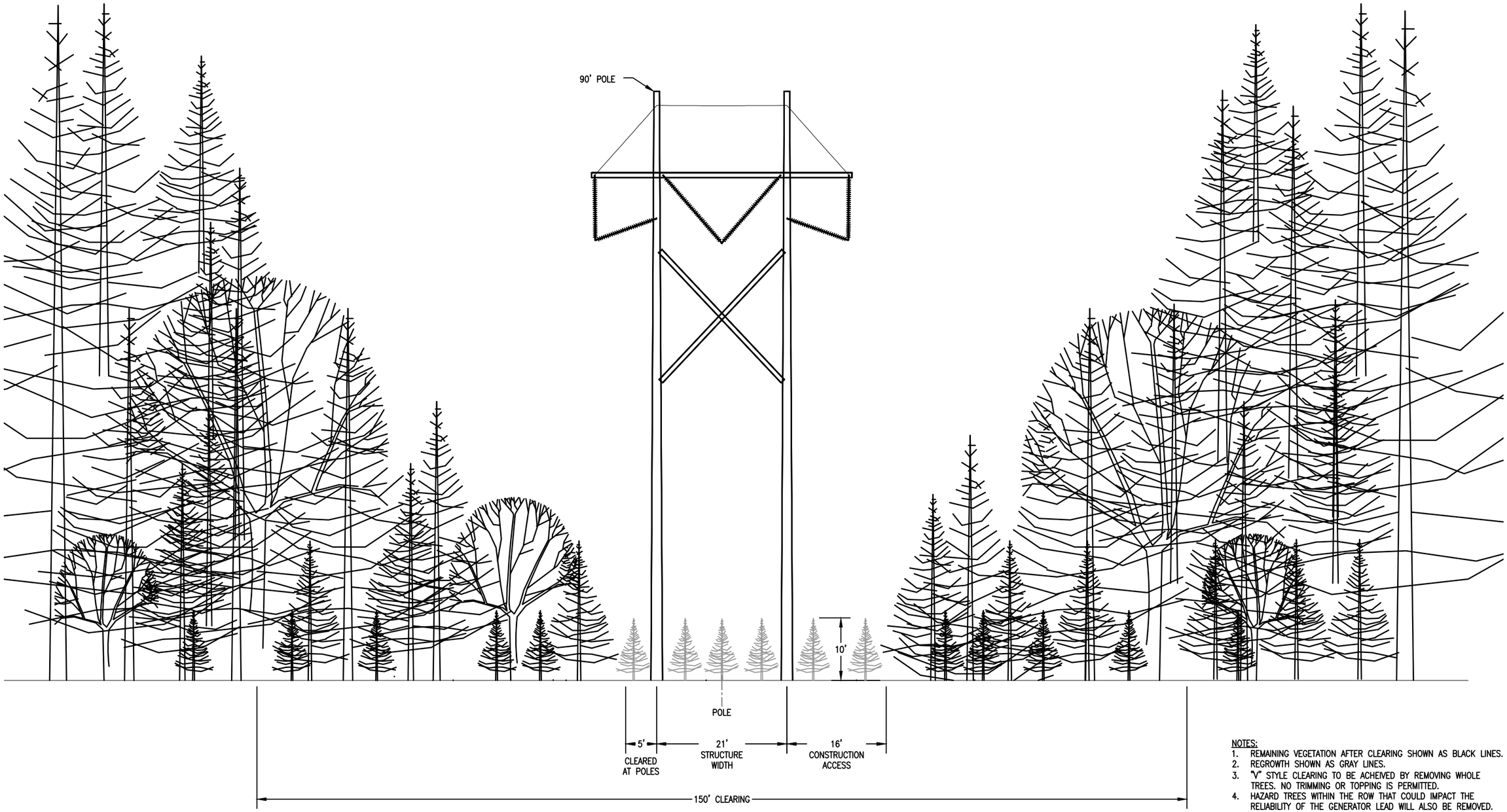
10.13.2 Invasive Species Management Plan

The Applicant has prepared an ISMP (Exhibit 10-B) which is designed to address the anticipated procedures for minimizing and controlling the potential spread of invasive plant species as a result of construction activities and enhancing the function and value of uplands and wetlands located within the collector and generator lead line corridors. The ISMP identifies invasive species known or likely to occur within the Project area, recommends control strategies, and outlines an invasive species monitoring plan with a suggested monitoring and reporting schedule.

If a utility acquires either the Bridal Path Line, and/or the North Line, separate from the Turbine Area, those assets shall become a permanent part of the utility infrastructure and will be subject to the ISMP provided in Exhibit 10-C.

FIGURES

Figure 1. Deer Wintering Area "V-Style" Clearing



NOTES:
1. REMAINING VEGETATION AFTER CLEARING SHOWN AS BLACK LINES.
2. REGROWTH SHOWN AS GRAY LINES.
3. "V" STYLE CLEARING TO BE ACHEIVED BY REMOVING WHOLE TREES. NO TRIMMING OR TOPPING IS PERMITTED.
4. HAZARD TREES WITHIN THE ROW THAT COULD IMPACT THE RELIABILITY OF THE GENERATOR LEAD WILL ALSO BE REMOVED.

SGC Engineering, LLC
a part of Senergy

edp renewables

ISSUED FOR PERMIT

DATE:	SCALE:	DRAWN:	DESIGN:	APPD:
MARCH 9, 2015	N.T.S.	SJF	DLH	TMH

NO.	REVISION	APPD:	DATE:
A	ISSUED FOR PERMIT	TMH	3/17/2015

TITLE:
V STYLE CLEARING EXHIBIT
DEER WINTERING AREAS

PROJECT:
NUMBER NINE WIND FARM
AROOSTOOK COUNTY, MAINE

CLIENT:
NUMBER NINE WIND FARM LLC
c/o EDPR, NA LLC, 808 TRAVIS, SUITE 700, HOUSTON, TEXAS 77002

SGC PROJECT NUMBER
1233000

EXHIBIT NUMBER
1233-13-1002

REVISION
A

SHEET NUMBER
1 OF 1

Exhibit 10-A. POST-CONSTRUCTION VEGETATION MAINTENANCE PLAN

Post-Construction
Vegetation Maintenance Plan

Number Nine Wind Farm
Aroostook County, Maine

Prepared for:
Number Nine Wind Farm LLC

Prepared by:
Stantec Consulting Services Inc.

July 2015

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1.0 INTRODUCTION

Number Nine Wind Farm, LLC (the Applicant) has proposed construction of the Number Nine Wind Farm (Project), a utility-scale wind energy facility in Aroostook County, Maine. The proposed Project will include up to 119 turbines; associated 34.5-kilovolt (kV) electrical collector lines (collector line) and access roads, a project substation, and an Operations and Maintenance (O&M) building in the turbine area; and two segments of a 345-kV electrical generator lead line (generator lead). The Project is primarily located in undeveloped land currently used for commercial forestry operations, with a broad network of dirt and gravel logging roads. The Project will utilize existing roads to provide access for much of the Project. The electrical collector line in the turbine area will be largely co-located with existing and proposed Project roads, the northern portion of the generator lead line (North Generator Lead Line) will consist primarily of newly cleared right-of-way (ROW), and the southern portion of the generator lead line (Bridal Path Generator Lead Line) will be located within an existing utility easement that was first cleared in the 1960's.

This Post-Construction Vegetation Maintenance Plan (VMP) addresses the restrictive maintenance requirements for natural resources along the above-ground portion of the electrical collector line within the turbine areas and the two segments of electrical generator lead line. The requirements described in this VMP, as proposed by the Applicant and incorporated into federal, state, and local permits for the project, apply to routine maintenance along the collector and generator lead rights-of-way (ROW) and are not intended to apply to emergency maintenance and repair actions.

The goal of the VMP is to supply the Applicant's maintenance personnel and contractors with a cohesive set of vegetation maintenance specifications for the ROWs. The Applicant or their designated representatives will regularly inspect all work and require corrective steps to be taken where necessary following the specifications outlined in the VMP. The VMP is intended to be used in conjunction with the project As-Built Plan and Profile drawings to locate the areas where maintenance restrictions apply.

The resources subject to restrictive maintenance requirements include:

- Wetlands and streams;
- Perennial streams within designated Atlantic salmon (*Salmo salar*) habitat;
- Significant Vernal Pools (SVP);
- Inland Waterfowl and Wading Bird Habitat (IWWH);
- Deer Wintering Areas (DWA);
- Rare plant locations;
- Historic site locations;
- Locations over significant sand and gravel aquifers; and
- Osprey nests that are built on transmission line structures.

In locations where individual restrictions or procedures overlap or multiple restrictions apply, the more stringent restrictions and all applicable procedures will be followed by the Applicant's maintenance personnel and contractors.

2.0 RIGHT-OF-WAY VEGETATION MAINTENANCE PROCEDURES

2.1 TYPICAL MAINTENANCE PROCEDURES

Routine vegetation maintenance along the collector and generator lead ROWs is required to meet the following goals:

1. Maintain the integrity and functionality of the line;
2. Maintain access in case of emergency repairs; and
3. Facilitate safety inspections.

Therefore, the objective of the Applicant's ROW vegetation maintenance will be to control the growth of woody vegetative capable of contacting the electrical lines to ensure the integrity and safe operation of the collector and generator lead lines, consistent with the ISO New England Vegetation Maintenance Standard (ISO-NE Vegetation Management Standard)[1] and with the standards of North American Electric Reliability Corporation's (NERC) Transmission Vegetation Management.[2] This will be accomplished by practicing an integrated vegetation management strategy, which uses a combination of hand-cutting and selective herbicide applications. Mechanical mowing may be used in unusual circumstances to regain control of vegetation, should the typical procedures not suffice.

Throughout clearing and construction, shrub and herbaceous vegetation will remain in place to the extent possible. Removing large trees will be done during initial ROW clearing prior to construction of the new electrical lines. Follow-up maintenance activities during operation of the line require only the selective removal of "capable species," dead and "hazard trees." Capable species are those plant species that are capable of growing tall enough to violate the required clearance between the conductors and vegetation established by the ISO-NE Vegetation Management Standard. The ISO-NE Vegetation Management Standard requires that a minimum of 15 feet of separation be maintained between vegetation and the conductors.[3] Due to the sag of the electric transmission lines between the poles, which varies with the distance between poles, tension on the wire, electrical load, air temperature and other variable conditions, the

[1] ISO New England Operating Procedure No. 3, Transmission Outage Scheduling – Appendix C – ISO New England Right-of-Way Vegetation Management Standard, February 1, 2005.
[2] North American Electric Reliability Corporation. Transmission Vegetation Management, Standard FAC-003-2 Technical Reference. September 30, 2011.
[3] ISO New England Operating Procedure No. 3, Transmission Outage Scheduling – Appendix C Attachment, February 1, 2005.

required ISO-NE clearance is typically achieved by removing capable species and topping other vegetation exceeding 8–10 feet tall. Removing vegetation at this height typically allows for the maintenance of 25 feet of separation between vegetation and the lines, thereby adhering to both the ISO-NE and NERC standards. Hazard trees are those trees that pose an imminent threat to violating the minimum separation standard or are at risk of contacting the lines themselves. Hazard trees are typically removed immediately upon identification.

More frequent vegetation management may be required within the first 3 to 4 years following construction in order to bring the vegetation under control. After this initial management period, maintenance practices are typically carried out on a 4- or 5-year cycle depending on growth, weather, geographic location, and corridor width. Maintenance may be required less frequently in the long-term as vegetation within the corridor becomes dominated by shrub and herbaceous species. Large branches that overhang the ROW and any hazard trees outside of the ROW that could contact the electrical lines or come within 15 feet of a conductor may be removed as soon as they are identified.

The following procedures will be implemented during vegetation maintenance activities to provide protection of sensitive natural resources:

- Protected resources and their associated buffers will be flagged or located with a Global Positioning System (GPS) prior to maintenance operations;
- Hand-cutting or reach-in techniques will be the preferred method of vegetation maintenance within buffers and sensitive areas, where reasonable and practical;
- Equipment access through wetlands or over streams will be avoided as much as practicable by utilizing existing public or private access roads, with landowner approval where required;
- Equipment access in upland areas with saturated soils will be minimized to the extent practicable to avoid rutting or other ground disturbance;
- Significant damage to wetland or stream bank vegetation, if any, will be repaired following completion of maintenance activities in the area; and
- Areas of significant soil disturbance will be stabilized and reseeded following completion of maintenance activity in the area.

In areas where the collector line is co-located with project roads, routine maintenance and road repairs will be permitted even if located within designated buffers.

2.2 VEGETATION MAINTENANCE METHODS

2.2.1 Mechanical Methods

During routine vegetation maintenance after construction, mechanical methods of maintaining the height of vegetation on the ROW will consist primarily of cutting with hand tools, with occasional use of chainsaws and limited use of motorized equipment in areas directly accessible from public or private access roads.

Maintenance procedures will be to cut all capable species and any dead or hazard trees at ground level except in designated buffer zones, as described below. Large vegetation cut during routine maintenance will be handled in accordance with the Maine Slash Law.

2.2.2 Herbicide Application

Herbicide application will be used in conjunction with the mechanical methods of vegetation maintenance. The Applicant's herbicide application program is consistent with most New England utilities and consists of either directly spraying targeted species along the ROW with a low-volume foliar application or applying herbicides to cut stumps and surfaces of larger trees. Direct application to individual plant species, as opposed to a broadcast spray, will control only the targeted woody vegetation, leaving low-growing plant communities (the desired shrub and herbaceous species) alive. Selective herbicides will also be used to minimize the impacts to non-target species. Aerial application will not be used. Only herbicides which are registered with and approved by the U.S. Environmental Protection Agency (EPA-approved) and registered with the Maine Board of Pesticides Control (BPC) will be used.

Herbicide applications will be initiated 1–3 years after initial clearing to gain control of vegetation growth. When control is achieved, treatment will typically occur on a 4–5-year cycle or as needed. By using selective herbicides and a variety of application methods, vegetation along the ROWs will eventually consist of a dense, low-growing plant community that will discourage the establishment of tree species. Therefore, fewer woody species will require treatment in future applications.

The following procedures will be implemented during herbicide applications.

- Herbicides will be used in strict accordance with the manufacturer's EPA-approved labeling and will not be applied directly to water bodies or areas where surface water is present.
- Herbicides will not be applied within the designated buffers or within 25 feet of rivers, streams, brooks, lakes, ponds, or wetlands that have water present at the surface at the time of the application.
- Herbicides will not be stored, mixed, or loaded within 100 feet of any wetland or surface water, unless done on a public access road.
- Herbicides will not be applied, mixed, transferred or stored within 100 feet of Significant Vernal Pool depressions.
- Herbicides will not be mixed, transferred or stored over significant sand and gravel aquifers.
- Herbicides will not be applied, mixed, transferred or stored within 100 feet of any known private well or spring, or within 200 feet of any known public water supply well.
- When herbicide applications are performed in wetlands without standing water, herbicides approved for use in wetland environments will be used.
- Herbicides will not be applied to any area when it is raining or when wind speed exceeds 15 miles per hour as measured on-site at the time of application. When wind speeds are

below 3 miles per hour, applicators should be aware whether conditions of a temperature inversion are present and should consult the herbicide label to determine if avoiding application is necessary.

- The foreman of each herbicide application crew will be licensed by the Maine BPC and will remain in eye contact and within earshot of all persons on his/her crew applying herbicides. At least one individual from any company applying herbicides for the Applicant must also hold a Commercial Master License issued by the BPC. This Master applicator must have the ability to be on-site to assist persons applying herbicides within six hours driving time. If an out-of-state company is conducting the herbicide application, the company must have a Master applicator in Maine during any application. Application of herbicides will be in accordance with applicable regulations promulgated under the Maine Pesticides Control Act, including those regulations to minimize drift, to maintain setbacks from sensitive areas during application, and to maintain setbacks from surface waters during the storing/mixing/loading of herbicides.
- Herbicides will typically be mixed in a truck-mounted tank that stays on public access roads. The application is done by personnel with low-pressure, hand-pressurized (manual) backpacks with appropriate nozzles to minimize drift who travel along the ROW by foot or by all-terrain vehicle and spot-treat target species.

The location of all streams, wetlands and significant groundwater aquifers crossed by the collector and generator lead lines will be shown on the As-Built Plan and Profile drawings. GIS shapefiles will also be maintained with the location of these resources and will be provided to maintenance personnel. The presence of surface water will be determined prior to herbicide use in any wetland. Tables identifying the locations of other resources where herbicide application is prohibited are provided in the following sections. Crew leaders will assure that resources and buffers are clearly marked in the field or that locations of resources and buffers are provided as GIS/GPS data prior to initiation of an herbicide application for clear identification by the applicators.

3.0 VEGETATION MAINTENANCE WITHIN FRESHWATER WETLANDS

Wetlands were identified along the collector and generator lead lines throughout the Project area. Wetlands range in type from small, emergent wetlands formed in ruts from logging equipment to large forested wetland systems. No specific buffers are proposed for the wetlands identified within the Project area. Vegetation maintenance within freshwater wetlands will primarily be conducted by hand cutting with hand tools or chainsaws. Herbicide use is permitted in wetlands only when no standing water is present in the wetland at the time of the application. No herbicides will be stored, mixed, or transferred between containers within wetlands, and no refueling of chain saws or other equipment will be allowed.

4.0 VEGETATION MAINTENANCE WITHIN STREAM BUFFERS

A 25-foot buffer, as measured from the top of each bank, will be established for vegetation maintenance along streams within the Project ROWs. Additional restrictions will be applied within 100 feet of streams. Special restrictions will apply within these stream buffers during vegetation maintenance. This section describes the restrictions related to vegetation cutting and maintenance that will apply within the stream buffers. Table 1 in Appendix A includes the names, locations, and details of the streams crossed by the collector line and generator lead lines. The location of the streams crossed by the lines will be shown on the As-Built Plan and Profile drawings. Vegetation maintenance procedures and restrictions that apply to typical ROW maintenance (Section 2.0) also apply within the stream buffers.

4.1 ADDITIONAL VEGETATION MAINTENANCE RESTRICTIONS WITHIN STREAM BUFFERS

The following additional restrictions apply to vegetation maintenance within stream buffers.

- Only capable species greater than 8-10 feet tall will be removed, in accordance with Maine Slash Law. No other vegetation, other than dead or hazard trees, will be removed.
- Removal of capable species, dead or hazard trees within the 25-foot buffer will be accomplished by hand-cutting or reach-in techniques only. Use of mechanized harvesting equipment is prohibited.
- Herbicides will not be applied within the 25-foot stream buffer.
- Herbicides will not be stored, mixed or transferred between containers within 100 feet of streams, unless done so on a public access road.
- No refueling or maintenance of equipment, including chain saws, will occur within 100 feet of streams, unless done so on a public access road.
- No accumulation of slash will be left within 50 feet of the edge of any stream.

These additional restrictions will allow for taller vegetation within the 25-foot stream buffer to provide additional shading and reduce the warming effect of direct sunlight (insolation). Low ground cover vegetation will also remain to filter sediment in surface runoff. The restrictions are also intended to minimize ground disturbance and reduce surface or groundwater transport of herbicides and petroleum products within 100 feet of streams. These restrictions will allow the stream buffers to function in a similar manner as they did prior to construction.

5.0 VEGETATION MAINTENANCE WITHIN ATLANTIC SALMON STREAM BUFFERS

In 2009, the US Fish and Wildlife Service (USFWS) designated Critical Habitat for the freshwater geographic range occupied by the Gulf of Maine Distinct Population Segment of Atlantic salmon, including all perennial streams, rivers, and lake habitats connected to the marine environment (50 CFR 226: Federal Register, June 19, 2009). A portion of the Bridal Path Generator Lead Line, approximately 15.5 miles in Linneus, TA R2 WELS, Forkstown Twp, and Haynesville, is located within the designated critical habitat (HUC 10 0102000302 East Branch Mattawamkeag River and HUC 10 0102000301 West Branch Mattawamkeag River). The perennial streams located within this section of the generator lead line are considered critical habitat for Atlantic salmon. Table 2 in Appendix A includes the names, locations, and details of the Atlantic salmon streams crossed by the Bridal Path Generator Lead Line.

A 100-foot buffer, as measured from the top of each bank, will be established for vegetation maintenance along perennial streams within the designated critical habitat. These streams will be subject to additional maintenance restrictions to enhance shading of the stream to the maximum extent allowed by the ISO-NE Vegetation Maintenance Standard. Vegetation maintenance within the Atlantic salmon stream buffers will be subject to the same procedures and prohibitions, as applicable, that are required in the typical ROW and for stream buffers.

5.1 ADDITIONAL VEGETATION MAINTENANCE RESTRICTIONS WITHIN ATLANTIC SALMON HABITAT STREAM BUFFERS

The following additional restrictions apply to vegetation maintenance within Atlantic salmon stream buffers:

- Only capable species greater than 8-10 feet tall will be removed, in accordance with Maine Slash Law. No other vegetation other than dead or hazard trees will be removed;
- No herbicide use is permitted within the 100-foot Atlantic salmon stream buffer; and
- Crossing of Atlantic salmon streams with maintenance equipment will be avoided.

6.0 VEGETATION MAINTENANCE WITHIN SIGNIFICANT VERNAL POOL BUFFERS

Vernal pool surveys were conducted within the Project area during the spring of 2014. Twenty-three SVPs were identified either within the Project ROWs or had critical terrestrial habitat that overlapped with the ROWs: 14 on the collector line, 6 on the North Line, and 4 on the Bridal Path Line. Table 3 in Appendix A includes the names, locations, and details of the SVPs crossed by the collector line and generator lead lines. SVP locations will be shown on the As-Built Plan and Profile drawings. Complete survey results can be found in Section 7, Exhibit 7C of Maine Department of Environmental Protection (MDEP) Natural Resource Protection Act (NRPA)/Site Location of Development combined application.

A 100-foot vegetated buffer, as measured from the edge of the pool depression, will be established for the SVPs crossed by the collector and generator lead line ROWs. Vegetation maintenance within the SVP buffers will be subject to the same procedures and prohibitions, as applicable, that are required in the typical ROW.

6.1 ADDITIONAL VEGETATION MAINTENANCE RESTRICTIONS WITHIN SIGNIFICANT VERNAL POOL BUFFERS

The following additional restrictions apply to vegetation maintenance within SVP buffers:

- Only capable species greater than 8-10 feet tall will be removed, in accordance with Maine Slash Law. Removal will be by hand-cutting or reach-in techniques only, with limited use of motorized equipment in areas that are directly accessible from public or private access roads or from the access ways established during initial clearing.
- The use of mechanized equipment will not be allowed within the vernal pool depression.
- Between April 1 and June 30, no vegetation maintenance using tracked or wheeled equipment will be performed within the 100-foot buffer. Maintenance will be performed using hand tools only.
- Between April 1 and June 30, no vegetation maintenance will occur within 25 feet of any vernal pool depression.
- No herbicide use is permitted within the 100 SVP buffer.

7.0 VEGETATION MAINTENANCE WITHIN INLAND WATERFOWL AND WADING BIRD HABITAT

Inland Waterfowl and Wading Bird Habitats (IWWH) are habitats mapped by the Maine Department of Inland Fisheries and Wildlife (MDIFW) that contain an inland wetland complex used by waterfowl and wading birds, plus a 250-foot upland buffer surrounding the wetland. The upland buffer is considered to be part of the mapped habitat. No additional buffer is proposed for the Project, and the vegetation maintenance restrictions apply to the mapped habitat only. The proposed collector line ROW crosses mapped IWWH at 3 locations in the turbine area and the proposed generator lead line crosses mapped IWWH at 3 locations. The generator lead line crossings are located along the Bridal Path Generator Lead Line, with 2 in TAR2 WELS and 1 in Forkstown Twp. IWWH areas are shown on the Natural Resource Maps provided in Section 7, Exhibit 7B, and on the final design plans. Vegetation maintenance within the IWWH buffers will be subject to the same procedures and prohibitions, as applicable, that are required in the typical ROW and for stream buffers.

7.1 ADDITIONAL VEGETATION MAINTENANCE RESTRICTIONS WITHIN INLAND WATERFOWL AND WADING BIRD HABITAT

The following additional restrictions apply to vegetation maintenance within mapped IWWH:

- Only capable species greater than 8-10 feet tall will be removed, in accordance with Maine Slash Law. No other vegetation other than dead or hazard trees will be removed;
- Between April 15 and July 15, use of motorized vehicles (e.g., all-terrain vehicles) and mechanized equipment (e.g., chain saws or brush cutters) within IWWH is prohibited. Use of non-mechanized hand tools is allowed during this time period; and
- No herbicide use is permitted within 25 feet of any wetland within the mapped IWWH.

8.0 VEGETATION MAINTENANCE WITHIN MAPPED DEER WINTERING AREAS

Deer Wintering Areas (DWA) provide important refuge for white-tailed deer (*Odocoileus virginianus*) during the winter months in northern climates and are typically characterized by an extensive forest stand of mature softwood species with a dense forest canopy. The generator lead crosses 2 DWAs mapped by MDIFW in Haynesville (#100068 and #100075). During the winter of 2014, surveys of the two mapped DWAs in Haynesville were performed to assess use and habitat characteristics (see Section 7, Exhibit 7C-4). The surveys indicated that the two DWAs in Haynesville may be providing suitable DWA cover. In these two DWAs, the proposed generator lead corridor has the potential to remove contiguous softwood shelter and/or

fragment existing or potential travel corridors through the DWAs. Therefore, the Applicant has proposed the vegetation maintenance procedures described below to minimize the impacts of the ROW.

8.1 ADDITIONAL VEGETATION MAINTENANCE RESTRICTIONS WITHIN DEER WINTERING AREAS

The following additional restrictions will apply to vegetation maintenance within the mapped DWAs that are providing suitable wintering habitat:

- Only capable species greater than 8-10 feet tall will be removed, in accordance with Maine Slash Law. No other vegetation other than dead or hazard trees will be removed;
- Vegetation within the DWA will be "feathered" ("V-style clearing") on each side of the ROW, so that taller vegetation is retained at the corridor edges and shorter vegetation is retained in the middle of the corridor (Figure 1). This method results in a narrower crossing corridor for deer and other wildlife in these areas.

9.0 VEGETATION MAINTENANCE WITHIN RARE PLANT LOCATIONS

Rare plants were found in 15 locations along the proposed generator lead lines, as identified by Stantec during wetland delineations and rare plant surveys in 2014 and 2015. The rare plant species identified include:

- Showy lady's-slipper (*Cypripedium reginae*): State-Threatened[4, 5] (2 locations along Bridal Path Generator Lead Line; 1 location along North Generator Lead Line);
- Swamp honeysuckle (*Lonicera oblongifolia*): State-Special Concern (3 locations along Bridal Path Generator Lead Line);
- Lesser yellow water crowfoot (*Ranunculus gmelinii*): State-Threatened[6] (2 locations along Bridal Path Generator Lead Line; 1 location along North Generator Lead Line);
- Marsh valerian (*Valeriana uliginosa*): State-Special Concern (1 location along Bridal Path Generator Lead Line and 1 location along North Generator Lead Line);
- Northern bog sedge (*Carex gynocrates*): State-Special Concern (2 locations along Bridal Path Generator Lead Line)

[4] State rarity status is based on the Maine Natural Areas Program Rare, Threatened, and Endangered Plant Taxa list, as updated November 2012.
[5] This listing of this species is presently proposed by the Maine Natural Areas Program to change from Threatened to Special Concern.
[6] This listing of this species is presently proposed by the Maine Natural Areas Program to change from Threatened to Special Concern.

- Goldie's fern (*Dryopteris goldiana*): State-Special Concern (1 location along North Generator Lead Line); and
- Male fern (*Dryopteris filix-mas*): State-Endangered (1 location adjacent to the North Generator Lead Line).

In the areas surrounding these rare plant locations, vegetation maintenance of the proposed generator lead line ROWs has the potential to impact the plants and/or alter their habitat. The Applicant has identified additional vegetative maintenance restrictions that will minimize impacts to the rare plants. These additional restrictions will apply only to the demarcated location of identified rare plants. No additional buffer will be established surrounding the rare plant locations. These restrictions are intended to maintain the hydrology and limit soil disturbance within these rare plant locations.

9.1 ADDITIONAL VEGETATION MAINTENANCE RESTRICTIONS WITHIN RARE PLANT LOCATIONS

The following additional restrictions will apply to vegetation maintenance for the species listed above in the identified locations:

- Within the demarcated habitat, cut at ground level all capable species that are 8 – 10 feet high or taller and those species that will exceed 10 feet in height before the next vegetation management cycle. No other vegetation other than dead or hazard trees will be cut within the demarcated habitat.
- All species will be cut by hand (chainsaws, hand saws or axes) or reach-in techniques. No mechanized cutting equipment shall be used within the habitat.
- No all-terrain vehicles or other vehicles are allowed within the demarcated rare plant locations.
- No herbicide use is permitted within the demarcated rare plant locations.

10.0 VEGETATION MAINTENANCE WITHIN HISTORIC SITES

One historic site was identified along the proposed North Generator Lead Line. The historic site, the Frisbie Homestead, is a cellar hole marking a homestead location. The site is located between B Road and B Stream in Houlton. In the area surrounding this historic site, vegetation maintenance of the proposed generator lead line has the potential to impact the site. The Applicant has identified additional vegetative maintenance restrictions that will minimize impacts to the site. These additional restrictions will apply to the location of the historic site, plus a 33-foot (10 meter) buffer around the historic structure. These restrictions are intended to avoid ground disturbance within the buffer.

10.1 ADDITIONAL VEGETATION MAINTENANCE RESTRICTIONS WITHIN HISTORIC SITES

The following additional restrictions will apply to vegetation maintenance within the designated buffer for the historic site:

- No mechanized equipment is permitted within the demarcated buffer.
- All vegetation cut within the buffer will be cut by hand or by using reach-in techniques.
- Cut vegetation will be removed from the buffer by lifting out of the buffer. No cut vegetation will be dragged out of the buffer.
- No placement of debris, brush or other material is permitted within the buffer, and no accumulation of slash will be left within the buffer.

11.0 MAINTENANCE PROCEDURES FOR SIGNIFICANT SAND AND GRAVEL AQUIFER

The proposed collector and generator lead lines cross mapped significant sand and gravel aquifers in 10 locations. The collector line crosses aquifer #1563 in 3 locations in T9 R3 WELS and TD R2 WELS. The mapped aquifers on the generator leads lines are #226 in Hammond Twp along B Stream, #1639 and #374 in Houlton east of McSheffrey Road, #425 and in Houlton along B Stream, #994 in Houlton near U.S. Route 2, #1735 in Linneus along Bither Brook, and #2236 in Forkstown Twp along East Branch Mattawamkeag River. These sections will be subject to the typical ROW maintenance procedures, except no herbicides may be mixed, transferred or stored over the significant sand and gravel aquifers. The locations of the sand and gravel aquifers will be shown on the As-Built Plan and Profile drawings.

12.0 MAINTENANCE PROCEDURES FOR OSPREY NESTS

Osprey often nest on the top of power line structures. Nests are typically allowed to remain in place unless there is a chance they are going to come into contact with the conductor. Osprey typically use and build up the same nest annually. The nests often get large enough to touch a conductor or get close enough to create an arc. If there is a risk of conductor contact or arcing, the Applicant will employ the following guidelines for removing nests. Active nests may only be removed with a Depredation Permit from USFWS. No permits are generally required for removal of inactive osprey nests.

The following guidelines will be completed for removal of an osprey nest that is built on the collector or generator lead line structures:

- Nests will only be taken down between September 1 and March 15, and only if birds are not actively using the nest, unless the nest poses an imminent safety concern. Nests that contain eggs or chicks will not be disturbed, unless necessary to retain the safe and reliable operation of the line;
- Nests will be relocated to nesting platforms or trees, when possible, otherwise they will be destroyed when they are removed;
- The Applicant will keep record of the date, number of nests moved or destroyed, and the town where the nest(s) are/were located. The list of nests removed will be distributed to the line operations team periodically.

13.0 LOCATING AND MARKING BUFFERS AND HABITATS

The Applicant will maintain a database, including maps and GIS shapefiles, of the buffers, restricted habitats, and sensitive areas and their locations relative to the nearest structure (pole) or road location. The distance and direction from the nearest structure to the sensitive area will be included beside the name of the area and the structure number. All structures along the ROWs will be numbered at the time of construction. The structure numbers will be included on the As-Built Plan and Profile drawings.

To aid in identifying restricted areas, buffers and restricted habitats may be located and demarcated in the field using brightly colored flagging or signage prior to the initiation of maintenance activities along the ROWs. Alternatively, use of GIS data and GPS equipment may be suitable to provide accurate location of resources and associated buffers during maintenance activities. If desired, maintenance personnel may permanently demarcate restricted habitats to aid in long-term maintenance activities. Maintenance contractors working on the ROWs will be given this VMP prior to receiving the required environmental training. Use of the VMP in conjunction with the As-Built Plan and Profile drawings will enable maintenance contractors to locate and mark restricted areas in the field.

14.0 MAINTENANCE PERSONNEL TRAINING

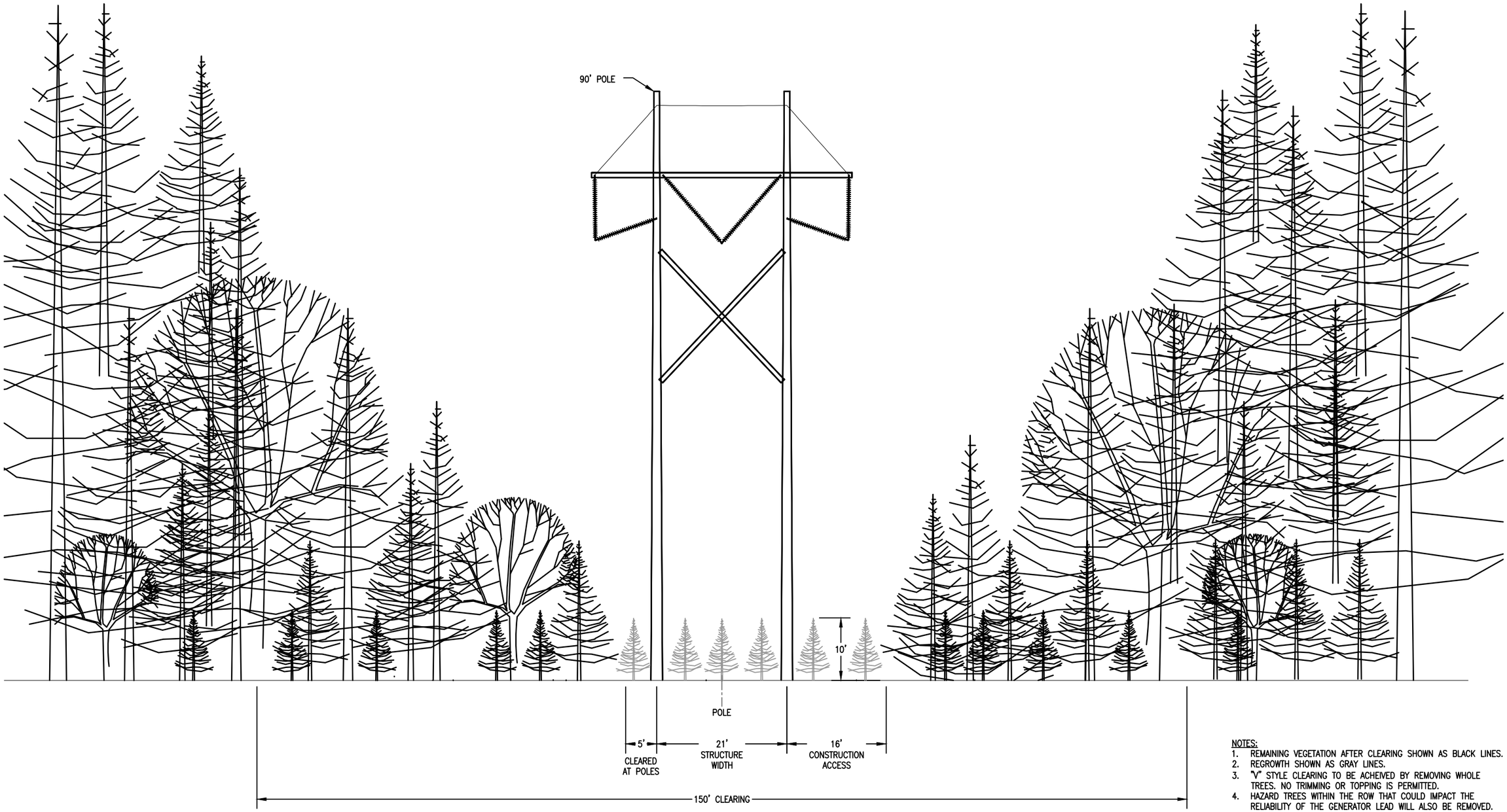
Personnel who will be participating in vegetation maintenance activities on the ROWs will receive appropriate environmental training before being allowed access to the ROW. Maintenance personnel will be required to review this VMP prior to the training and before conducting any maintenance activities. The level of training will be dependent on the duties of the personnel. The training will be given prior to the start of maintenance activities. Replacement or new maintenance personnel that did not receive the initial training will receive similar training prior to performing any maintenance activities on the ROWs.

The training session will consist of a review of the buffers and restricted habitats, the respective maintenance requirements and restrictions for each, and a review of how these areas and resources can be located in the field. Training will include familiarization with and use of GIS

information and the As-Built Plan and Profile drawings in conjunction with the contents of this VMP, as well as basic causes and preventive and remedial measures for contamination, erosion and sedimentation of water resources. Training will also include a review of safety, proper use of appropriate maintenance tools, clean-up, monitoring, and reporting requirements.

FIGURES

Figure 1. Deer Wintering Area "V-Style" Clearing



NOTES:
1. REMAINING VEGETATION AFTER CLEARING SHOWN AS BLACK LINES.
2. REGROWTH SHOWN AS GRAY LINES.
3. "V" STYLE CLEARING TO BE ACHEIVED BY REMOVING WHOLE TREES. NO TRIMMING OR TOPPING IS PERMITTED.
4. HAZARD TREES WITHIN THE ROW THAT COULD IMPACT THE RELIABILITY OF THE GENERATOR LEAD WILL ALSO BE REMOVED.

SGC Engineering, LLC
a part of Senergy

edp renewables

ISSUED FOR PERMIT

DATE:	SCALE:	DRAWN:	DESIGN:	APPD:
MARCH 9, 2015	N.T.S.	SJF	DLH	TMH

NO.	REVISION	APPD:	DATE:
A	ISSUED FOR PERMIT	TMH	3/17/2015

TITLE:
V STYLE CLEARING EXHIBIT
DEER WINTERING AREAS

PROJECT:
NUMBER NINE WIND FARM
AROOSTOOK COUNTY, MAINE

CLIENT:
NUMBER NINE WIND FARM LLC
c/o EDPR, NA LLC, 808 TRAVIS, SUITE 700, HOUSTON, TEXAS 77002

SGC PROJECT NUMBER
1233000

EXHIBIT NUMBER
1233-13-1002

REVISION
A

SHEET NUMBER
1 OF 1

Appendix A TABLES

Table 1. Streams Within the Collector Line or Generator Lead Line ROWs for the Number Nine Wind Farm.

Resource ID	Associated Wetland (ID)	Flow Regime	Blue line on USGS	Top of Bank Width (ft)
Collector Line				
ETWP_S002	ETWP_W004	Intermittent/ Perennial	NA	6
ETWP_S016	ETWP_W141	Perennial	NA	6-7
ETWP_S017	ETWP_W142	Perennial	NA	6-7
T10R3_S009	T10R3_W099	Perennial	West Branch Presque Isle Stream	35
T10R3_S010	T10R3_W126	Intermittent	NA	4
T8R3_S003	T8R3_W028	Intermittent	NA	3
T8R3_S007	T8R3_W118	Intermittent/ Perennial	NA	1
T8R3_S009	T8R3_W113	Perennial	Hovey Brook	2
T8R3_S010	No associated wetland	Intermittent	NA	5
T8R3_S018	T8R3_W097	Intermittent	NA	3
T8R3_S019	T8R3_W095	Intermittent	NA	1
T8R3_S025	T8R3_W120	Perennial	South Brook	2
T8R3_S026	T8R3_W141	Perennial	East Branch Howe Brook	8
T8R3_S034	T8R3_W145	Intermittent	NA	6
T8R3_S036	T8R3_W216	Intermittent	NA	4-6
T8R3_S037	T8R3_W220	Perennial	NA	6-7
T8R3_S039	T8R3_W222	Perennial	East Branch Howe Brook	12-15
T8R3_S040	T8R3_W246	Perennial	Unnamed	8-10
T8R3_S050	T8R3_W353	Perennial	Long Brook	8
T8R3_S051	T8R3_W353	Perennial	Long Brook	6
T8R3_S052	T8R3_W650	Intermittent	NA	4
T8R3_S057	T8R3_W371	Perennial	NA	5
T8R3_S066	No associated wetland	Intermittent	NA	3
T8R3_S067	T8R3_W561	Intermittent	NA	2
T8R3_S068	T8R3_W515	Intermittent	NA	3
T8R3_S069	No associated wetland	Perennial	South Brook	2
T8R3_S070	T8R3_W522	Intermittent	NA	3

Resource ID	Associated Wetland (ID)	Flow Regime	Blue line on USGS	Top of Bank Width (ft)
T9R3_S001	T9R3_W075	Perennial	East Branch Presque Isle Stream	20
T9R3_S002	T9R3_W014	Perennial	NA	3-4
T9R3_S003	T9R3_W018	Intermittent	NA	3
T9R3_S007	T9R3_W065	Perennial	NA	6-7
T9R3_S008	T9R3_W068	Perennial	unnamed	6-12
T9R3_S010	T9R3_W073	Perennial	unnamed	9-10
T9R3_S011	T9R3_W082	Perennial	Number Nine Stream	8-40
T9R3_S016	T9R3_W091	Perennial	unnamed	4-50
T9R3_S048	T9R3_W231	Intermittent	NA	2-6
T9R3_S050	T9R3_W278	Intermittent	unnamed	2
T9R3_S051	T9R3_W283	Intermittent	NA	2
T9R3_S055	T9R3_W319	Intermittent	unnamed	4
TDR2_S008	TDR2_W025	Intermittent	NA	5
TDR2_S009	TDR2_W027	Intermittent	NA	5
TDR2_S010	TDR2_W029	Intermittent	NA	3
TDR2_S012	TDR2_W033	Intermittent	NA	3
TDR2_S013	TDR2_W037	Perennial	unnamed	5-8
TDR2_S014	No associated wetland	Intermittent/ Perennial	unnamed	7-10
TDR2_S015	TDR2_W043	Intermittent/ Perennial	NA	5
TDR2_S016	TDR2_W044	Perennial	Number Nine Stream	40
TDR2_S031	No associated wetland	Perennial	unnamed	3-12
TDR2_S043	TDR2_W215	Intermittent	NA	4-6
TDR2_S045	No associated wetland	Intermittent	NA	3-4
TDR2_S046	TDR2_W118	Perennial	East Branch Presque Isle Stream	5-6
TDR2_S056	TDR2_W207	Perennial	unnamed	30
TDR2_S057	TDR2_W219	Intermittent	NA	1-5
TDR2_S115	TDR2_W118	Perennial	NA	
North Generator Lead Line				
HAMM_S001	HAMM_W008	Perennial	Howard Brook	20
HAMM_S002	HAMM_W008	Perennial	Howard Brook	8-12
HAMM_S005	HAMM_W031	Perennial	Fork Brook	16
HAMM_S008	No associated wetland	Perennial	NA	8

Resource ID	Associated Wetland (ID)	Flow Regime	Blue line on USGS	Top of Bank Width (ft)
HAMM_S009	HAMM_W041	Ephemeral/ Intermittent	NA	3
HAMM_S010	No associated wetland	Perennial	Mansur Brook	15
HAMM_S012	HAMM_W053	Perennial	unnamed	12
HAMM_S013	HAMM_W055	Perennial	Webster Brook	12
HAMM_S014	HAMM_W061	Intermittent/ Perennial	NA	1-3
HAMM_S016	HAMM_W062	Perennial	NA	5
HAMM_S017	HAMM_W066	Perennial	unnamed	10
HAMM_S018	HAMM_W068	Perennial	NA	15
HAMM_S019	HAMM_W095	Perennial	B Stream	45
HAMM_S020	HAMM_W099	Perennial	B Stream	50
HAMM_S023	HAMM_W106	Intermittent	NA	8
HAMM_S024	HAMM_W037	Intermittent	NA	8
HAMM_S025	No associated wetland	Intermittent	NA	6-8
HAMM_S026	No associated wetland	Intermittent	NA	5-7
HAMM_S028	HAMM_W043	Intermittent	NA	5-7
HAMM_S030	HAMM_W124	Perennial	NA	4-6
HAMM_S031	HAMM_W124	Perennial	unnamed	4-6
HAMM_S032	HAMM_W107	Intermittent	NA	5
HOUL_S002	HOUL_W031	Perennial	B stream	70
HOUL_S003	HOUL_W026	Perennial	unnamed	15-30
HOUL_S007	HOUL_W018	Perennial	unnamed	3
HOUL_S008	HOUL_W018	Perennial	unnamed	3
HOUL_S009	HOUL_W021	Perennial	NA	3
LITT_S001	LITT_W003	Intermittent	unnamed	3-4
LITT_S002	LITT_W003	Intermittent	unnamed	3-4
LITT_S003	LITT_W003	Ephemeral / Intermittent	unnamed	5
LITT_S004	LITT_W005	Perennial	unnamed	8
LITT_S005	LITT_W005	Perennial	unnamed	8-15
LITT_S006	HOUL_W028	Intermittent/ Perennial	unnamed	4-8
LITT_S007	LITT_W012	Perennial	unnamed	3-20
T8R3_S078	T8R3_W554	Perennial	South Brook	40-75
T8R3_S081	T8R3_W572	Perennial	NA	2-5

Resource ID	Associated Wetland (ID)	Flow Regime	Blue line on USGS	Top of Bank Width (ft)
T8R3_S082	T8R3_W572	Perennial	NA	2-5
T8R3_S083	T8R3_W572	Perennial	unnamed	10-15
T8R3_S084	T8R3_W572	Perennial	NA	4-5
T8R3_S085	T8R3_W572	Perennial	NA	3-4
T8R3_S086	T8R3_W573	Perennial	North Branch Meduxnekeag River	12-15
T8R3_S087	No associated wetland	Intermittent	NA	2
T8R3_S090	T8R3_W587	Perennial	unnamed	4-15
T8R3_S091	T8R3_W590	Intermittent	NA	3-5
T8R3_S092	T8R3_W592	Perennial	NA	2-3
T8R3_S093	T8R3_W593	Perennial	NA	2-7
T8R3_S094	T8R3_W594	Perennial	NA	5-8
T8R3_S095	T8R3_W594	Perennial	NA	3-5
T8R3_S096	T8R3_W597	Perennial	NA	5-6
T8R3_S097	T8R3_W599	Perennial	NA	3-6
T8R3_S098	T8R3_W603	Intermittent	NA	5-7
T9R3_S063	T9R3_W331	Intermittent	NA	4
T9R3_S064	T9R3_W332	Intermittent	NA	3-6
T9R3_S065	T9R3_W336	Intermittent	NA	3-8
T9R3_S066	T9R3_W339	Intermittent	NA	3-4
T9R3_S067	T9R3_W340	Intermittent	NA	2-3
TCR2_S012	TCR2_W135	Intermittent/ Perennial	NA	2-30
TCR2_S013	TCR2_W135	Intermittent	NA	6-10
TCR2_S014	TCR2_W135	Intermittent	NA	5-8
TCR2_S015	TCR2_W137	Perennial	Bear Brook	17
TCR2_S016	TCR2_W138	Perennial	NA	8-10
TCR2_S017	TCR2_W138	Intermittent	NA	7
Bridal Path Generator Lead Line				
HODG_S001	HODG_W002	Perennial	unnamed	15
HOUL_S001	HOUL_W013	Perennial	Meduxnekeag River	80
HOUL_S006	HOUL_W002	Perennial	NA	8
LINN_S001	LINN_W002	Perennial	unnamed	2
LINN_S002	LINN_W007	Perennial	unnamed	3-7
LINN_S004	LINN_W008	Perennial	unnamed	7
LINN_S005	LINN_W017	Perennial	NA	4

Table 2. Atlantic Salmon Streams Within the Bridal Path Generator Lead Line ROW for the Number Nine Wind Farm.

Resource ID	Associated Wetland (ID)	Flow Regime	Blue line on USGS	Channel Width (feet)
Bridal Path Generator Lead Line				
LINN_S006	LINN_W033	Perennial	N/A	6
TAR2_S001	TAR2_W001	Perennial	Yellow Brook	5
TAR2_S002	TAR2_W001	Perennial	N/A	9
TAR2_S003	TAR2_W005	Perennial	Tenmile Brook	40
FORK_S001	FORK_W007	Perennial	Unnamed	10
FORK_S002	FORK_W030	Perennial	East Branch Mattawamkeag River	100
HAYN_S002	HAYN_W014	Perennial	N/A	3
HAYN_S001	No associated wetland	Perennial	West Branch Mattawamkeag River	80
HAYN_S003	HAYN_W027	Perennial	Unnamed	10

Table 3. Significant Vernal Pools Within the Collector Line or Generator Lead Line ROWs for the Number Nine Wind Farm.

Pool ID	Associated Wetland ID	Pool Type	Pool Origin
Collector Line			
SVP_01HS_N	No associated wetland (no delineation)	SVP	Natural
SVP_04HS_N	No associated wetland (no delineation)	SVP	Natural
SVP_71JL_N	No associated wetland (no delineation)	SVP	Natural
SVP_92RK_N	No associated wetland (no delineation)	SVP	Natural
SVP_95RK_N	T9R3_W061	SVP	Natural
SVP_A08VP25_N	T8R3_W520	SVP	Natural
SVP_A08VP26_N	T8R3_W512	SVP	Natural
SVP_A10VP16_N	No associated wetland (no delineation)	SVP	Natural
SVP_A10VP17_N	T8R3_W113	SVP	Natural
SVP_D08VP20_M	T9R3_W056	SVP	Natural
SVP_D08VP26_N	TDR2_W124	SVP	Natural
SVP_D08VP48_N	TDR2_W127	SVP	Natural
SVP_E10VP02_N	T8R3_W127	SVP	Natural
SVP_E10VP05_N	T8R3_W126	SVP	Natural
North Generator Lead Line			
SVP_01BE_N	T8R3_W608	SVP	Natural
SVP_02BE_N	T8R3_W558	SVP	Natural
SVP_156RK_N	T8R3_W720	SVP	Natural
SVP_157RK_N	T8R3_W729	SVP	Natural
SVP_201TT_N	T8R3_W568	SVP	Natural
SVP_A08VP10_N	No associated wetland (no delineation)	SVP	Natural
Bridal Path Generator Lead Line			
SVP_16TT_N	LINN_W029	SVP	Natural
SVP_17TT_N	LINN_W016	SVP	Natural
SVP_25TT_N	LINN_W002	SVP	Natural
SVP_29TT_N	HOUL_W010	SVP	Natural

Exhibit 10-B. INVASIVE SPECIES MANAGEMENT PLAN

Invasive Species Management Plan

Number Nine Wind Farm
Aroostook County, Maine

Prepared for:
Number Nine Wind Farm LLC

Prepared by:
Stantec Consulting Services Inc.

April 2015

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April 2015

1.0 INTRODUCTION

Number Nine Wind Farm LLC (the Applicant) has proposed construction of the Number Nine Wind Farm (Project), a grid-scale wind energy facility in Aroostook County, Maine. The proposed Project will include up to 119 turbines; associated 34.5-kilovolt (kV) electrical collector lines (collector line) and access roads, a project substation, and an Operations and Maintenance (O&M) building in the turbine area; and two segments of a 345-kV electrical generator lead line (generator lead). The Project is primarily located in undeveloped land currently used for commercial forestry operations, with a broad network of dirt and gravel logging roads. The Project will utilize existing roads to provide access for much of the Project. The electrical collector line in the turbine area will be largely co-located with existing and proposed Project roads, the northern portion of the generator lead line (North Generator Lead Line) will consist primarily of newly cleared right-of-way (ROW), and the southern portion of the generator lead line (Bridal Path Generator Lead Line) will be located within an existing utility easement that was first cleared in the 1960's.

Vegetation clearing will be required for construction of the Project and natural communities will be permanently converted from forested communities to communities dominated by shrubs and herbaceous vegetation. Because of this disturbance, the Project area could be subject to colonization by invasive species as a result of construction activities and a decrease in native forest canopy.

This Invasive Species Management Plan (ISMP) addresses the anticipated procedures for managing invasive plant species and enhancing the value of wetlands and uplands located within the collector line and generator lead line ROWs (the Project Area). This ISMP is designed to supplement the existing ROW Vegetation Management Plan (VMP) as detailed in Section 10, Exhibit 10A, of the combined Maine Department of Environmental Protection (MDEP) Site Location of Development Act/Natural Resources Protection Act permit application for the Project. The Applicant has prepared this ISMP to be a stand-alone document containing the known locations and recommended protocols for monitoring and managing invasive species for the Project.

2.0 INVASIVE SPECIES MANAGEMENT PLAN GOALS AND OBJECTIVES

As part of the Maine General Permit (GP) issued by the U.S. Army Corps of Engineers (Corps) in October 2010, an ISMP is recommended for all Category 2 and Individual Permit applications, unless otherwise directed by the Corps. Accordingly, these types of plans are now a requirement for Corps permitting, and should include a program for post-construction monitoring of invasive species and implementation of appropriate invasive species control measures. Additionally, the

Maine Department of Environmental Protection (MDEP) has requested on past projects that an invasive species vegetation monitoring plan be included with the overall vegetation management plan.

The overall goal of this ISMP is to prepare a plan to prevent the introduction and spread of invasive plant species within the Project Area as a result of Project construction. For the purposes of this ISMP, the Project Area is defined as the electrical collection lines between turbines (collector line) and the two segments of generator lead line ROW. The ISMP also has the goal to develop a strategy that meets the goals and objectives of the Corps' Invasive Species Policy.[1] Ultimately, the Corps' goals are to "prevent introduction and establishment of invasive species to reduce their impact on the environment, economy, and health of the United States" and to employ an early detection and rapid response system in order to "develop and enhance the capacity to identify, report, and effectively respond to newly discovered/localized invasive species." Further, this ISMP will serve to preserve and enhance the functions and values of the wetlands and uplands within the Project Area. While complete eradication of invasive species is not a stated or realistic goal, this ISMP is designed to limit the introduction and spread of these species as much as possible. The ISMP includes the following steps:

- Identify locations within the collector and generator lead line ROWs where invasive species currently exist in order to develop a baseline for future monitoring;
- Provide a plan for monitoring the status of invasive species within the survey area and coordinate with the involved agencies regarding the results of the monitoring;
- Outline the anticipated schedule and duration of monitoring; and
- Identify appropriate strategies for controlling and/or limiting the spread of invasive species within the Project Area (e.g., mechanical cutting, herbicide application, biological control, or a combination thereof).

3.0 INVASIVE SPECIES BACKGROUND

Invasive plants are non-native species whose introduction to an area causes or is likely to cause environmental or economic harm. Invasive plants often lack natural predators and can successfully colonize and thrive beyond their natural ranges, often out-competing native plants. Generally, these species have competitive adaptations, aggressive reproductive strategies, and efficient dispersal methods. The spread of invasive plant species in both wetland and upland areas is a concern for both biological reasons (e.g., threaten global biodiversity, reduce wildlife habitat value) and cultural/economic reasons (e.g., adverse aesthetic effects, reduced recreational opportunities).

[1] Department of the Army. U.S. Army Corps of Engineers. *U.S. Army Corps of Engineers Invasive Species Policy.* June 2, 2009. Available at: http://www.nae.usace.army.mil/Regulatory/ISP/policy.pdf

The Maine Natural Areas Program (MNAP) maintains a list of plant species currently considered invasive in Maine.[2] Table 1 presents the invasive species most likely to be present in the Project Area based on a review of the MNAP list, as well as on field surveys conducted by Stantec Consulting Services Inc. (Stantec) within the Project Area.

Table 1. Invasive Plant Species Likely to be Present within the Number Nine Wind Farm Project Area.

Common Name	Scientific Name
Norway maple	*Acer platanoides*
Garlic mustard	*Alliaria petiolata*
Japanese barberry	*Berberis thunbergii*
Asiatic bittersweet	*Celastrus orbiculatus*
Black swallowwort	*Cynanchum louiseae*
Russian olive	*Elaeagnus angustifolia*
Autumn olive	*Elaeagnus umbellata*
Japanese knotweed	*Fallopia japonica*
Glossy buckthorn	*Frangula alnus*
Morrow's honeysuckle	*Lonicera morrowii*
Tatarian honeysuckle	*Lonicera tatarica*
Purple Loosestrife	*Lythrum salicaria*
Common reed	*Phragmites australis*
Wood bluegrass	*Poa nemoralis*
Common buckthorn	*Rhamnus cathartica*
Multiflora rose	*Rosa multiflora*

4.0 EXISTING CONDITIONS

During 2014, Stantec performed wetland delineations, vernal pool surveys, and rare, threatened and endangered (RTE) plant surveys within the Project Area. The results of these surveys are available in Exhibit 7C of the MDEP Natural Resources Protection Act (NRPA) / Site Location of Development combined application. During the course of each survey, Stantec documented incidental observations of invasive plant species. Table 2 provides the species observed and details about the population and general location.

[2] Available at: http://www.maine.gov/doc/nrimc/mnap/features/invsheets.htm

Table 2. Invasive Plant Species Observed Along Collector and Generator Lead Lines for the Number Nine Wind Farm.

ID	Species Name	Map Number	Town	Population Notes
Turbine Areas				
1	Lythrum salicaria	2	TD R2 WELS	1 plant
2	Phragmites australis	3	T9 R3 WELS	1 patch
North Generator Lead Line				
3	Lonicera morrowii	4	Littleton	1 small patch, 5-10 stems on edge of field
4	Lonicera tatarica	5	Houlton	1 plant
5	Rhamnus cathartica	5	Houlton	Evenly sparse plants
6	Lonicera morrowii	5	Houlton	1 patch, ~10 small seedlings
7	Lonicera morrowii	5	Houlton	Evenly sparse plants
Bridal Path Generator Lead Line				
8	Lonicera morrowii	5	Houlton	1 plant
9	Lonicera morrowii	5	Houlton	1 plant
10	Fallopia japonica	6	Houlton	1 patch
11	Fallopia japonica	6	Houlton	Multiple patches
12	Lonicera tatarica	6	Houlton	1 plant
13	Frangula alnus	6	Houlton	Evenly sparse plants
14	Rhamnus cathartica	6	Houlton	Evenly sparse plants
15	Lythrum salicaria	7	Houlton	1 plant
16	Lythrum salicaria	7	Houlton	Multiple patches
17	Lythrum salicaria	7	Hodgdon	Multiple patches
18	Lythrum salicaria	7	Hodgdon	Multiple patches
19	Lonicera morrowii	7	Hodgdon	1 patch
20	Lythrum salicaria	7	Hodgdon	Evenly sparse plants
21	Lonicera morrowii	7	Linneus	1 patch
22	Lonicera morrowii	7	Linneus	Evenly sparse plants
23	Lonicera morrowii	7	Linneus	1 plant
24	Celastrus orbiculatus	8	Linneus	1 patch
25	Lythrum salicaria	8	Linneus	1 plant
26	Lonicera morrowii	9	Forkstown Twp	1 plant
27	Fallopia japonica	9	Forkstown Twp	Evenly sparse plants

5.0 INVASIVE SPECIES MONITORING PROTOCOL

5.1 GOALS AND OBJECTIVES

This ISMP includes a plan to monitor and assess the status of invasive plant species within the collector and generator lead line ROWs and to identify areas where invasive species control measures will be required to maintain or enhance the functions and values of uplands and wetlands. This monitoring will target known occurrences of invasive species identified in Table 2, along with potential new occurrences of the invasive species listed in Table 1, and will provide recommendations that will be used to select and implement appropriate control options for each invasive species location.

The objectives of the monitoring will be to:

- Update the status of invasive species within the Project Area in order to target the areas where control measures will be required; and
- Define the types of control measures that are most appropriate for each invasive species location.

5.2 METHODS

Upon completion of construction, the Applicant will retain a qualified consultant to conduct the invasive species monitoring. The monitoring will consist of field surveys of the collector and generator lead ROWs to determine whether invasive species are present and to provide recommendations concerning control options. For each invasive species location, researchers will complete invasive species monitoring data forms, take photographs of the species and the surrounding landscape, and record the location of the invasive species using a Global Positioning System (GPS) receiver. Conditions that may influence the use of a particular type of invasive species control method will also be noted (e.g., wetlands, streams, private residences). Populations of invasive species identified immediately adjacent to the survey area will also be noted, although control strategies for these populations will not be developed. Field surveys will be conducted during the growing season when plant species are most easily identifiable. The monitoring effort will be scheduled to allow time for invasive species treatments to be implemented in the same growing season.

Invasive species monitoring within the Project Area will be conducted in the first full calendar year following the completion of Project construction, with a possible maximum of 2 additional years based on the results of the initial year of surveys and consultation with MDEP and the Corps. If the distribution and densities of invasive species have significantly increased as compared to pre-construction levels after the first year of monitoring, an additional 1-2 years of monitoring may be considered based on consultation with MDEP and the Corps. Construction of the Project is expected to occur in 2016; therefore, the first year of monitoring is expected to be 2017. Table 3 provides the expected monitoring schedule.

The goal of the monitoring effort will be to identify locations where invasive species are present so that control measures can be implemented as soon as practicable. The monitoring will also allow for an evaluation of the effectiveness of any implemented control measures.

5.3 MONITORING REPORT

The results of each year of invasive species monitoring will be detailed in a report that will include a summary of the field survey methods and results, a table that identifies the invasive species in the Project Area, a map showing the GPS location of each invasive species, copies of the monitoring forms, and representative photographs. Comparisons will be made as to whether invasive species distribution and/or densities are increasing, based on a review of the pre-construction data and on the results of the previous year's monitoring results. The monitoring report will include recommendations regarding where invasive species control measures are required, the suggested type of control strategy, and the schedule for the implementation of control measures.

The monitoring report will be provided to the Corps and the MDEP by March 31 of the year following the year in which the monitoring was conducted (e.g., for monitoring conducted in the summer of 2017, the monitoring report will be submitted by March 31, 2018).

Implementation of invasive species control measures recommended in the report will be based on the results of the monitoring and will not require approval from the regulatory agencies. The application of control measures, specifically herbicide applications, will be performed pursuant to any standard permit and safety requirements governing such activities.

6.0 INVASIVE SPECIES CONTROL STRATEGIES

6.1 GOALS AND OBJECTIVES

To develop an effective approach for controlling invasive species within the Project Area, the following factors will be considered:

- The invasive species that are present and their density and distribution within the Project Area;
- The habitat characteristics of the wetlands and uplands in which the invasive species are located;
- Sensitive areas within the Project Area, including wetlands, streams, vernal pools, RTE species, protected wildlife habitat, and visual buffers;
- Adjacent land uses (e.g., residential development, commercial development, agricultural land, etc.), which can influence the choice of control strategies; and
- The cooperation of the landowners and the potential lack of land use control, depending on the conditions of easements across private properties.

As a result of these factors, invasive species control measures may not be practicable or highly effective in all areas within the survey area. Additionally, as stated above, complete eradication of invasive species is not a stated goal of the control program, given the aggressive nature of most invasive species once they become established. Rather, the goal of the control efforts is to prevent the introduction of invasive plant species into new areas not previously colonized, and to prevent their increased abundance in areas previously colonized.

6.2 TYPES OF INVASIVE SPECIES CONTROL

There are 4 primary types of invasive species control methods: mechanical, chemical, biological, and cultural. These control methods may be combined to provide a more effective control strategy.

6.2.1 Cultural Control

Cultural controls are important methods to reduce the spread of invasive species to areas not previously colonized. Methods such as immediate seeding and mulching of disturbed soils in order to establish native vegetation are effective at minimizing the opportunities for the establishment of invasive species. Additional cultural controls such as vehicle washing, isolation of excavated soils, and vehicle inspections are also effective in limiting the spread of invasive species as a result of construction activities.

6.2.2 Mechanical Control

Mechanical control measures such as digging, pulling, and cutting may be effective in controlling isolated invasive plants or small stands of plants. These methods are often necessary in sensitive natural resource areas such as wetlands, streams, protected wildlife habitats, etc., where chemical control is not permitted or ecologically appropriate. However, such techniques may be labor-intensive and may be impractical in areas with dense infestations of invasive species such as common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*), and Japanese knotweed (*Fallopia japonica*).

6.2.3 Chemical Control

Chemical control (i.e., herbicides) is the most common alternative used for controlling invasive species along ROWs. If used selectively and in limited areas (i.e., not in wetlands with standing water or in or adjacent to streams), herbicides can be applied in an environmentally sound manner to provide effective control. In addition, herbicide applications often provide the most cost-effective method for controlling dense infestations of invasive species. However, chemical control is not permitted in certain areas of the Project ROWs based on the conditions established in the Project's buffer plan (see Section 10 of the MDEP NRPA / Site Location of Development combined application).

6.2.4 Biological Control

Biological controls can be effective in controlling purple loosestrife under certain conditions but are not yet proven for the control of other species that could be present within the Project Area. Consultation with the Corps indicates that species such as loosestrife beetles (*Galerucella calmariensis* and *Galerucella pusilla*) may be useful in controlling populations of purple loosestrife. At this time, the density of purple loosestrife identified within the survey area is relatively low, and the use of loosestrife beetles is unlikely to be recommended for this Project.

6.3 CONTROL OF EXISTING INVASIVE SPECIES

Prior to construction of the collector and generator lead lines, the Applicant will retain a qualified contractor to identify and perform an initial treatment on the locations of the Japanese knotweed, invasive honeysuckles, glossy buckthorn, common buckthorn, Asiatic bittersweet, common reed, and purple loosestrife located within the ROWs (Figures 1-7). Honeysuckle and buckthorn shrubs and Asiatic bittersweet vines will be cut at ground level and an appropriate herbicide will be applied to the cut stump. For the Japanese knotweed, common reed, and purple loosestrife a clip-and-drip herbicide application is recommend for small patches. Large monotypic stands may also be treated with an herbicide application using a low-pressure backpack sprayer if the contractor determines that this method can be safely performed without resulting in drift to non-target species and if there is no standing water in the wetland at the time of the treatment. Any herbicide applications in or near wetlands or waterbodies will be performed using an herbicide approved for aquatic applications.

In order to limit the spread of these species to other portions of the collector and generator lead ROWs, the construction contractor will implement the following cultural controls surrounding the populations of identified invasive species in the ROWs:

- Minimize ground disturbance and exposure of soil near the invasive species locations to reduce sprouting from the seed bank. Use of construction equipment within locations of these species should be avoided, if possible.
- Construction vehicles and/or construction mats used within known invasive species locations shall be washed prior to moving to a new section of the Project Area. All mud, dirt, debris, and plant material will be removed from the exterior, undercarriage, and tires/tracks of the equipment with a high-pressure washer. Construction equipment and vehicles working in this portion of the Project Area will be inspected prior to leaving the site.
- Soils excavated within known invasive species locations will not be transported to or used in other parts of the Project.

After construction of the Project, careful observations should be made during annual monitoring at the location of the existing plant locations to determine if the initial control efforts were successful in limiting the spread of these species. Additional control efforts are likely to be required during the monitoring period in these areas in order to limit their growth and spread.

6.4 INVASIVE SPECIES CONTROLS IMPLEMENTATION SCHEDULE

The Applicant will institute the control measures described above during construction activities in areas where invasive species have been identified. After construction is complete, the Applicant recognizes that early treatment measures can prevent the spread of invasive species, particularly in areas where such species were not present prior to construction of the Project. As a result, the Applicant will implement invasive species controls in the first full calendar year following the completion of construction. Particular treatment methods will be focused on preserving and enhancing the habitat characteristics of the wetlands and uplands in the Project ROWs.

Based on the results of the post-construction monitoring described in Section 5.0 above , the Applicant will schedule invasive species treatment measures annually, as soon as practicable after the field monitoring recommendations are received. The schedule for the treatment will depend on the types of controls recommended and the species identified. For example, mechanical removal of certain species can be performed almost any time of the year when plant species are identifiable, while herbicide applications and biological controls may require that work be done during the growing season to be most effective. For locations where invasive species controls are implemented, monitoring performed in subsequent years of the monitoring period will serve to assess the effectiveness of such measures.

6.5 ANTICIPATED CONTROL STRATEGIES

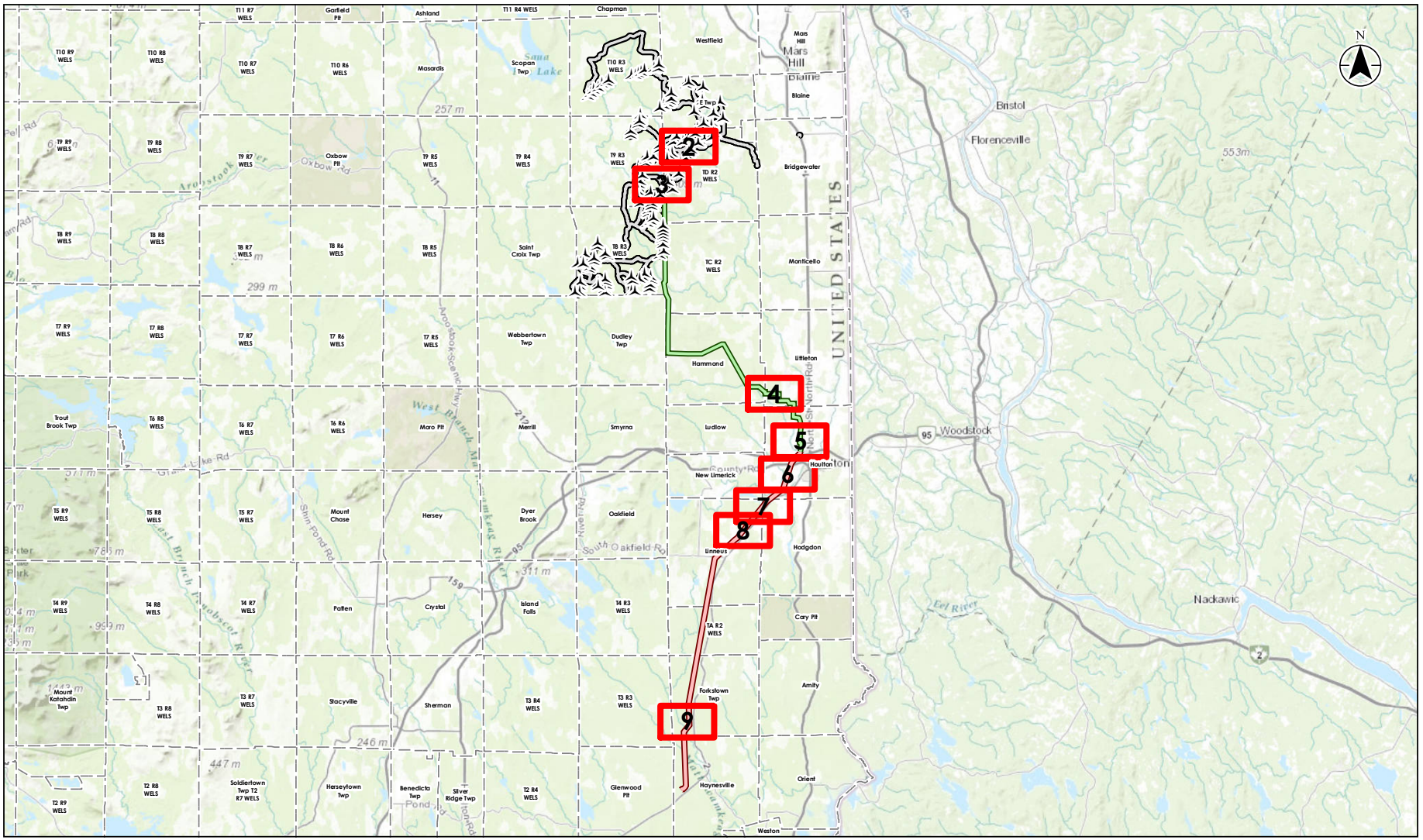
Specific control strategies will be developed based on the results of the annual monitoring; however, it is anticipated that the most effective general approach for controlling invasive species within the survey area will be a combination of cultural methods (i.e., prevention of invasive species introduction and spread through reseeding and mulching), mechanical removal, and application of herbicides in selected locations. Repeated herbicide applications may be required in multiple growing seasons in order to achieve effective control.

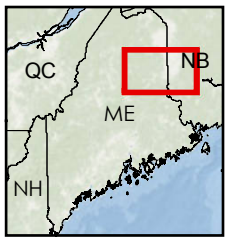
The need for and types of chemical control of invasive species will be carefully evaluated, particularly in sensitive areas such as wetlands, streams, and vernal pools, natural resource buffers, and areas where the collector or generator lead ROW is not owned by the Applicant. Additionally, invasive species may be identified in wetland and upland areas that are outside of the defined Project area boundaries. The Applicant has no authority to attempt to control invasive species that may be present in adjacent areas outside of the Project area.

Herbicide applications will be performed according to applicable laws and regulations put forth by the Maine Board of Pesticides Control, MDEP, and the United States Environmental Protection Agency. The type of herbicide(s) to be used, method of application, and schedule for application will be determined based on the locations of the targeted areas and the particular invasive species to be controlled.

Similarly, the use of any biological control measures will be coordinated with MDEP and the Corps. The species used for biological control will be obtained from approved sources.

FIGURES





Legend

- Turbine Location
- Access Road
- North Generator Lead Line
- Bridal Path Generator Lead Line

0 5 10 Miles

1 inch = 10 miles (At page size of 8.5"x11")

Notes

1. Base Map: ESRI ArcGIS Online World Topo Map

Stantec

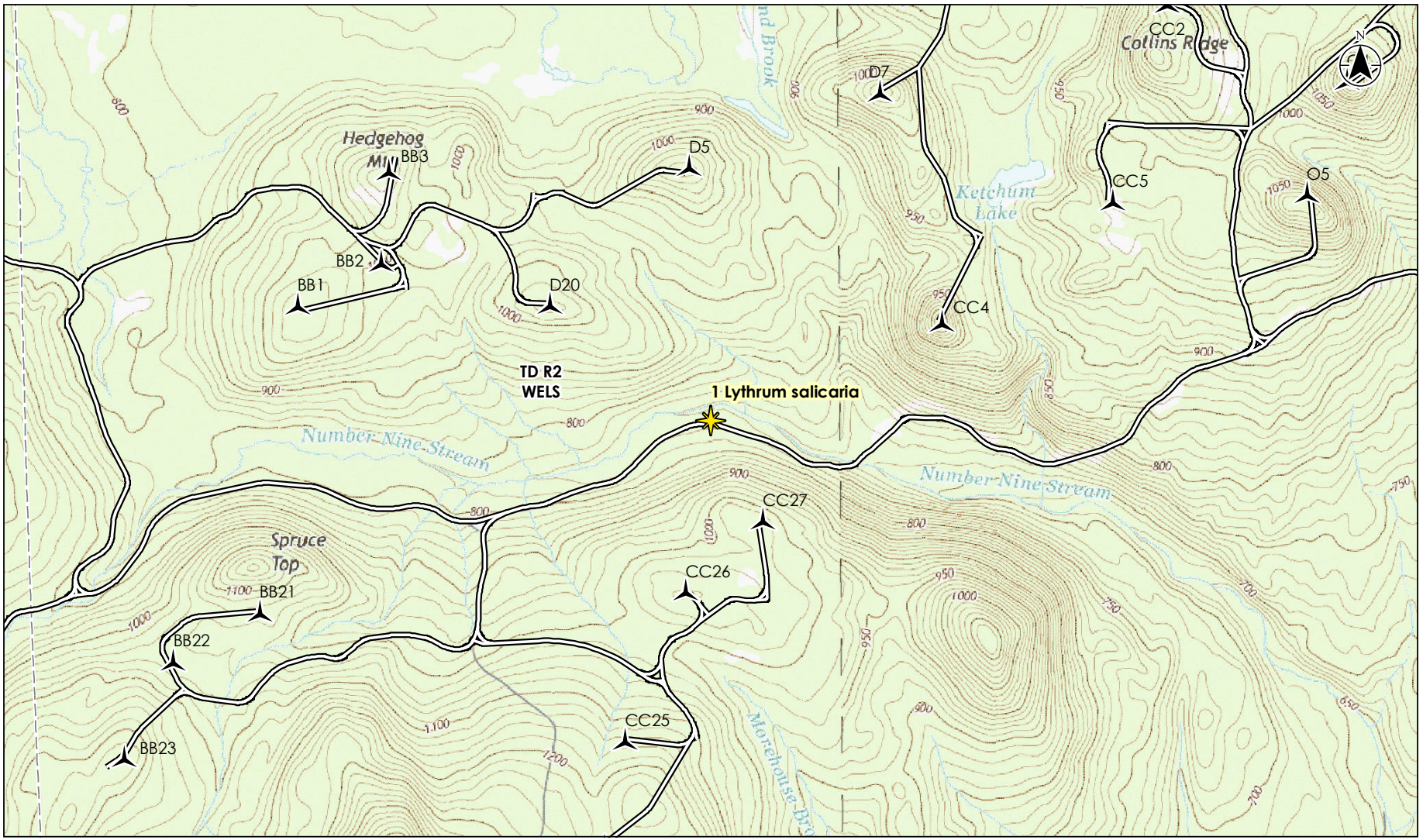
Project Location
Aroostook County, Maine

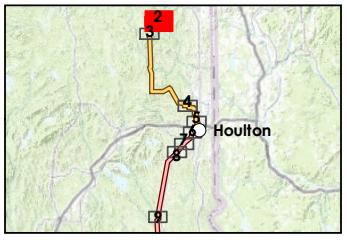
195600919
Prepared by GAC on 2014-12-04
Reviewed by BPE on 2014-12-05
Updated by GAC on 2015-04-15

Client/Project
EDP Renewables North America LLC
Number Nine Wind Farm

Figure No.
1

Title
Invasive Species Locations Key Map





Legend

- Invasive Species Location
- Turbine Location
- Access Road
- Town Boundary

0 1,000 2,000 Feet

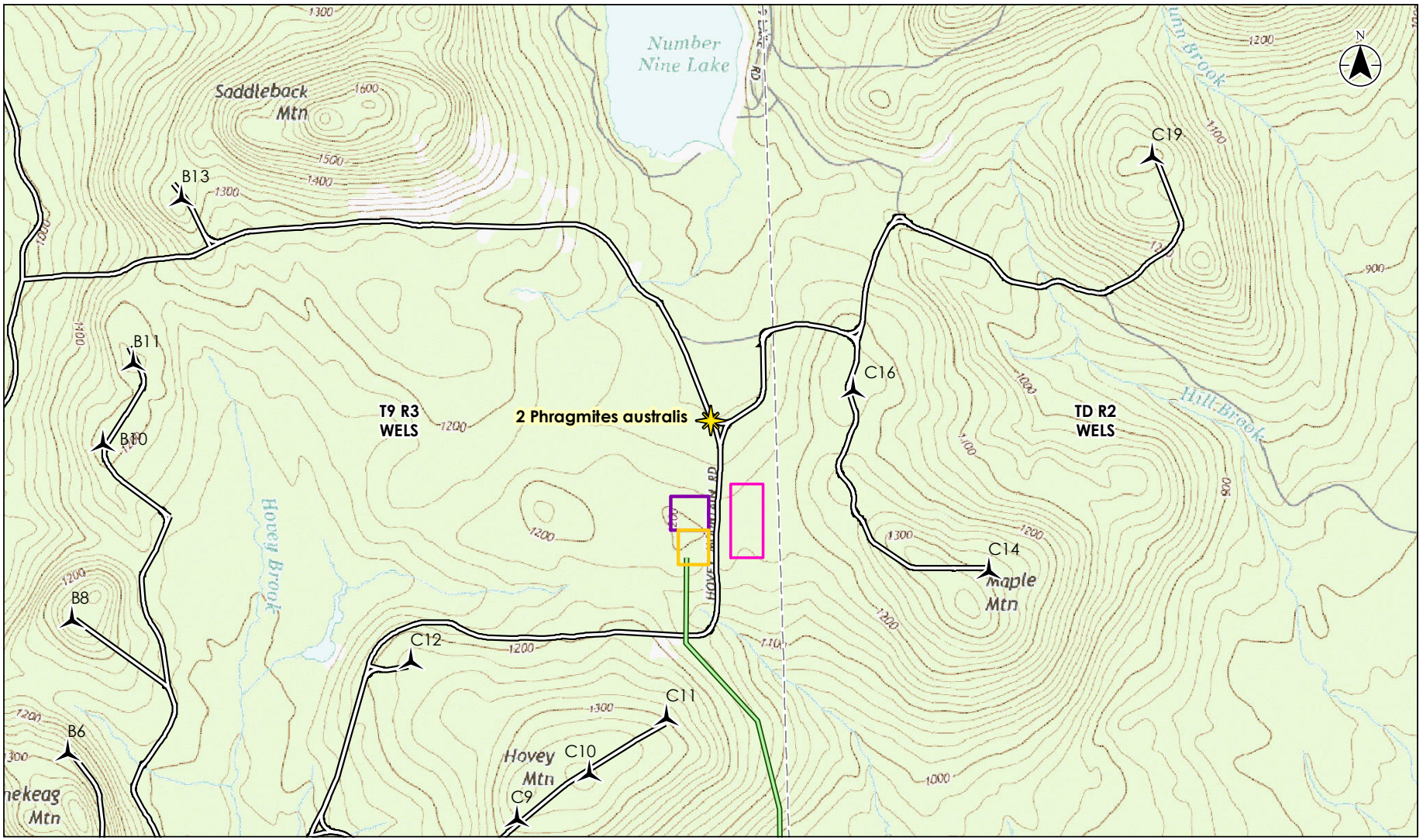
1 inch = 2,000 feet (At page size of 8.5"x11")

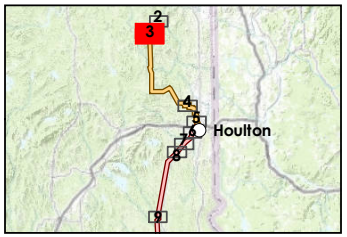
Notes

1. Base Map: USGS Topo Quad 2014

Stantec

Project Location	195600919
Aroostook County, Maine	Prepared by GAC on 2014-12-04
	Reviewed by BPE on 2014-12-22
	Updated by GAC on 2015-04-15
Client/Project	EDP Renewables North America LLC
	Number Nine Wind Farm
Figure No.	2
Title	**Invasive Species Locations**





Legend

- Invasive Species Location
- Turbine Location
- Substation
- O&M Building
- Laydown Area
- North Generator Lead Line
- Access Road
- Town Boundary

0 1,000 2,000 Feet

1 inch = 2,000 feet (At page size of 8.5"x11")

Notes

1. Base Map: USGS Topo Quad 2014

Stantec

Project Location	195600919
Aroostook County, Maine	Prepared by GAC on 2014-12-04
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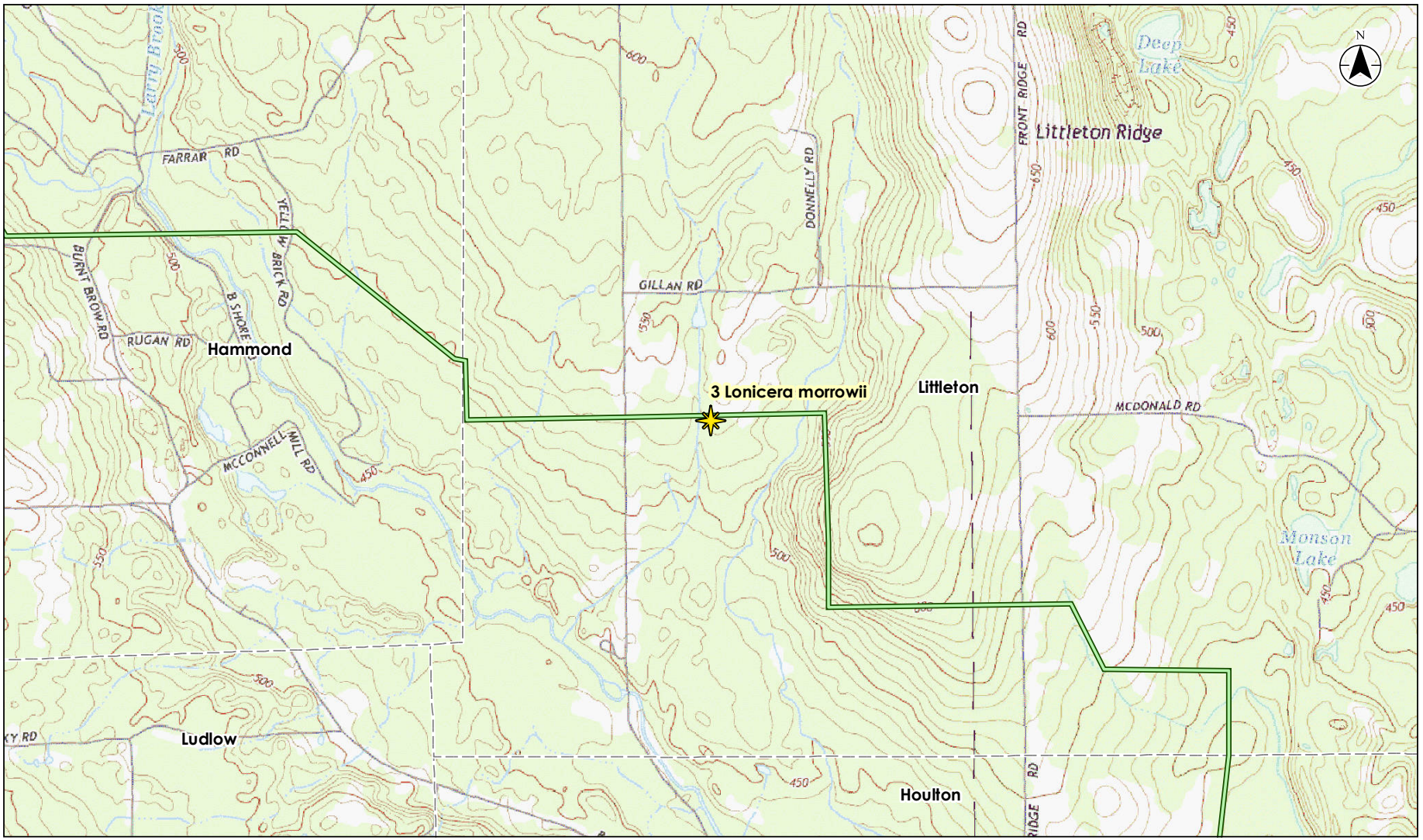
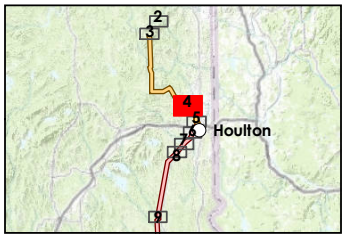
	Updated by GAC on 2015-04-15

Client/Project
EDP Renewables North America LLC
Number Nine Wind Farm

Figure No.
3

Title
Invasive Species Locations





Legend

- Invasive Species Location
- North Generator Lead Line
- Town Boundary

0 1,000 2,000 Feet

1 inch = 2,000 feet (At page size of 8.5"x11")

Notes

1. Base Map: USGS Topo Quad 2014

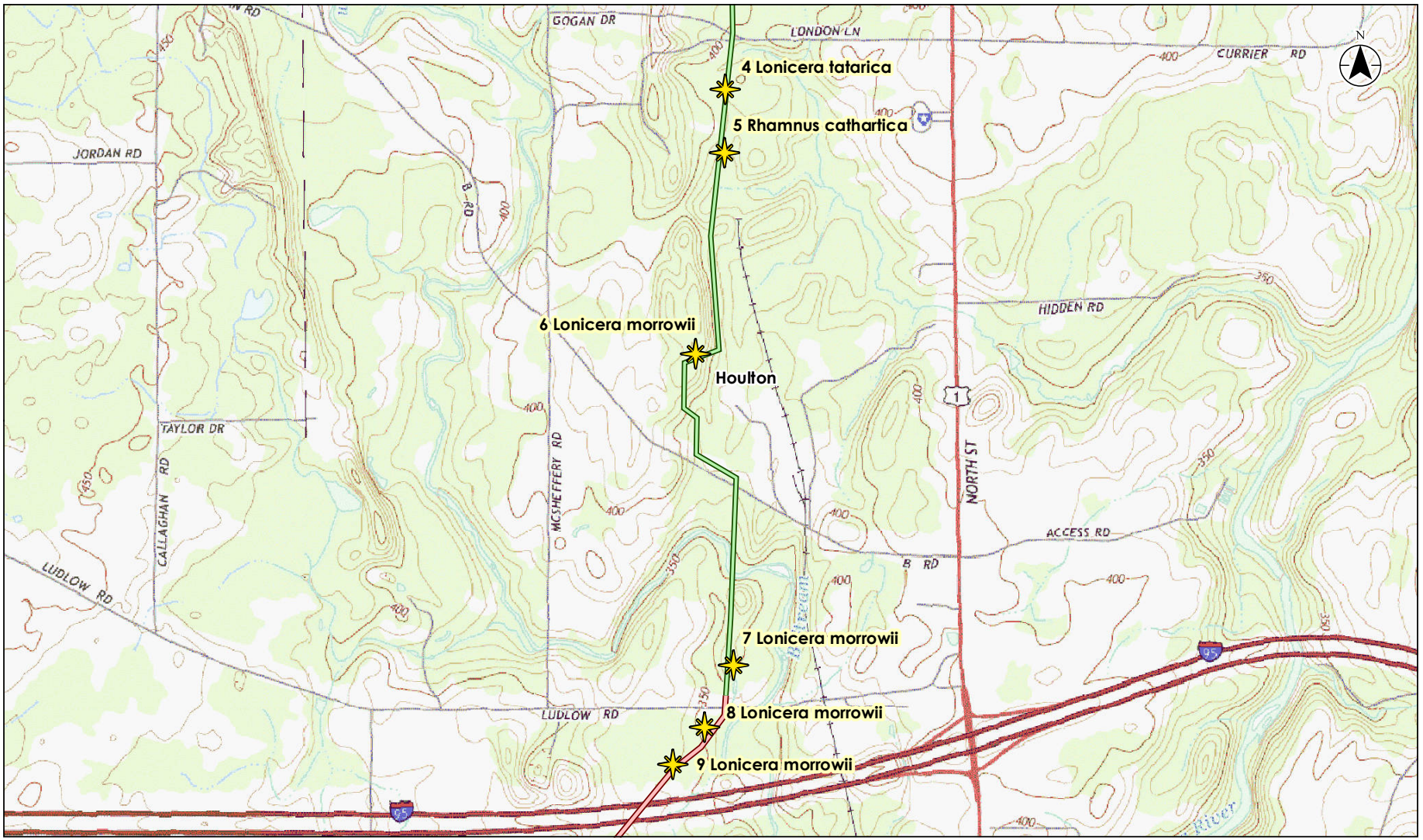
Stantec

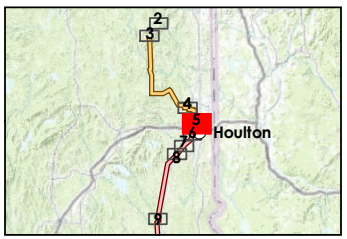
Project Location	195600919
Aroostook County, Maine	Prepared by GAC on 2014-12-04 Reviewed by BPE on 2014-12-22 Updated by GAC on 2015-04-15

Client/Project
EDP Renewables North America LLC
Number Nine Wind Farm

Figure No.
4

Title
Invasive Species Locations





Legend

- Invasive Species Location
- North Generator Lead Line
- Bridal Path Generator Lead Line
- Town Boundary

0 1,000 2,000 Feet

1 inch = 2,000 feet (At page size of 8.5"x11")

Notes

1. Base Map: USGS Topo Quad 2014

Stantec

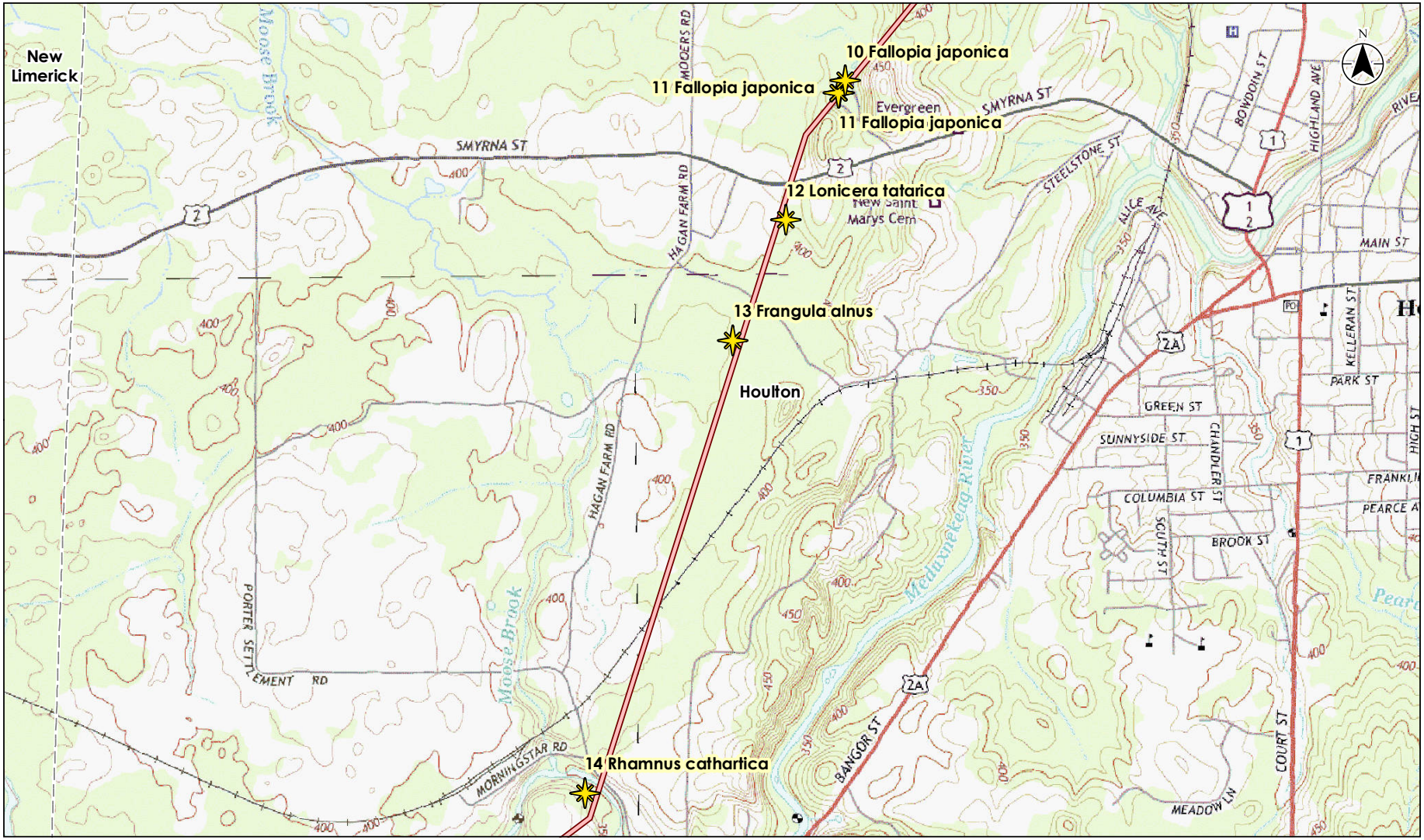
Project Location
Aroostook County, Maine

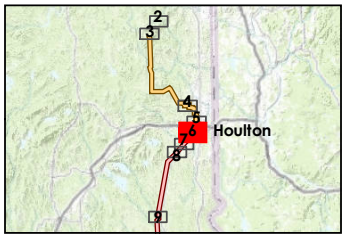
195600919
Prepared by GAC on 2014-12-04
Reviewed by BPE on 2014-12-22
Updated by GAC on 2015-04-15

Client/Project
EDP Renewables North America LLC
Number Nine Wind Farm

Figure No.
5

Title
Invasive Species Locations





Legend

- Invasive Species Location
- Bridal Path Generator Lead Line
- Town Boundary

0 1,000 2,000 Feet

1 inch = 2,000 feet (At page size of 8.5"x11")

Notes

1. Base Map: USGS Topo Quad 2014

Stantec

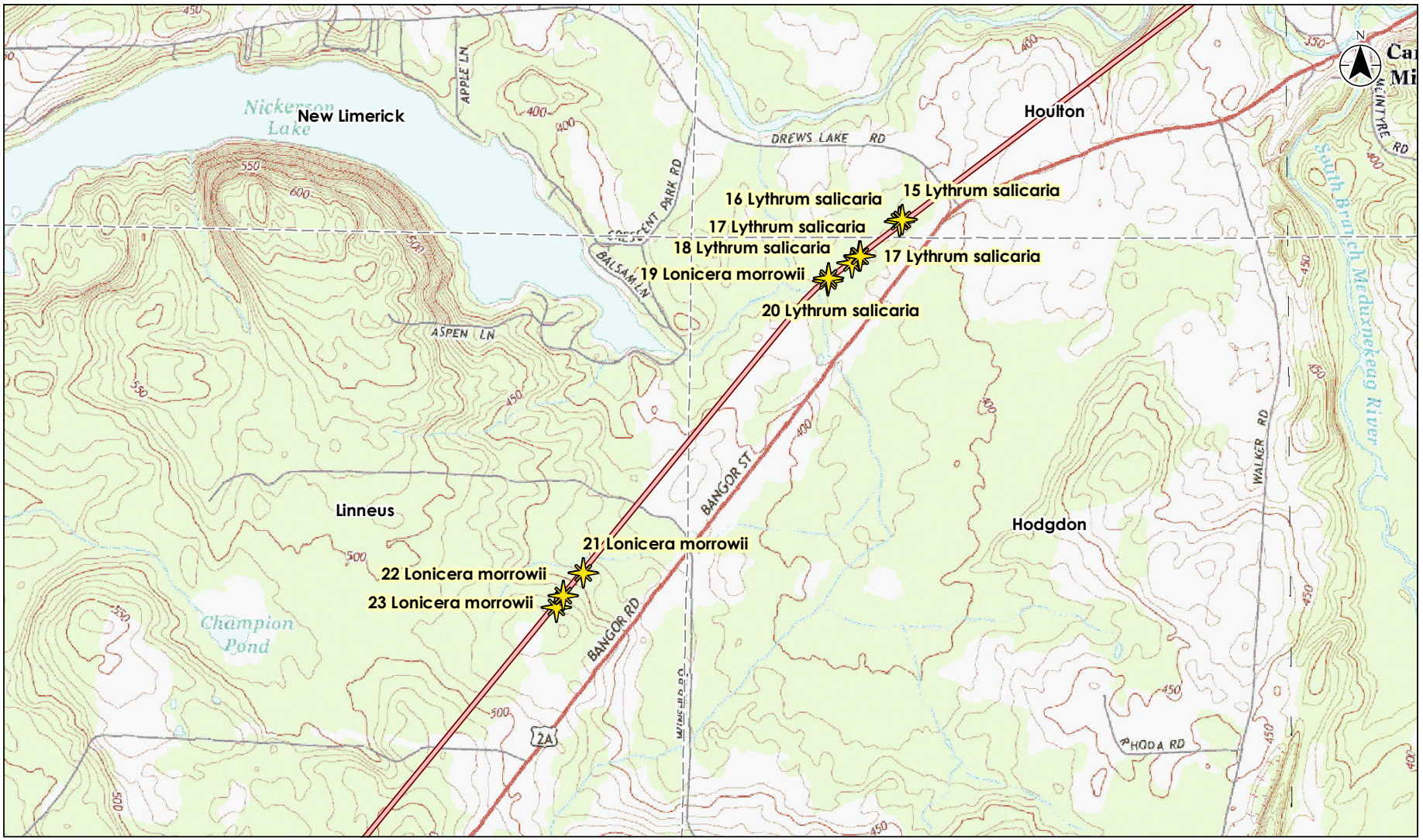
Project Location
Aroostook County, Maine

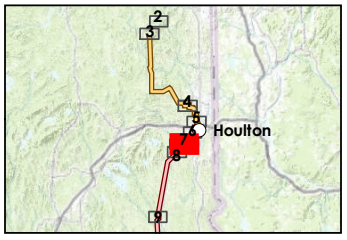
195600919
Prepared by GAC on 2014-12-04
Reviewed by BPE on 2014-12-22
Updated by GAC on 2015-04-15

Client/Project
EDP Renewables North America LLC
Number Nine Wind Farm

Figure No.
6

Title
Invasive Species Locations





Legend

- Invasive Species Location
- Bridal Path Generator Lead Line
- Town Boundary

0 1,000 2,000 Feet

1 inch = 2,000 feet (At page size of 8.5"x11")

Notes

1. Base Map: USGS Topo Quad 2014

Stantec

Project Location
Aroostook County, Maine

195600919
Prepared by GAC on 2014-12-04
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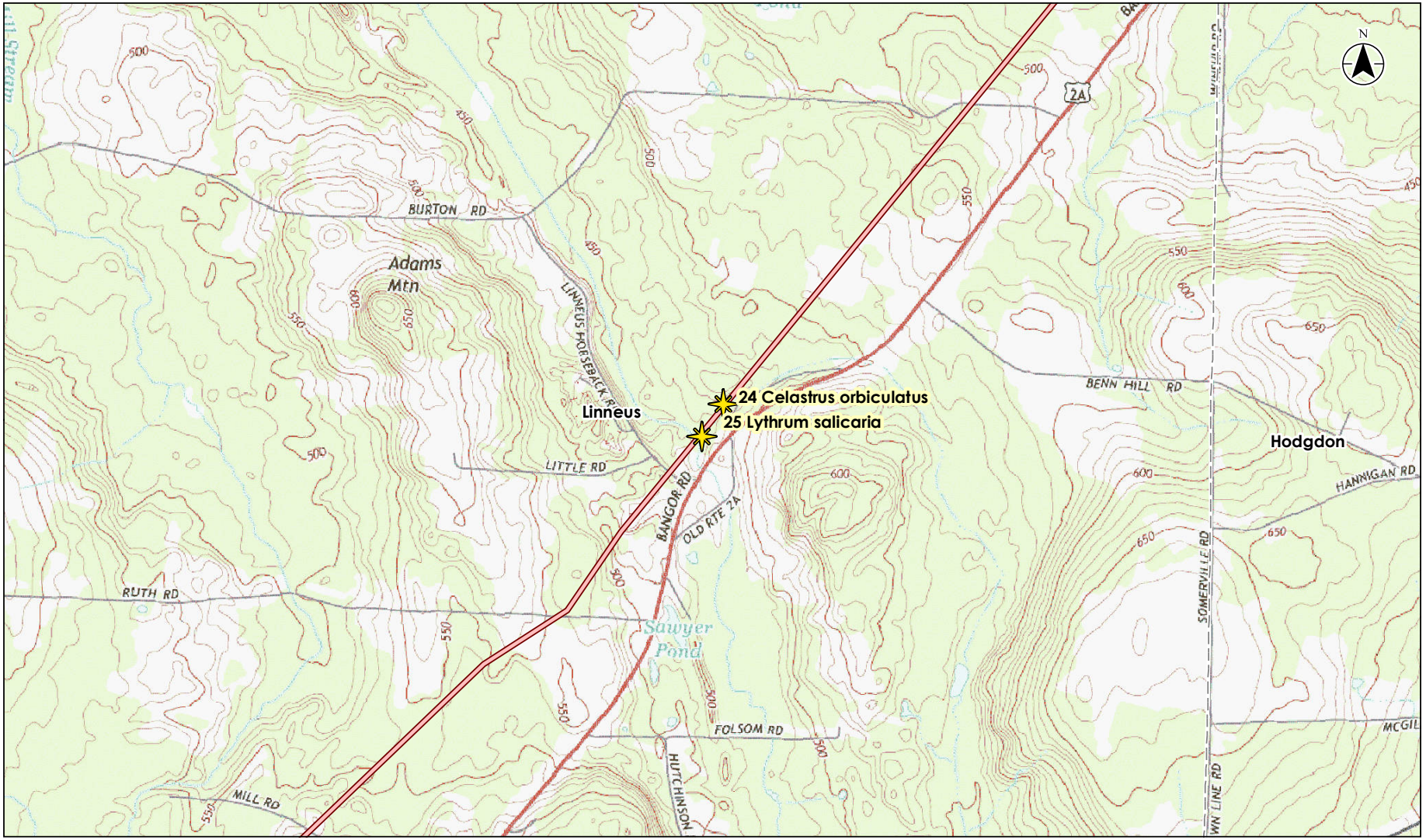
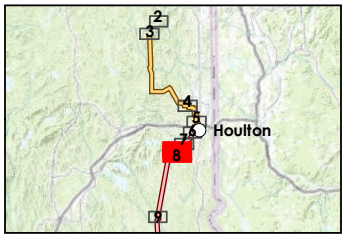
Updated by GAC on 2015-04-15

Client/Project
EDP Renewables North America LLC
Number Nine Wind Farm

Figure No.
7

Title
Invasive Species Locations





Legend

- Invasive Species Location
- Bridal Path Generator Lead Line
- Town Boundary

0 1,000 2,000 Feet

1 inch = 2,000 feet (At page size of 8.5"x11")

Notes

1. Base Map: USGS Topo Quad 2014

Stantec

Project Location
Aroostook County, Maine

195600919
Prepared by GAC on 2014-12-04
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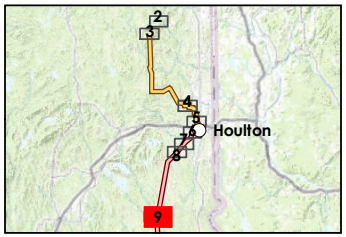
Updated by GAC on 2015-04-15

Client/Project
EDP Renewables North America LLC
Number Nine Wind Farm

Figure No.
8

Title
Invasive Species Locations



Legend

- Invasive Species Location
- Bridal Path Generator Lead Line
- Town Boundary

0 1,000 2,000 Feet

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Notes

1. Base Map: USGS Topo Quad 2014

Stantec

Project Location
Aroostook County, Maine

195600919
Prepared by GAC on 2014-12-04
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Updated by GAC on 2015-04-15

Client/Project
EDP Renewables North America LLC
Number Nine Wind Farm

Figure No.
9

Title
Invasive Species Locations

Exhibit 10-C. PROPOSED UTILITY VEGETATION MAINTENANCE PLAN AND INVASIVE SPECIES MANAGEMENT PLAN

March 10, 2015

Mr. Kellen Ingalls
EDP Renewables North America LLC
Development – Eastern Region
541 Main Street, Suite B
Presque Isle, Maine 04769

Subject: **Number Nine Wind Farm LLC**
Proposed Utility Vegetation Maintenance Plan for the Bridal Path Generator Lead Line

Dear Kellen:

Central Maine Power Company (CMP), Emera Maine, and MEPCO are submitting the attached Vegetation Maintenance Plan (VMP) to be included as part of the Maine Department of Environmental Protection's (Department's) review of the Number Nine Wind Farm LLC (Number Nine) applications (Site Location of Development Law [Site Law], 38 M.R.S.A. §§481-490; DEP Regulations Chapters 371-377; Natural Resources Protection Act, 38 M.R.S.A. §§480-A to 480-BB; DEP Regulations Chapters 305-355 permits; and Water Quality Certification under §401 of the Clean Water Act [33 U.S.C. §1341]).

As discussed with Department staff, CMP and Emera Maine have requested that dual VMPs be considered as part of the Department's review of the Number Nine applications. The generator lead line of the Number Nine project is divided into two segments: North Generator Lead Line (north of Houlton) and Bridal Path Generator Lead Line (Houlton to Haynesville). The following provides background information and the rationale for this submittal.

If approved by the Department, the attached VMP would only be implemented on the Bridal Path Generator Lead Line segment of the Number Nine generator leads, and only if CMP, Emera Maine, MEPCO (a Maine Corporation owned by Central Maine Power Company and Emera Maine), or another entity formed by Emera Maine and CMP exercise an option to purchase this generator lead line segment. Number Nine would continue to implement their VMP on the North Generator Lead Line. If the Bridal Path Generator Lead Line segment is purchased by CMP, Emera Maine, MEPCO, or another entity formed by Emera Maine and CMP, the purchasing entity would then submit an application to the Department for partial transfer of these permits. CMP and Emera Maine request that if the attached VMP is approved under these conditions, the Department explicitly address this in the Order approving the Number Nine Wind Farm.

Background

Number Nine, CMP, Emera Maine, and MEPCO reached agreements earlier this year that will enable clean electricity from the Number Nine Wind Farm in northern Maine to reach southern Maine and New England. The focus of the agreements is the use by Number Nine of a portion of a pre-existing transmission line right-of-way (ROW) corridor known as the "Bridal

Path" located between Houlton and Haynesville in Aroostook County. The Bridal Path ROW is an existing yet undeveloped (i.e., no constructed lines or ongoing maintenance) 225-foot wide ROW owned by Emera Maine. In Number Nine's application, the proposed 345 kV generator lead line in the Bridal Path is known as "Bridal Path Generator Lead Line". Under the agreements, Number Nine has the option to purchase an easement to a portion of the Bridal Path ROW to develop the Bridal Path Generator Lead Line, and Emera Maine, CMP and MEPCO will hold an option to purchase Number Nine's lead line segment in the Bridal Path ROW.

Generator Lead vs. Bulk Transmission

In addition to the potential of the Bridal Path Generator Lead Line being purchased by CMP, Emera Maine, MEPCO, or another entity formed by Emera Maine and CMP, it is important to understand what this ownership change would entail as it relates to the bulk transmission system, and why a more robust utility VMP is critical for maintaining reliability. In short, the obligation to provide adequate, safe and reliable electricity services to customers, and to minimize interruptions (outages), is unique to public utilities based on how they are regulated at the federal and state levels. The reliable operation of the power grid is technically demanding, particularly in the northeast where storms, ice, hurricanes, cold snaps, and heat waves are not uncommon. Such natural events, combined with this region's heavily forested land cover, exponentially increase the potential for widespread outages as a result of trees and limbs contacting a line.

The central tenet of electricity reliability management is to plan for the unexpected. The unique characteristics of electricity mean that when problems arise, they can spread widely and escalate almost instantaneously, as witnessed in the August 2003 blackout that affected the entire eastern United States and parts of Canada. As such, the system must be continuously maintained to prevent outages so that the severity and extent of an outage is limited to the greatest extent possible. Therefore, a robust VMP is an important foundation of maintaining a reliable system to ensure that all transmission lines operate with a minimal risk of incident. In fact, the 2003 blackout was caused by vegetation growing up into the conductor safety zone. Therefore, vegetation management is critical to maintaining a robust electrical system because electric power outages occur most often when trees or limbs grow into or fall onto transmission lines.

It is important to note that an electrical outage can occur even if a tree does not make direct contact with a line, as an electric arc can occur between a tree and a nearby conductor if sufficient clearance is not maintained. Arcing distance varies but is typically greater as voltage increases. Therefore, a 345-kV transmission line such as the Bridal Path Generator Lead Line, has the greatest arcing distance and, subsequently, the greatest need to maintain sufficient clearances between conductors and nearby trees.

The North America Electric Reliability Corporation (NERC) is an international regulatory authority whose mission is to assure the reliable operation of the bulk power system in North America. NERC is subject to oversight by the Federal Energy Regulatory Commission (FERC) and governmental authorities in Canada. NERC Reliability Standards define the reliability requirements for planning and operating the North American bulk power system, and these were

developed using a results-based approach. Results-based standards focus on performance or results, and this concept was introduced to electric reliability standards in 2010, when it was included in the NERC Standard Processes Manual. The reliability objective of the NERC Vegetation Management Standard is to prevent vegetation-related outages which could lead to an escalating or cascading event causing widespread electricity outages. Both Emera Maine and CMP must adhere to these standards or face significant financial penalties based on the severity of the consequences related to inadequate vegetation maintenance.

The NERC FAC-003-3 is a zero tolerance standard for tree-caused power outages. This standard came into effect on July 1st 2014 and mandates that vegetation must be managed to prevent encroachments into the Minimum Vegetation Clearance Distance (MVCD) due to grow-in from below the conductors, fall-in from within and outside the ROW, and conductor blow-out into adjoining vegetation. The MVCD is the calculated minimum allowable distance between conductors and vegetation. The transmission system operator must demonstrate that preventing encroachment into the MVCD considers the movement of line conductors under all applicable line load and weather conditions (i.e., the sag and lateral sway of the conductors). Violations of NERC FAC-003-3 can and have resulted in fines in the many millions of dollars, and the investigation into a tree-caused outage is extensive and costly to ratepayers.

CMP and Emera Maine spend millions of dollars annually to maintain their ROWs, and utility best practices require that all capable tree species (i.e., woody species and individual woody specimens that are capable of growing into the conductor safety zone, thus violating the MVCD) be removed from the ROW. In addition to NERC FAC-003-3 standards, some states (e.g., New York) prevent utilities from leaving or topping any trees in a bulk transmission line ROW.

Another important difference between a generator lead line and a utility-owned and maintained line that is part of the bulk transmission system, is vegetation maintenance cost. Utility VMPs strike a necessary balance between reliability and adherence to NERC FAC-003-3, safety, and cost, because VMP implementation costs for a bulk transmission line are paid by ratepayers. In contrast, VMP implementation costs for a generator lead are paid for by the generator. A generator's decisions regarding the extent and resulting expense of proposed VMPs is based, at least in part, on a generator's own financial plan and revenue goals, whereas utilities are required to responsibly manage costs that are passed on to customers.

Over the past several decades, utilities have refined their approach such that herbicides are the most effective "tool" used to control capable species. The overall technique targets individual undesirable specimens, while allowing desirable species and woody specimens ("non-capables") and herbaceous growth to thrive in the ROW. This can result in a thick layer of herbaceous vegetation and shrubs that, in time, can outcompete capable species, thus reducing the need for herbicide use on the ROW in the future. This in turn has resulted in more effective ROW maintenance programs as a result of minimizing the use of mechanized equipment and associated tree cutting.

In addition, NERC standards do not allow for continued growth of capable trees in ROWs and, as such, utilities are not set up with the necessary equipment or techniques to top trees or to implement "feathering" of woody vegetation on a ROW. Feathering would require topping as trees grow in height. Aside from posing a potential electric reliability violation and fines, this also results in more worker exposure and would be difficult to implement on remote sections of ROW. Both Emera Maine and CMP have robust tree trimming operations for roadside distribution lines but these operations are generally conducted from a bucket truck. The use of bucket trucks on a vegetated transmission line ROW would be difficult or impossible without the use of crane mats, bridges, and equipment to haul and place the mats and bridges. This in turn would increase environmental impacts, potentially increase the spread of invasive species, and pose additional worker exposure risks when working close to energized 345 kV lines whose arc may extend as much as 16 feet.

Conclusion

In summary, under the anticipated outcome of a future change in ownership of the line, the utilities request that Number Nine submit the attached VMP to the Department for review and approve the utility VMP for the following reasons:

1. Utility bulk transmission system reliability obligations are higher than those for generator lead lines, and the utilities do not believe that the Number Nine proposed VMP would allow the utilities to meet those higher reliability obligations. This would create an unacceptable potential of increased outages and resulting regulatory agency fines (to be borne by ratepayers).

2. The utilities are concerned about worker exposure and the feasibility of implementing certain components of the Number Nine VMP.

3. This utility VMP (with minor project-to-project variations) has been found by the Department to meet all applicable performance standards and approval criteria, under applicable statutes and regulations, for many transmission line projects in Maine over the past several years.

4. The proposed utility VMP has been demonstrated to be protective of sensitive natural resources, as evidenced by the biological health of transmission line corridors in Maine.

5. Utilities must balance VMP cost with reliability considerations; the proposed utility VMP meets both of these objectives.

It is our understanding that Number Nine is submitting a VMP that, to our knowledge, is consistent with that of other wind power projects permitted by the Department. The enclosed utility VMP is likewise consistent with that of other transmission line projects permitted by the Department in recent years, and is consistent with best utility practices in Maine and throughout New England.

As the enclosed VMP is being submitted as part of the Number Nine application, CMP and Emera Maine respectfully request that this utility VMP be reviewed concurrent with Number Nine's application, and specifically request that it be addressed in the Department's Order of the Number Nine Wind Farm, if the project is approved. Specifically, CMP and Emera Maine request that if ownership of the Bridal Path Generator Lead Line transfers to CMP, Emera Maine, MEPCO, or another entity formed by Emera Maine and CMP, the Order states that this utility VMP has been approved as the VMP for this segment of the generator lead line post-conveyance.

To facilitate the Department's review of this proposal, included with the utility VMP is a table listing the substantive differences between Number Nine's proposed VMP and the utility VMP, and explaining the rationale for each difference.

CMP and Emera Maine appreciate the opportunity to file the enclosed VMP as part of the Number Nine Wind Farm LLC application as well as your time in considering this important matter.

Douglas A. Herling
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Central Maine Power Company

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Vice President, Transmission
Emera Maine

Signature page for Vegetation Maintenance Plan cover letter submitted to **Kellen Ingalls** and signed on March 10, 2015

Central Maine Power Company

Emera Maine

MEPCO

Bridal Path
Post-Construction
Vegetation Maintenance Plan

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March 2015

CENTRAL MAINE POWER

Emera Maine

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Introduction

This Post-Construction Vegetation Maintenance Plan (VMP) describes the restrictive maintenance requirements for protected natural resources along the Bridal Path Generator Lead Line right-of-way (ROW). The requirements described in this VMP apply to routine maintenance and are not intended to apply to emergency maintenance and/or repair actions.

The goal of the VMP is to provide maintenance personnel and contractors with a cohesive set of vegetation maintenance specifications for the ROW. The VMP is intended to be used in conjunction with the project As-Built Plan & Profile drawings to locate the areas where maintenance restrictions apply.

The protected natural resources subject to restrictive maintenance requirements include:

- Wetlands and streams;
- Perennial streams within designated Atlantic salmon (*Salmo salar*) habitat;
- Significant Vernal Pools (SVP);
- Inland Waterfowl and Wading Bird Habitat (IWWH);
- Deer Wintering Areas (DWA);
- Rare plant locations; and
- Locations over mapped significant sand and gravel aquifers.

In locations where individual restrictions or procedures overlap or multiple restrictions apply, the more stringent restrictions and all applicable procedures will be followed by maintenance personnel and contractors.

Right-of-Way Vegetation Maintenance Procedures

Typical Maintenance Procedures

Routine vegetation maintenance along the Bridal Path ROW is intended to meet the following goals:

1. Maintain the integrity and functionality of the line
2. Maintain access in case of emergency repairs
3. Facilitate safety inspections.

Therefore, the objective of this VMP will be to control the growth of woody vegetation capable of encroaching into the Minimum Vegetation Clearance Distance (MVCD) of the transmission

line to ensure the integrity and safe operation of the transmission line consistent with the ISO New England Vegetation Management Standard (ISO-NE Vegetation Management Standard)[1] and with the standards of North American Electric Reliability Corporation's (NERC) Transmission Vegetation Management.[2] This will be accomplished by practicing an integrated vegetation management strategy using a combination of hand-cutting and selective herbicide applications. Mechanical mowing may be used in unusual circumstances to regain control of vegetation, should the typical procedures not suffice.

Throughout clearing and construction, shrub and herbaceous vegetation will remain in place to the extent possible. Removing large trees will be done during initial ROW clearing prior to construction of the new transmission line. Follow-up maintenance activities during operation of the line require the removal of "capable species," dead trees, and "hazard trees." Capable trees are those plant species and individual specimens that are capable of growing tall enough to violate the required clearance between the conductors and vegetation established by the ISO-NE Vegetation Management Standard and NERC. The ISO-NE Vegetation Management Standard requires that a minimum of 15 feet of separation be maintained at all times between vegetation and the conductors.[3] Due to the sag of the electric transmission lines between the poles, which varies with the distance between poles, tension on the wire, electrical load, air temperature and other variables, the required ISO-NE clearance is typically achieved by removing all capable species during each maintenance cycle. Removing capable species vegetation allows for the maintenance of 25 feet of separation between vegetation and the lines, thereby adhering to both the ISO-NE and NERC standards. Hazard trees are those trees typically on the edge of the ROW that pose an imminent threat to violating the minimum separation standard or are at risk of contacting the lines themselves. Hazard trees are typically removed immediately upon identification.

More frequent vegetation management may be required within the first 3 to 4 years following construction in order to bring the vegetation under control. After this initial management period, maintenance practices are typically carried out on a 4-year cycle depending on growth, weather, geographic location, and corridor width. Maintenance may be required less frequently in the long-term as vegetation within the corridor becomes dominated by shrub and herbaceous species. Large branches that overhang the ROW and any hazard trees on the edge of or outside of the ROW that could contact the electrical lines or come within 15 feet of a conductor may be removed as soon as they are identified.

The following procedures will be implemented during vegetation maintenance activities to protect sensitive natural resources:

1 ISO New England Operating Procedure No. 3, Transmission Outage Scheduling – Appendix C – ISO New England Right-of-Way Vegetation Management Standard, February 1, 2005.

2 North American Electric Reliability Corporation. Transmission Vegetation Management, Standard FAC-003-3 Technical Reference. July 1, 2014.

3 ISO New England Operating Procedure No. 3, Transmission Outage Scheduling – Appendix C Attachment, February 1, 2005.

- Protected resources and their associated buffers will be flagged or located with a Global Positioning System (GPS) prior to maintenance operations;
- Hand-cutting will be the preferred method of vegetation maintenance within buffers and sensitive areas, where reasonable and practical;
- Equipment access through wetlands or over streams will be avoided as much as practicable by utilizing existing public or private access roads, with landowner approval where required;
- Equipment access in upland areas with saturated soils will be minimized to the extent practicable to avoid rutting or other ground disturbance;
- Significant damage to wetland or stream bank vegetation, if any, will be repaired following completion of maintenance activities in the area; and
- Areas of significant soil disturbance will be stabilized and reseeded following completion of maintenance activity in the area.

Vegetation Maintenance Methods

Mechanical Methods

During routine vegetation maintenance after construction, mechanical methods of maintaining the height of vegetation on the ROW will consist primarily of cutting with hand tools, with occasional use of chainsaws and limited use of motorized equipment in areas directly accessible from public or private access roads.

Maintenance procedures will be to cut all capable species and any dead or hazard trees at ground level except in designated buffer zones, as described below. Large vegetation cut during routine maintenance will be handled in accordance with the Maine Slash Law.

Herbicide Application

Herbicide application will be used in conjunction with the mechanical methods of vegetation maintenance. The herbicide application program is consistent with most New England utilities and consists of direct application to targeted species and specimens along the ROW with a low-volume foliar herbicide or application of herbicides to cut stumps and surfaces of larger trees. Direct application to individual plant species, as opposed to a broadcast spray, will control only the targeted woody vegetation allowing low-growing plant communities (the desired shrub and herbaceous species) to thrive. Selective herbicides will also be used to minimize the impacts to non-target species. Aerial application will not be used. Only herbicides which are registered with and approved by the U.S. Environmental Protection Agency (EPA-approved) and registered with the Maine Board of Pesticides Control (BPC) will be used.[4]

4 12 MRSA §9331 et. Seq.

Herbicide applications will likely begin the first year after construction is completed to gain control of vegetation growth. When control is achieved, treatment will typically occur on a 4-year cycle or as needed. By using selective herbicides and a variety of application methods, vegetation along the ROW will eventually consist of a dense, low-growing plant community that will discourage the establishment of tree species. Therefore, fewer woody species will require treatment in future applications.

The following procedures will be implemented during herbicide applications:

- Herbicides will be used in strict accordance with the manufacturer's EPA-approved labeling and will not be applied directly to waterbodies or areas where surface water is present;
- Herbicides will not be applied within designated buffers or within 25 feet of rivers, streams, brooks, lakes, ponds, or wetlands that have water present at the surface at the time of the application;
- Herbicides will not be mixed, transferred or stored within 100 feet of any wetland or surface water, unless done on a public access road;
- Herbicides will not be mixed, transferred or stored within 100 feet of Significant Vernal Pool depressions;
- Herbicides will not be mixed, transferred or stored over mapped significant sand and gravel aquifers;
- Herbicides will not be applied, mixed, transferred or stored within 100 feet of any known private well or spring or within 200 feet of any known public water supply well;
- When herbicide applications are performed in wetlands without standing water, herbicides approved for use in wetland environments will be used;
- Herbicides will not be applied to any area when it is raining or when wind speed exceeds 15 miles per hour as measured on-site at the time of application. When wind speeds are below 3 miles per hour, applicators should be aware whether a temperature inversion is present, and should consult the herbicide label to determine whether application should proceed under these conditions;
- The foreman of each herbicide application crew will be licensed by the Maine BPC and will remain in eye contact and within earshot of all persons on his/her crew applying herbicides. At least one individual from any company applying herbicides must also hold a Commercial Master Applicator License issued by the BPC. This Master Applicator must have the ability to be on-site to assist persons applying herbicides within six hours driving time. If an out-of-state company is conducting the herbicide application, the company must have a Master Applicator in Maine during any application. Application of herbicides will be in accordance with applicable regulations promulgated under the Maine Pesticides Control Act, including those regulations to minimize drift, to maintain setbacks from sensitive areas during

application, and to maintain setbacks from surface waters during the storing/mixing/loading of herbicides; and

- Herbicides will typically be mixed in a truck-mounted tank that remains on public access roads. The application is done by personnel with low-volume, hand-pressurized (manual) backpacks with appropriate nozzles, to minimize drift who travel along the ROW by foot or by all-terrain vehicle and spot-treat target species and specimens.

The location of all streams, wetlands and mapped significant sand and gravel aquifers crossed by the transmission line ROW will be shown on the As-Built Plan & Profile drawings. GIS shapefiles will also be maintained with the location of these resources and will be provided to maintenance personnel. The presence of surface water will be determined prior to herbicide use in any wetland or waterbody. Crew leaders will assure that resources and buffers are clearly marked in the field, or that locations of resources and buffers are provided as GIS/GPS data prior to initiation of an herbicide application for clear identification by the applicators.

Vegetation Maintenance within Freshwater Wetlands

Wetlands were previously delineated along the Bridal Path ROW. Wetlands range in type from small, emergent wetlands formed in ruts from logging equipment to large forested wetland systems. No specific buffers are proposed for the wetlands identified within the ROW. Vegetation maintenance within freshwater wetlands with standing water will be conducted only by hand cutting with hand tools or chainsaws. Herbicide use is permitted in wetlands only when no standing water is present in the wetland at the time of the application. No herbicides will be stored, mixed, or transferred between containers, and no refueling of chain saws or other equipment will be allowed, within 100 feet of wetlands.

Vegetation Maintenance within Stream Buffers

A 25-foot buffer, as measured from the top of each bank, will be established for vegetation maintenance along streams within the ROW. Additional restrictions will be applied within 100 feet of streams. Special restrictions will apply within these stream buffers during vegetation maintenance. This section describes the restrictions related to vegetation cutting and maintenance that will apply within the stream buffers. The location of the streams crossed by the ROW will be shown on the As-Built Plan & Profile drawings. Vegetation maintenance procedures and restrictions that apply to typical ROW maintenance also apply within the stream buffers.

Additional Vegetation Maintenance Restrictions within Stream Buffers

The following additional restrictions apply to vegetation maintenance within stream buffers:

- Within the 25-foot stream buffer, only capable species and specimens greater than 8-10 feet tall will be removed, and resulting slash will be managed in accordance with Maine Slash Law. No other vegetation, other than dead or hazard trees, will be removed;

- Removal of capable species, dead or hazard trees within the 25-foot buffer will be accomplished by hand-cutting only. Use of mechanized harvesting equipment is prohibited;
- Herbicides will not be applied within the 25-foot stream buffer;
- Herbicides will not be stored, mixed or transferred between containers within 100 feet of streams, unless done so on a public access road;
- No refueling or maintenance of equipment, including chain saws, will occur within 100 feet of streams, unless done so on a public access road; and
- No accumulation of slash will be left within 25 feet of the edge of any stream.

These additional restrictions will allow for taller vegetation within the 25-foot stream buffer to provide additional shading and reduce the warming effect of direct sunlight (insolation). Low ground cover vegetation will also remain to filter any sediment in surface runoff. The restrictions are also intended to minimize ground disturbance and prevent or minimize the surface transport of herbicides and petroleum products to streams. These restrictions will allow the stream buffers to provide similar functions and values that they did prior to transmission line construction.

Vegetation Maintenance within Atlantic Salmon Stream Buffers

In 2009, the US Fish and Wildlife Service (USFWS) designated Critical Habitat for the freshwater geographic range occupied by the Gulf of Maine Distinct Population Segment of Atlantic salmon, including all perennial streams, rivers, and lake habitats connected to the marine environment (50 CFR 226: Federal Register, June 19, 2009). A portion of the Bridal Path Generator Lead Line, approximately 15.5 miles in Linneus, TA R2 WELS, Forkstown Twp, and Haynesville, is located within this designated critical habitat (HUC 10 0102000302 East Branch Mattawamkeag River and HUC 10 0102000301 West Branch Mattawamkeag River). The perennial streams located within this section of the generator lead line are considered critical habitat for Atlantic salmon.

A 25-foot buffer, as measured from the top of each bank, will be established for vegetation maintenance along perennial streams within the designated critical habitat. These streams will be subject to additional maintenance restrictions to enhance shading of the stream to the maximum extent allowed by the ISO-NE Vegetation Maintenance Standard. Vegetation maintenance within the Atlantic salmon stream buffers will be subject to the same procedures and prohibitions, as applicable, which are required in the typical ROW and for stream buffers.

Additional Vegetation Maintenance Restrictions within Atlantic Salmon Stream Buffers

The following additional restrictions apply to vegetation maintenance within Atlantic salmon stream buffers:

- Only capable species greater than 8-10 feet tall will be removed, and resulting slash will be managed in accordance with Maine Slash Law. No other vegetation other than dead or hazard trees will be removed;
- Herbicide will not be applied within the 25-foot Atlantic salmon stream buffer; and
- Crossing of Atlantic salmon streams with maintenance equipment will be avoided.

Vegetation Maintenance within Significant Vernal Pool Buffers

Vernal pool surveys were conducted during the spring of 2014. However, portions of the proposed ROW were surveyed outside of the appropriate season for identifying vernal pools (between July and December, 2014). Natural, potential vernal pools (PVP) identified outside of the appropriate survey period have been treated as Potential Significant Vernal Pools (PSVP). PSVPs are managed as Significant Vernal Pools (SVPs). Three SVPs and seven PSVPs were identified within the Bridal Path ROW. SVP and PSVP locations will be shown on the As-Built Plan & Profile drawings. Complete survey results can be found in Section 7, Exhibit 7B of Maine Department of Environmental Protection (MDEP) Natural Resource Protection Act (NRPA)/Site Location of Development combined application of the Number Nine Wind Farm.

Vegetated buffers of 100 feet, as measured from the edge of the pool depression, will be established for all SVPs and PSVPs crossed by the ROW. Vegetation maintenance within the SVP buffers will be subject to the same procedures and prohibitions, as applicable, which are required in the typical ROW.

Additional Vegetation Maintenance Restrictions within Significant Vernal Pool Buffers

The following additional restrictions apply to vegetation maintenance within SVP and PVSP buffers:

- Mechanized equipment will not be allowed within the vernal pool depression, unless the depression encompasses the entire width of the ROW. Mechanized equipment will only be allowed to cross vernal pool depressions during frozen or dry conditions or with the use of mats;
- Between April 1 and June 30, no vegetation maintenance using tracked or wheeled equipment will be performed within the 100-foot buffer. Maintenance will be performed using only hand tools during this period;
- Between April 1 and June 30, no vegetation maintenance will occur within 25 feet of any vernal pool depression; and
- No herbicide use is permitted within 25 feet of the SVP/PSVP pool depression.

Vegetation Maintenance within Inland Waterfowl and Wading Bird Habitat

Inland Waterfowl and Wading Bird Habitats (IWWH) are habitats mapped by the Maine Department of Inland Fisheries and Wildlife (MDIFW) that contain an inland wetland complex used by waterfowl and wading birds, plus a 250-foot nesting habitat area surrounding the wetland. The nesting habitat is considered to be part of the mapped IWWH. No additional buffers are proposed for IWWHs beyond this mapped habitat, and as such the vegetation maintenance restrictions apply to the mapped habitat only. The Bridal Path ROW crosses mapped IWWHs at 3 locations with 2 in TAR2 WELS and 1 in Forkstown Twp. IWWH areas are shown on the Natural Resource Maps provided in Section 7, Exhibit 7B, and on the final design plans of the Number Nine Wind Farm application. Vegetation maintenance within the IWWH will be subject to the same procedures and prohibitions, as applicable, which are required in the typical ROW and for stream buffers.

Additional Vegetation Maintenance Restrictions within Inland Waterfowl and Wading Bird Habitat

The following additional restrictions apply to vegetation maintenance within mapped IWWH:

- Between April 15 and July 15, use of motorized vehicles (e.g., all-terrain vehicles) and mechanized equipment (e.g., chain saws or brush cutters) within IWWH is prohibited. Use of non-mechanized hand tools is allowed during this time period; and
- No herbicide use is permitted within 25 feet of any wetland within the mapped IWWH.

Vegetation Maintenance within Mapped Deer Wintering Areas

Deer Wintering Areas (DWA) provide important refuge for white-tailed deer (*Odocoileus virginianus*) during the winter months in northern climates and are typically characterized by an extensive stand of mature softwood species with a dense forest canopy. The generator lead crosses 2 DWAs mapped by MDIFW in Haynesville (#100068 and #100075). During the winter of 2014, surveys of these two mapped DWAs in Haynesville were performed to assess use and habitat characteristics (see Section 7, Exhibit 7C-4). The surveys indicated that the two DWAs in Haynesville may be providing suitable DWA cover. In these two DWAs, development of the Bridal Path ROW has the potential to remove contiguous softwood shelter and/or fragment existing or potential travel corridors through the DWAs.

No additional vegetation maintenance restrictions are proposed within mapped DWAs, as all capable species must be removed from these and other areas within the ROW in order to comply with NERC Transmission Vegetation Management standards.

Vegetation Maintenance within Rare Plant Locations

Rare plants were found in several locations along the Bridal Path ROW. The rare plant species identified include: lesser yellow water buttercup (*Ranunculus gmelinii*) in wetlands HOUL_W037 and HOUL_W008 in Houlton, swamp fly-honeysuckle (*Lonicera oblongifolia*) in wetland HOUL_W010 in Houlton, and showy lady's-slipper (*Cypripedium reginae*) in wetland HOUL_W010 in Houlton.

In the areas surrounding these rare plant locations, vegetation maintenance of the ROW has the potential to impact the plants and/or alter their habitat. The following additional vegetative maintenance restrictions will minimize impacts to these rare plants. These additional restrictions will apply only to the demarcated locations of identified rare plants. No additional buffers will be established surrounding the rare plant locations. These restrictions are intended to maintain existing hydrology and limit soil disturbance within these rare plant locations.

Additional Vegetation Maintenance Restrictions within Rare Plant Locations

The following additional restrictions will apply to vegetation maintenance for the species listed above in the identified locations:

- All species will be cut by hand (chainsaws, hand saws or axes). No mechanized cutting equipment shall be used within these habitats;
- Unless rare plant locations encompasses the entire width of the ROW, mechanized equipment will only be allowed to cross rare plant locations during frozen conditions or with the use of mats; and
- No herbicide use is permitted within the demarcated rare plant locations.

Maintenance Procedures for Mapped Significant Sand and Gravel Aquifers

The ROW crosses mapped significant sand and gravel aquifers in seven locations: the mapped aquifers are #226 in Hammond Twp along B Stream, #1639 and #374 in Houlton east of McSheffrey Road, #425 and in Houlton along B Stream, #994 in Houlton near U.S. Route 2, #1735 in Linneus along Bither Brook, and #2236 in Forkstown Twp along East Branch Mattawamkeag River. These sections will be subject to the typical ROW maintenance procedures, except no herbicides may be mixed, transferred or stored over the mapped significant sand and gravel aquifers. The locations of mapped significant sand and gravel aquifers will be shown on the As-Built Plan & Profile drawings.

Locating and Marking Buffers and Habitats

A database will be maintained, including maps and GIS shapefiles, of the buffers, restricted habitats, and sensitive areas and their locations relative to the nearest structure (pole) or road

location. The distance and direction from the nearest structure to the sensitive area will be included with the name of the area and the structure number. All structures along the ROW will be numbered at the time of construction. The structure numbers will be included on the As-Built Plan & Profile drawings.

To aid in identifying restricted areas, buffers and restricted habitats may be located and demarcated in the field using brightly colored flagging or signage prior to the initiation of maintenance activities along the ROW. Alternatively, use of GIS data and GPS equipment may be used to provide accurate location of resources and associated buffers during maintenance activities. If desired, maintenance personnel may permanently demarcate restricted habitats to aid in long-term maintenance activities. Maintenance contractors working on the ROW will be given this VMP prior to receiving the required environmental training. Use of the VMP in conjunction with the As-Built Plan & Profile drawings will enable maintenance contractors to locate and mark restricted areas in the field.

Maintenance Personnel Training

Personnel who will conduct vegetation maintenance activities on the ROW will receive appropriate environmental training before being allowed access to the ROW. Maintenance personnel will be required to review this VMP prior to the training and before conducting any maintenance activities. The level of training will be dependent on the duties of the personnel. The training will be given prior to the start of maintenance activities. Replacement or new maintenance personnel that did not receive the initial training will receive similar training prior to performing any maintenance activities on the ROW.

The training session will consist of a review of the buffers and restricted habitats, the respective maintenance requirements and restrictions for each, and a review of how these areas and resources can be located in the field. Training will include familiarization with and use of GIS information and sensitive natural resource identification in conjunction with the contents of this VMP, as well as basic causes, preventive and remedial measures for contamination, and erosion and sedimentation of water resources. Training will also include a review of safety and the proper use of appropriate maintenance tools.

SUBSTANTIVE DIFFERENCES BETWEEN NUMBER NINE WIND FARM LLC VMP AND UTILITY VMP FOR THE BRIDAL PATH GENERATOR LEAD LINE

Resource	NNWF Proposal	Utility Proposal	Utility Rationale
All Areas	Reach-in cutting techniques for maintenance	No reach-in techniques proposed	Reach-in techniques are used only during initial clearing. No such equipment will be needed or used for ROW maintenance due to the smaller size of trees that would need to be cut.
Stream Buffers	No slash accumulation within 50 feet of streams	No slash accumulation within 25 feet of streams	Best utility practices require no slash to be left within 25 feet of streams, as approved by DEP and US Army Corps of Engineers on past projects.
Salmon Stream Buffers	No herbicide use within 100 feet of salmon streams	No herbicides within 25 feet of a salmon stream	The potential of drift or migration of herbicides beyond 25 feet is very low or non-existent, based on application method and controls. A 25-foot buffer is consistent with past transmission line projects in Maine that crossed salmon streams, as approved by MDEP and the Corps, and provides good protection to the resource.
Significant Vernal Pools	No herbicide use within 100 feet of a significant vernal pool	No herbicides within 25 feet of a significant vernal pool	The potential of drift or migration of herbicides beyond 25 feet is very low or non-existent, based on application method and controls. A 25-foot buffer is consistent with past transmission line projects in Maine that crossed vernal pools, as approved by MDEP and the Corps, and provides good protection to the resource.
Significant Vernal Pools	Remove only capable species taller than 8-10 feet within significant vernal pool buffers	All capable species will be removed within vernal pool buffers	This is consistent with past projects that crossed vernal pools, as approved by MDEP and the Corps. The removal of capable species enhances the reliability of the line while allowing shrubs to remain in place and thrive, thus providing vegetated cover for species using vernal pools. Capable species such as red maple and other similar tree species less than 8-10 feet tall would simply form tall, spindly stems that would potentially compete with shrubs for water and nutrients and provide little cover. The removal of capable species promotes a healthy, dense shrub and herbaceous layer.
Significant Vernal Pools	No mechanized equipment travel within significant vernal pool depression	Vernal pool depressions may be crossed if the depression encompasses the entire width of ROW, and if so only during frozen or dry conditions or using mats	Maintenance crews may require access across SVP depressions with mechanized equipment if the pool spans the entire width of ROW and there is no alternative access. Controls will be used to ensure crossing will be accomplished, if necessary, in a manner that protects the vernal pool depression. This proposal is consistent with past projects that crossed vernal pools, as approved by MDEP and the ACOE.

SUBSTANTIVE DIFFERENCES BETWEEN NUMBER NINE WIND FARM LLC VMP AND UTILITY VMP FOR THE BRIDAL PATH GENERATOR LEAD LINE

Resource	NNWF Proposal	Utility Proposal	Utility Rationale
Inland Waterfowl and Wading Bird Habitat (IWWH)	Remove only capable species greater than 8-10 feet tall in IWWHs	Remove all capable species within IWWHs	This is consistent with past projects that crossed IWWHs, as approved by MDEP and the ACOE. The removal of capable species enhances the reliability of the line while allowing shrubs to remain in place and thrive, thus providing a dense, vegetated cover for species nesting in IWWHs. Capable species such as red maple and other similar tree species less than 8-10 feet tall would simply form tall, spindly stems that would potentially compete with shrubs for water and nutrients and provide little nesting cover. The removal of capable species promotes a healthy, dense shrub and herbaceous layer.
Deer Wintering Areas	"Feather" vegetation on each side of the ROW edge where the ROW intersects with DWAs	Feathering not proposed	This would violate NERC standards. Furthermore, feathering requires topping of vegetation, and topping conflicts with best utility practices. Topping creates potential safety hazards for maintenance crews. Additionally, aerial equipment would be needed to feather, potentially increasing environmental impacts. In summary, feathering is dangerous and difficult if not impossible to achieve.
Rare Plant Locations	Cut at ground level all capable species that are greater than 8 – 10 feet tall and those species that will exceed 10 feet in height before the next vegetation management cycle	Remove all capable species	There are no biological benefits to allowing capable species less than 8-10 feet tall to remain in rare plant areas, and allowing this type of vegetation to grow conflicts with best utility practices. This proposal is consistent with past projects that crossed locations containing rare plants, as approved by MDEP and the ACOE.
Osprey	When removing nests, relocate nests when possible	Omitted, as osprey nest removals are not part of utility vegetation maintenance	Osprey nest removals are not part of utility vegetation maintenance. Nevertheless, active nests will only be disturbed if necessary, and only with a USFWS Depredation Permit; this permit does not require relocation. Inactive nests require no permit to remove, and there is no biological benefit to relocating an inactive nest. This proposal is consistent with past projects, as approved by MDEP and the ACOE and current best utility practices in Maine.

March 10, 2015

Mr. Kellen Ingalls
EDP Renewables North America LLC
Development – Eastern Region
541 Main Street, Suite B
Presque Isle, Maine 04769

Subject: **Number Nine Wind Farm**
Proposed Utility Invasive Species Management Plan for the "Bridal Path"

Dear Kellen:

Central Maine Power Company (CMP), Emera Maine, and MEPCO are submitting the attached Invasives Species Management Plan (ISMP) to be included as part of the Maine Department of Environmental Protection's (Department's) review of the Number Nine Wind Farm LLC (Number Nine) applications (Site Location of Development Law [Site Law], 38 M.R.S.A. §§481-490; DEP Regulations Chapters 371-377; Natural Resources Protection Act, 38 M.R.S.A. §§480-A to 480-BB; DEP Regulations Chapters 305-355 permits; and Water Quality Certification under §401 of the Clean Water Act [33 U.S.C. §1341]).

As discussed with Department staff, CMP and Emera Maine have requested that dual ISMPs be considered as part of the Department's review of the Number Nine applications. The generator lead line of the Number Nine project is divided into two segments: North Generator Lead Line (north of Houlton) and Bridal Path Generator Lead Line (Houlton to Haynesville). The following provides background information and the rationale for this submittal.

If approved by the Department, the attached ISMP would only be implemented on the Bridal Path Generator Lead Line segment of the Number Nine generator leads, and only if CMP, Emera Maine, MEPCO (a Maine Corporation owned by Central Maine Power Company and Emera Maine), or another entity formed by Emera Maine and CMP exercise an option to purchase this generator lead line segment. Number Nine would continue to implement their ISMP on the North Generator Lead Line. If the Bridal Path Generator Lead Line segment is purchased by CMP, Emera Maine or MEPCO, or another entity formed by Emera Maine and CMP, the purchasing entity would then submit an application to the Department for partial transfer of these permits. CMP and Emera Maine request that if the attached ISMP is approved under these conditions, the Department explicitly address this in the Order approving the Number Nine Wind Farm.

Background

Number Nine, CMP, Emera Maine, and MEPCO reached agreements earlier this year that will enable clean electricity from the Number Nine Wind Farm in northern Maine to reach southern Maine and New England. The focus of the agreements is the use by Number Nine Wind

LLC of a portion of a pre-existing transmission line right-of-way (ROW) corridor known as the 'Bridal Path' located between Houlton and Haynesville in Aroostook County. The Bridal Path ROW is an existing yet undeveloped (i.e., no constructed lines or ongoing maintenance) 225-foot wide ROW owned by Emera Maine. In Number Nine's application, the proposed 345 kV generator lead line in the Bridal Path is known as "Bridal Path Generator Lead Line". Under the agreements, Number Nine has the option to purchase an easement to a portion of the Bridal Path ROW to develop the Bridal Path Generator Lead Line, and Emera Maine, CMP and MEPCO will hold an option to purchase Number Nine's lead line segment in the Bridal Path ROW.

CMP and Emera Maine have implemented ISMPs over the past several years over hundreds of miles of transmission line corridors in Maine. Working in conjunction with staff from the Maine Natural Areas Program and the Department, both companies have developed and implemented successful programs to control invasive species. The attached ISMP is similar to plans submitted and accepted by the Department as part of recent project permit applications. CMP and Emera Maine believe that the attached ISMP will both effectively control the spread of invasive species, and will minimize costs to ratepayers. The proposed utility ISMP has been demonstrated to be protective of sensitive natural resources on other projects, as evidenced by the biological health of transmission line corridors in Maine.

It is our understanding that Number Nine is submitting an ISMP that, to our knowledge, is consistent with that of other wind power projects permitted by the Department. The enclosed utility ISMP is likewise consistent with that of other utility transmission line projects permitted by the Department in recent years.

As the enclosed ISMP is being submitted as part of the Number Nine application, CMP and Emera Maine respectfully request that this utility ISMP be reviewed concurrent with Number Nine's application, and specifically request that it be addressed in the Department's Order of the Number Nine Wind Farm, if the project is approved. Specifically, CMP and Emera Maine request that if ownership of the Bridal Path Generator Lead Line transfers to CMP, Emera Maine, MEPCO, or another entity formed by Emera Maine and CMP, the Order states that this utility ISMP has been approved as the ISMP for this segment of the generator lead line post-conveyance.

To facilitate the Department's review of this proposal, included with the utility ISMP is a table listing the substantive differences between Number Nine's proposed ISMP and the utility ISMP, and explaining the rationale for each difference.

CMP and Emera Maine appreciate the opportunity to file the enclosed ISMP as part of the Number Nine Wind Farm LLC application as well as your time in considering this important matter.

Douglas A. Herling
Vice President, Special Projects
Central Maine Power Company

Alan Richardson
Vice President, Transmission
Emera Maine

Signature page for Invasive Species Management Plan cover letter submitted to Kellen Ingalls and signed on March 10, 2015

Central Maine Power Company

Emera Maine

MEPCO

Bridal Path
Post-Construction
Invasive Species Management Plan

Prepared for:

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and

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March 2015

CENTRAL MAINE POWER

Emera Maine

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Introduction

This Invasive Species Management Plan (ISMP) describes the proposed procedures for managing invasive plant species along the Bridal Path Generator Lead Line right-of-way (ROW). The methods described and information contained in this ISMP allow it to function as a stand-alone document containing the known locations and proposed methods for monitoring and managing invasive species on the ROW.

Invasive Species Management Plan Goals and Objectives

As part of the Maine General Permit (GP) issued by the U.S. Army Corps of Engineers (Corps) in October 2010, an ISMP is recommended for all Category 2 and Individual Permit applications, unless otherwise directed by the Corps. Accordingly, these types of plans are now typically required for Corps permitting, and may include post-construction monitoring of invasives and implementation of appropriate invasive species control measures.

Additionally, the Maine Department of Environmental Protection (MDEP) has requested that an invasive species vegetation monitoring plan be included in addition to the vegetation maintenance plan.

The overall goal of this ISMP is to prepare a plan to prevent the introduction and spread of invasive plant species within the ROW as a result of Project construction. The ISMP also has the goal to develop a strategy that meets the goals and objectives of the Corps' Invasive Species Policy.[1] Ultimately, the Corps' goals are to "prevent introduction and establishment of invasive species to reduce their impact on the environment, economy, and health of the United States" and to employ an early detection and rapid response system in order to "develop and enhance the capacity to identify, report, and effectively respond to newly discovered/localized invasive species". While complete eradication of invasive species is not a stated or realistic goal, this ISMP is designed to limit the introduction and spread of these species as much as possible. The ISMP includes the following components:

- Identify locations within the ROW where invasive species currently exist in order to develop a baseline for future monitoring;
- Develop a post-construction plan for monitoring the status of invasive species within the survey area and coordination with the involved agencies regarding the results of the monitoring;
- Outline of the anticipated schedule and duration of monitoring; and

1 Department of the Army. U.S. Army Corps of Engineers. *U.S. Army Corps of Engineers Invasive Species Policy*. June 2, 2009. Available at: http://www.nae.usace.army.mil/Regulatory/ISP/policy.pdf

- Identify and recommend appropriate methodologies for controlling or limiting the spread of invasive species within the Project Area (e.g., mechanical cutting, herbicide application, or a combination thereof).

Invasive Species Background

Invasive plants are non-native species whose introduction to an area causes or is likely to cause environmental or economic harm. Invasive plants often lack natural predators and can successfully colonize and thrive beyond their natural ranges, often out-competing native plants. Generally, these species have competitive adaptations, aggressive reproductive strategies, and efficient dispersal methods. The spread of invasive plant species in both wetland and upland areas is a concern for both biological reasons (e.g., threaten global biodiversity, reduce wildlife habitat value) and cultural/economic reasons (e.g., adverse aesthetic effects, reduced recreational opportunities).

The Maine Natural Areas Program (MNAP) maintains a list of plant species currently considered invasive in Maine.[2] Table 1 presents the invasive species most likely to be present within the ROW based on a review of the MNAP list.

Table 1. Invasive Plant Species Likely to be Present within the Number Nine Wind Farm Project Area

Common Name	Scientific Name
Norway maple	*Acer platanoides*
Garlic mustard	*Alliaria petiolata*
Japanese barberry	*Berberis thunbergii*
Asiatic bittersweet	*Celastrus orbiculatus*
Black swallowwort	*Cynanchum louiseae*
Russian olive	*Elaeagnus angustifolia*
Autumn olive	*Elaeagnus umbellata*
Japanese knotweed	*Fallopia japonica*
Glossy buckthorn	*Frangula alnus*
Morrow's honeysuckle	*Lonicera morrowii*
Tatarian honeysuckle	*Lonicera tatarica*
Purple Loosestrife	*Lythrum salicaria*
Common reed	*Phragmites australis*
Wood bluegrass	*Poa nemoralis*
Common buckthorn	*Rhamnus cathartica*
Multiflora rose	*Rosa multiflora*

2 Available at: http://www.maine.gov/doc/nrimc/mnap/features/invsheets.htm

Existing Conditions

During 2014, Stantec performed wetland delineations, vernal pool surveys, and rare, threatened and endangered (RTE) plant surveys within the Project Area. The results of these surveys are available in Exhibit 7C of the MDEP Natural Resources Protection Act (NRPA) / Site Location of Development combined application for the Number Nine Wind Farm. During the course of each survey, Stantec documented incidental observations of invasive plant species. Table 2 provides the species observed and details about the population and general location.

Table 2. Invasive Plants Observed Along the Bridal Path Generator Lead Line ROW

ID	Species Name	Map Number	Town	Population Notes
8	Lonicera morrowii	5	Houlton	1 plant
9	Lonicera morrowii	5	Houlton	1 plant
10	Fallopia japonica	6	Houlton	1 patch
11	Fallopia japonica	6	Houlton	Multiple patches
12	Lonicera tatarica	6	Houlton	1 plant
13	Frangula alnus	6	Houlton	Evenly sparse plants
14	Rhamnus cathartica	6	Houlton	Evenly sparse plants
15	Lythrum salicaria	7	Houlton	1 plant
16	Lythrum salicaria	7	Houlton	Multiple patches
17	Lythrum salicaria	7	Hodgdon	Multiple patches
18	Lythrum salicaria	7	Hodgdon	Multiple patches
19	Lonicera morrowii	7	Hodgdon	1 patch
20	Lythrum salicaria	7	Hodgdon	Evenly sparse plants
21	Lonicera morrowii	7	Linneus	1 patch
22	Lonicera morrowii	7	Linneus	Evenly sparse plants
23	Lonicera morrowii	7	Linneus	1 plant
24	Celastrus orbiculatus	8	Linneus	1 patch
25	Lythrum salicaria	8	Linneus	1 plant
26	Lonicera morrowii	9	Forkstown Twp	1 plant
27	Fallopia japonica	9	Forkstown Twp	Evenly sparse plants

Invasive Species Monitoring Protocol

Goals and Objectives

This ISMP includes a plan to monitor and assess the status of invasive plant species within the Bridal Path Generator Lead Line ROW and to identify areas where invasive species control measures will be required. This monitoring will target known occurrences of invasive species identified in Table 2, along with potential new occurrences of the invasive species listed in Table 1, and will provide recommendations that will be used to select and implement appropriate control options for each invasive species location.

The objectives of the monitoring will be to:

- Update the status of invasive species within the ROW in order to target the areas where control measures may be required; and
- Define the types of control measures that are most appropriate for each invasive species location.

Methods

Prior to construction, a baseline invasive plant species survey will be conducted to establish the distribution and densities of invasive plant species on the proposed ROW. This survey will complement the incidental survey already accomplished, as tabulated above in Table 2. The monitoring will consist of field surveys of the Bridal Path ROW to document the distribution and densities of any invasive species that are present and to provide recommendations concerning control options. For each invasive species location, researchers will complete invasive species monitoring data forms, take photographs of the species and the surrounding landscape, and record the location of the invasive species using a Global Positioning System (GPS) receiver. Conditions that may influence the use of a particular type of invasive species control method will also be noted (e.g., wetlands, streams, private residences). Populations of invasive species identified immediately adjacent to the survey area will also be noted, although control strategies for these populations will not be developed. Field surveys will be conducted during the growing season when plant species are most easily identifiable. The monitoring effort will be scheduled to allow time for invasive species pre-construction treatments to be implemented during the same growing season. Invasive specimens will subsequently be removed in that same year either by mechanical removal of plants, application of herbicides, or both. At this time it is assumed that the pre-construction surveys and treatment will be conducted in 2015 as transmission line construction is scheduled to start in 2016.

Upon completion of construction, a qualified consultant will be retained to conduct the post-construction invasive species monitoring. Invasive species monitoring within the ROW will be conducted in the first full calendar year following the completion of construction. With construction currently scheduled to be completed in 2016, post-construction monitoring is anticipated to occur in 2017. If the distribution and/or densities of invasive species have significantly increased compared to pre-construction/pre-treatment levels, then treatment will be conducted during the same growing season as the monitoring (i.e., in 2017). If the post-construction distribution and/or densities of invasive species has not significantly increased compared to pre-construction/pre-treatment levels, no further monitoring or treatment is proposed. If treatment is conducted, as a result of post-construction distribution and/or densities being greater than pre-construction (baseline) distribution and/or densities, an additional one year of monitoring and, if warranted, treatment may be considered based on consultation with MDEP and the Corps. Thereafter, based on implementation of the treatments proposed above, any potential subsequent occurrence of invasive species in the project area would not be discernibly attributable to project construction.

Monitoring Report

The results of invasive species monitoring will be detailed in a report that will include a summary of the field survey methods and results, a table that identifies the invasive species in the ROW, a map showing the GPS location of each invasive species, copies of the monitoring forms, and representative photographs. Comparisons will be made as to whether invasive species distribution and/or densities are increasing, based on a comparison to the pre-construction data. The monitoring report will include recommendations regarding where invasive species control measures are warranted, the recommended type of control strategy, and the schedule for the implementation of control measures.

This monitoring report will be provided to the Corps and the MDEP by March 31 of the year following the year in which the monitoring was conducted (e.g., for monitoring conducted in the summer of 2017, the monitoring report will be submitted by March 31, 2018).

Implementation of invasive species control measures recommended in the report will be based on the results of the monitoring and will not require approval from the regulatory agencies. The application of control measures, specifically herbicide applications, will be performed pursuant to any standard permit and safety requirements governing such activities.

Invasive Species Control Strategies

Goals and Objectives

To develop an effective approach for controlling invasive species within the ROW, the following factors will be considered:

- The invasive species that are present and their density and distribution within the Project Area;
- The habitat characteristics of the wetlands and uplands in which the invasive species are located;
- Sensitive areas within the Project Area, including wetlands, streams, vernal pools, RTE species, protected wildlife habitat, and visual buffers;
- Adjacent land uses (e.g., residential development, commercial development, agricultural land, etc.), which can influence the choice of control strategies; and
- The cooperation of the landowners and the potential lack of land use control, depending on the provisions of easements across private properties.

As a result of these factors, invasive species control measures may not be practicable or highly effective in all areas within the ROW. Additionally, as stated above, complete eradication of invasive species is not a stated or realistic goal of the control program, given the aggressive nature of most invasive species once they become established. Rather, the goal of the control

efforts is to prevent the transmission line construction-related introduction of invasive plant species into new areas not previously colonized, and to prevent their increased abundance in areas previously colonized.

Types of Invasive Species Control

There are two primary types of invasive species control methods: mechanical and chemical. These control methods may be combined to provide a more effective control strategy.

Mechanical Control

Mechanical control measures such as digging, pulling, and cutting may be effective in controlling isolated invasive plants or small stands of plants. These methods are often necessary in sensitive natural resource areas such as wetlands, streams, protected wildlife habitats, etc., where chemical control is not permitted or ecologically appropriate. However, such techniques may be labor-intensive and may be impractical in areas with dense infestations of invasive species such as common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*), and Japanese knotweed (*Fallopia japonica*).

Chemical Control

Chemical control (i.e., herbicides) is the most common effective method used for controlling invasive species along ROWs. If used selectively and in limited areas (i.e., not in wetlands with standing water or in or adjacent to streams), herbicides can be applied in an environmentally sound manner to provide effective control. In addition, herbicide applications often provide the most cost-effective method for controlling dense infestations of invasive species. However, chemical control is not permitted in certain areas of the Project ROWs based on the conditions established in the Project's buffer plan (see Bridal Path Post-Construction Vegetation Maintenance Plan, under separate cover).

Control of Existing Invasive Species

Prior to construction of the transmission line, a qualified contractor will be retained to identify and perform an initial treatment on the known occurrences of invasive species. Large monotypic stands will be treated with an herbicide application using a low-pressure backpack sprayer if the contractor determines that this method can be safely performed without resulting in drift to non-target species and (if within a wetland) if there is no standing water in the wetland at the time of the treatment. Any herbicide applications in or near wetlands or waterbodies will be performed using an herbicide approved for wetland environments. Spot treatment of individuals or cut stems may also be performed.

After construction of the transmission line, careful observations will be made during first-year monitoring of the ROW at the location of the existing plant locations to determine if the initial control

efforts were successful in limiting the spread of these species. Additional control efforts may be considered subsequent to the monitoring period in order to limit their growth and spread of invasives.

Invasive Species Controls Implementation Schedule

After construction is completed, early treatment measures can prevent the spread of invasive species, particularly in areas where such species were not present prior to construction of the transmission line. As a result, invasive species controls will be implemented in the first full calendar year following the completion of construction. The schedule for the treatment will depend on the types of controls recommended and the species identified. For example, mechanical removal of certain species can be performed almost any time of the year when plant species are identifiable, while herbicide applications may require that work be done during the growing season to be most effective. For locations where invasive species controls are implemented, monitoring performed the following year will serve to assess the effectiveness of such measures. Monitoring may be performed in the year following initial monitoring and treatment to assess the effectiveness of such measures. No monitoring or treatment are proposed beyond the second year.

Anticipated Control Strategies

Specific control strategies will be developed based on the results of initial post-construction monitoring; however, it is anticipated that the most effective general approach for controlling invasive species within the ROW will be a combination of mechanical removal of plants, application of herbicides, or both.

The need for and types of chemical control of invasive species will be carefully evaluated, particularly in sensitive areas such as wetlands, streams, and significant vernal pools, natural resource buffers, and areas where the ROW is an easement and not owned in fee by the utility. Additionally, invasive species may be identified in areas that are outside of the ROW boundaries and, as such, the utility has no authority or obligation to attempt to control these invasive species.

Herbicide applications will be performed according to applicable laws and regulations developed by the Maine Board of Pesticides Control and the United States Environmental Protection Agency. The type of herbicide(s) to be used, method of application, and schedule for application will be determined based on the locations of the targeted areas and the particular invasive species to be controlled.

SUBSTANTIVE DIFFERENCES BETWEEN NUMBER NINE WIND FARM LLC ISMP AND UTILITY ISMP FOR THE BRIDAL PATH GENERATOR LEAD LINE

NNWF Proposal Section	NNWF Proposal	Utility Proposal	Utility Rationale
Invasive Species Monitoring Protocol	States that the ISMP maintains or enhances the functions and values of uplands and wetlands	Omitted this statement	The control or eradication of invasive species does not guarantee that functions and values of natural resources will be maintained or enhanced. Many variables other than invasive plants affect these functions and values.
Methods	Initially, one (1) year of monitoring and treatment, and option of two (2) additional years, depending on initial monitoring and treatment results	Utility ISMP proposes one year of post-construction monitoring and treatment	Pre-treating the ROW prior to construction coupled with one year of post-construction monitoring and treatment should effectively prevent the spread or introduction of invasive species on the ROW. This frequency of monitoring and treatment has been approved by MDEP and ACOE on past projects.
Types of Invasive Species Control	Discusses biological controls, such as beetles, as a means to control invasive plant species	Omitted this text from utility proposal	Introducing beetles or other organisms that utilize invasive plants as a sole or primary food source, is experimental and speculative as to its efficacy, and is beyond the scope of this plan. Extensive utility experience has demonstrated that herbicides are the most effective means of invasive plant control, and herbicides will be utilized to the extent necessary without violating buffers identified in the Bridal Path VMP. Mechanical control methods may also be utilized. Also, invasives management plans approved by MDEP and ACOE on previous projects have not proposed utilizing biological controls.
Control of Existing Invasive Species	Cut honeysuckle and buckthorn shrubs and Asiatic bittersweet vines at ground level and apply an appropriate herbicide to the cut stumps.	Apply herbicide to these invasives	Foliar application of herbicides is the most effective method to control invasives because this application is systemic, i.e., it kills both foliage and roots.
Control of Existing Invasive Species	Construction-related mitigation	Omitted construction related mitigation	Not applicable to this effort as the utilities will not be involved in project construction.