Section 10
Buffers

1.0 BUFFERS

Vegetated buffer strips are important for maintaining the water quality of surface waterbodies and for providing habitat and travel corridors for wildlife between habitats. Vegetated buffers provide an effective, attractive way to provide visual screening of certain forms of development. Buffers for the access road portion of the project are also important for stormwater management and phosphorus control.

The transmission line right-of-way (ROW) will be continuously vegetated with grass and shrubs, and several methods will be used to maintain vegetated buffers along that proposed corridor. Buffers around access roads and turbine pads will be preserved to provide stormwater and phosphorus treatment. Buffers for the project will include (i) no-cut buffers around roads; (ii) the typical ROW buffer created during ROW clearing and follow-up vegetation maintenance; (iii) standard waterbody buffers at streams and other waterbody crossings created by selective clearing during construction and reduced cutting of vegetation during maintenance and operation of the transmission line; (iv) Significant Vernal Pool buffers that involve selective clearing and minimal cutting of vegetation during construction and maintenance; (v) Atlantic salmon (*Salmo salar*) stream buffers at salmon habitat stream crossings that combine strategic placement of structures, selective clearing during construction, and minimal cutting of vegetation during maintenance and operation of the transmission line; (vi) buffers for mapped Inland Waterfowl and Wading Bird Habitat (IWWH) that will utilize similar measures as proposed for salmon stream buffers; and (vii) Deer Wintering Area (DWA) buffers that involve selective clearing and minimization efforts to create passage corridors through the ROW and minimal cutting of vegetation during operation and maintenance of the transmission line.

The desired objectives, characteristics, and methods of development and maintenance of these buffers are described in this section. The vegetation cutting practices used to preserve and maintain buffers include no cutting, limited and selective clearing, and normal mechanized clearing combined with the selective use of herbicides. The specific methods to be utilized along the ROW have been developed by the Applicant, Evergreen II, and have been tailored to meet the desired buffer objectives in a manner that will provide a clear, achievable set of standards for construction and maintenance personnel. The Applicant will maintain these buffers in accordance with the Post-Construction Vegetation Maintenance Plan (VMP), which is provided in Appendix 10-1 of this section.

Table 10-1 summarizes the eight basic types of buffers proposed for the Maine GenLead Project (project) and the clearing and maintenance practices that will be implemented to maintain each type of buffer. Additional details and variations are provided in the remainder of this section and in the VMP.

Table 10-1. Maine GenLead Project

Buffer Type	Location	Buffer Width	Clearing During Construction	Cutting During Maintenance And Operation[1]	Pole Placement	Herbicide Use
Access Roads	Project access points	Variable buffer outside of disturbed area and as depicted on the site plans	None in the buffer area	As provided in stormwater plan	Not allowed	Not allowed
Typical transmission line ROW	All areas not otherwise restricted	Not applicable	Cut at ground level all vegetation that is greater than 2 inches dbh[1,2]; remove or top all other vegetation that is 8-10 feet or taller	Cut at ground level all capable species that are 8-10 feet or taller; top all other vegetation that is 8-10 feet or taller	Standard	Allowed
Standard Streams	All areas not otherwise restricted	25 feet on each side of waterbodies	Cut at ground level all capable species that are 8-10 feet or taller; no other vegetation is cut. Limited clearing within 100 feet of stream.	Cut at ground level all species that are 8-10 feet or taller; no other vegetation is cut	Not allowed	Not Allowed
Significant Vernal Pools	As noted on plan and profile	100 feet around the perimeter of SVPs within the ROW	Cut at ground level all capable species that are 8-10 feet or taller.	Cut at ground level all capable species that are 8-10 feet or taller.	Avoid and minimize impacts; no poles in any vernal pools	Not Allowed in any vernal pools
Salmon Habitat Stream Buffers	ASC[3] Special Concern Salmon Habitat Streams	100 feet on each side of streams	Top[4] or remove all capable species that could grow to within 15 feet of a conductor in the next 3-4 years; no other vegetation is cut	Top[4] or remove all capable species that could grow to within 15 feet of a conductor in the next 3-4 years; no other vegetation is cut	place as close as possible to increase height of buffer	Not Allowed
Inland Waterfowl and Wading Bird Habitat	As noted on plan and profile	Within mapped habitat only	Top or remove all capable species that could grow to within 15 feet of a conductor in the next 3-4 years; no other vegetation is cut; if possible, 2-3 snags per 500 feet of corridor will be left to provide nesting habitat	Top or remove all capable species that could grow to within 15 feet of a conductor in the next 3-4 years; no other vegetation is cut	Avoid and minimize impacts; locate poles in upland buffer where possible	Not Allowed

Buffer Type	Location	Buffer Width	Clearing During Construction	Cutting During Maintenance And Operation[1]	Pole Placement	Herbicide Use
Deer Wintering Areas	Moderate and High Value DWAs, as noted on plan and profile	Within mapped habitat only	Top or remove all capable species that could grow to within 15 feet of a conductor in the next 3-4 years; near pole locations, retain conifers to the maximum extent possible	Top or remove all capable species that could grow to within 15 feet of a conductor in the next 3-4 years; no other vegetation is cut. Increased vegetation height in four specified locations.	Avoid and minimize impacts	Not Allowed
Rare Plant Locations	As noted on plan and profile	Location of rare plant only	Cut at ground level all capable species within the demarcated habitat that are 8-10 feet or taller; no other vegetation is cut; avoid and minimize disturbance to flagged rare plants	Cut at ground level all capable species that are 8-10 feet or taller; no other vegetation is cut; avoid and minimize disturbance to flagged rare plants	Not allowed within demarcated habitat	Not Allowed

[1] dead or danger tees are removed at any time
[2] dbh = diameter at breast height
[3] ASC = Atlantic Salmon Commission
[4] Cut at ground level if topping the tree will not leave sufficient foliage to sustain the tree

1.1 BASIS FOR THE APPLICANT'S BUFFER DESIGNS

Many factors were taken into consideration to determine the number, size, location, and construction and maintenance restrictions associated with the various types of buffers proposed for the project. Maine GenLead, LLC has drawn on its considerable experience with construction and maintenance of transmission line projects and blended that with more recent buffer proposals, Maine Department of Environmental Protection (MDEP) regulatory authority, ROW maintenance guidelines, and its consultations with resource and regulatory agencies and boards. During development of the proposed buffers and associated vegetation maintenance for the Project, seven items were identified as critical factors that must be incorporated. They are:

- The desire to use vegetated buffers as part of stormwater and phosphorus control;
- The requirement to successfully conduct the initial clearing of the ROW within the parameters set forth in the application and institute the vegetation maintenance requirements;
- The responsibility to comply with the ISO-NE Vegetation Maintenance Standard and to provide sufficient, dependable electric power to its customers;
- The scientific objectives and public policy goals of protecting and preserving natural resources and the natural environment;
- The state of ROW construction and maintenance practices conducted by the Applicant and throughout the industry;
- Recent proposals for other transmission line projects; and
- The Applicant’s commitment to environmentally sensitive development.

These seven factors were taken into consideration to design buffers that balance the operational needs of the Project with environmental benefits of riparian buffers. Maine GenLead, LLC believes these buffers combine the best features of successful, existing practices with new ideas and more focused resource concerns while providing procedures and restrictions that are realistic to implement in the field. Maine GenLead, LLC believes that the buffers and the VMP proposed for the project also respond to concerns expressed by the MDEP regarding the feasibility of and practical barriers to implementing complicated, continually varying vegetative buffers.

2.0 ACCESS ROAD BUFFERS

Access for transmission line construction will be accomplished using existing roads where possible to minimize impact and reduce additional clearing. See Section 12, Stormwater Management, for additional buffering capacity information. These buffers are located in the areas depicted on the project drawings.

3.0 TYPICAL TRANSMISSION LINE BUFFERS

The transmission line requires cutting vegetation in order to meet ISO-NE safety standards. Buffers for the transmission line are designed to provide for that cutting while also maximizing protection of the resources encountered within the ROW.

The Applicant's typical ROW construction and maintenance procedures require the retention of low ground cover to the maximum extent practicable during construction, immediate restoration and stabilization of areas affected by construction, and ongoing maintenance activities that promote the long-term growth of diverse, healthy, low vegetation. This results in a utility corridor that provides excellent cover for small animals and birds and significant browse habitat for larger mammals. In addition, it prevents soil erosion and the resultant sedimentation of water and wetland resources.

3.1 TYPICAL ROW BUFFER CLEARING PROCEDURES

Prior to any clearing, all resources and their buffers will be flagged in the field in order to identify these resources for the clearing crews. Additionally, clearing of the resources and buffers will be performed under frozen ground conditions whenever practicable. If clearing under frozen ground conditions is not practicable, all methods to reduce ground disturbance, erosion, and sedimentation will be employed. Specific measures within each resource buffer are detailed below.

Prior to construction, crews with whole-tree harvesting machines will first ground-cut vegetation equal to or greater than two inches diameter-at-breast height. Remaining smaller vegetation will be removed or topped 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 proposed power lines or cause an arc if they fall (i.e., danger trees) will also be removed. Large vegetation cut during initial clearing will be chipped on site or removed, in accordance with the Maine Slash Law.

4.0 STANDARD STREAM BUFFERS

A minimum 25-foot buffer, as measured from the top of bank on each side, will be established for the waterbodies (regulated streams) crossed by the transmission line and those adjacent to new access roads. Water bodies crossed by the project range from large river systems to small stream segments that are disconnected from larger systems. See Section 7, Appendix 7-1 for detailed locations.

To minimize soil disturbance adjacent to waterbodies, the transmission line has been designed to avoid the placement of structures within waterbody buffers. Additional procedures and restrictions will apply within the waterbody buffers during construction and follow-up vegetation maintenance to further protect waterbodies from sedimentation and otherwise minimize any adverse project impacts.

Waterbody or riparian buffers are typically designed to provide one or more of the following functions:

- Prevent soil erosion and the resultant sedimentation of surface waters;
- Slow the velocity, increase the infiltration, and otherwise remove sediment and other contaminants in stormwater runoff before it enters surface waters;
- Reduce accessibility of all-terrain vehicle users to streams;
- Provide shade to reduce the warming effect of sunlight (insolation) on water temperature;
- Provide cover for wildlife when accessing waterbodies and traveling across the ROW; and
- Provide visual screens between development and recreational users of a waterbody.

As described in the previous section and in more detail in Section 14, Basic Standards, which includes Erosion and Sedimentation Control, nearly the entire transmission line ROW will remain vegetated with low scrub-shrub and other understory species during construction. Ground disturbance will occur only in localized structure locations or equipment travel lanes. Necessary erosion and sedimentation control measures will be installed and maintained throughout construction to prevent adverse impacts to waterbodies and other resources. During initial clearing and vegetation maintenance in these 25-foot waterbody buffers, the removal of vegetation will be done by hand-cutting or by traveling or reaching into the buffer using low ground pressure mechanized harvesting equipment. During clearing operations, mobile equipment will only be allowed inside the buffer on timber mats, or will be monitored carefully to ensure minimal disturbance/rutting. The locations of temporary equipment crossings will be reviewed and approved by an environmental inspection system before equipment bridges are installed. The type and location of associated erosion and sedimentation controls will be established at that time. Equipment crossings will span the waterbody.

Following completion of construction in an area, any temporarily disturbed ground will be restored to original contours and stabilized with permanent seeding. Follow-up vegetation maintenance practices will encourage the growth of dense, low ground cover and shrub species. The use of herbicides is prohibited within stream buffers and within 25 feet of any wetlands with water showing at the surface. In addition, no refueling or maintenance of equipment will be performed within waterbody buffer zones.

A minimum 25-foot buffer, where removal of vegetation is further restricted as described below, will protect waterbodies crossed by the transmission line from adverse effects from sedimentation and contaminated runoff. Generally, the conversion of forest cover to a scrub-shrub or early successional cover type within a transmission line ROW will improve the ability of the land to absorb runoff due to the increased density of the root mass and near-ground leaf and stem material associated with the resultant vegetative cover. In addition, the proposed buffers are consistent with Maine Department of Inland Fisheries and Wildlife (MDIFW) recommendations to protect waterbodies from sedimentation and surface runoff.

In some locations, due to the characteristics of the crossing, wider buffers may be allowed without presenting undue difficulty to vegetation maintenance crews or the potential for increased environmental damage in order to maintain the buffer. In general, buffer widths of 25 feet work well because large trees within the buffer can typically be removed with a feller-buncher or similar mobile harvesting equipment. Such equipment can many times, based on existing terrain and size of the tree, reach into the area and cut and remove a tree without having to travel a significant distance into the buffer and without dragging the harvested tree out of the area. Tree removal becomes more difficult as buffer widths increase beyond approximately 25 feet unless additional access for mobilized tree-clearing equipment is allowed. While hand-cutting of large trees is an alternative, skidding a large tree from more than 25 feet away typically increases the potential for significant soil disturbance, as well as increases the likelihood of damage to remaining vegetation. In short, wider construction buffers do not necessarily minimize the potential for environmental impacts.

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 two 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] Nevertheless, Sections 4.2 and 4.3 below describe the restrictions related to vegetation cutting and maintenance that the Applicant will follow to allow for taller vegetation within riparian buffers. Taller vegetation will provide additional shading of streams and reduce the potential warming effect of direct sunlight. The taller vegetation will also provide additional cover for birds and animals accessing streams and crossing the ROW, and will provide some visual screening. As a result, the waterbody buffers will continue to function in a similar manner as before construction.

4.1 Structure Placement

To maintain the integrity and maximize the environmental benefits of the riparian buffers, no permanent structures will be located within 25 feet of any stream, and the number of structures that must be placed within 100 feet of a waterbody is limited to the maximum extent practicable.

4.2 Standard Stream Buffer Clearing Procedures

Tree cutting in riparian buffer zones will be limited. Prior to transmission line construction, only capable species greater than 8 to 10 feet tall will be removed. No other vegetation, other than dead or danger trees, will be removed, and impacts to shrub and herbaceous vegetation will be minimized. Within the 25-foot buffers, capable species will be removed by hand-cutting or by traveling/reaching into the buffer zone with low ground pressure (tracked) tree harvesting equipment. When possible, clearing within the stream buffers will take place during frozen ground conditions to minimize disturbance. No slash will be accumulated within 50 feet of the edge of the stream.

Temporary erosion and sedimentation control measures will be implemented along the transmission line. Ground disturbance caused by the use of harvesting equipment will be repaired by returning the ground to its original contour, as needed, and seeding and mulching any bare ground.

[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.

4.3 STANDARD STREAM BUFFER MAINTENANCE RESTRICTIONS

Vegetation maintenance within stream buffers is typically conducted on a three or four-year cycle, depending on growth and vegetation. Consistent with clearing practices for construction, only capable species greater than 8 to 10 feet tall will be removed. Removal will be by hand-cutting only, with limited use of motorized equipment in areas that are directly accessible from public or private access roads or from the middle access way established during initial clearing. No herbicides will be used, stored, mixed, or transferred between containers within the stream buffer areas, and no refueling of chain saws or other equipment will be allowed.

Appendix 10-1, Figure 1 illustrates vegetation clearing and maintenance practices within standard waterbody buffer zones. It is important to note that once the capable species (e.g., quaking aspen [*Populus tremuloides*], gray birch [*Betula populifolia*], balsam fir [*Abies balsamea*], white pine [*Pinus strobus*], and red maple [*Acer rubrum*]) are removed, the "desirable species" that will persist and be maintained in the buffers will consist primarily of shrubs (e.g., arrowwood [*Viburnum dentatum*], highbush blueberry [*Vaccinium corymbosum*], speckled alder [*Alnus incana*], and winterberry [*Ilex verticillata*]), grasses, sedges (e.g., *Carex* sp.), and rushes (e.g. *Juncus* sp.). The desirable species will be allowed to grow at their naturally occurring rate and height. Enhancement of the density and vigor of this vegetation will be achieved through the removal of taller, competing species. Additional restrictions on vegetation maintenance will provide still taller vegetation in designated salmon habitat stream buffers, as described in Section 6.2 through 6.3, to further enhance shading capacity.

The waterbody crossing table, provided as Table 1 in Section 3.1 of the VMP, includes the names and locations of waterbodies crossed by the 115-kilovolt transmission line.

5.0 SIGNIFICANT VERNAL POOL BUFFERS

A minimum 100-foot vegetated buffer, as measured from the edge of the vernal pool depression, will be established for all Significant Vernal Pools crossed by the transmission line.

Due to the limited reach of mobilized tree harvesting equipment (e.g., feller-bunchers or mechanical harvesters) access ways may be needed within the 100-foot 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 mechanized equipment will enter/exit the buffer in a manner to minimize disturbance. Mats will be utilized if necessary to prevent excessive rutting or soil displacement. No equipment travel will be permitted within the Significant Vernal Pool depression. Large trees will be cut and carefully removed from the buffer area. No slash will be accumulated within 50 feet of the edge of the depression.

Temporary erosion and sedimentation control measures will be implemented along the access ways. Consistent with the practices along the entire transmission line, ground disturbance caused by the use of harvesting equipment will be repaired by returning the ground to its original contour, as needed, and seeding and mulching any bare ground.

As previously discussed, herbicide use within this 100-foot buffer is prohibited. Prior to construction, only capable species greater than 8 to 10 feet tall will be removed. No other vegetation, other than dead or danger trees, will be removed. In addition, no refueling or maintenance of equipment, including chain saws, will be performed within vernal pool buffer zones.

Similar to maintenance operations for stream buffers, only capable species greater than 8 to 10 feet tall will be removed during routine maintenance of the ROW corridor. Removal will be by hand-cutting only, with limited use of motorized equipment in areas that are directly accessible from public or private access roads or from the middle access way established during initial clearing. No herbicides will be used, stored, mixed, or transferred between containers within the vernal pool buffer areas, and no refueling of

chain saws or other equipment will be allowed.

Clearing the ROW between April 1 and June 30 will not be conducted with wheeled or tracked equipment within the 250-foot critical terrestrial habitat of Significant Vernal Pools. Only hand tools will be utilized. Additionally, no clearing will occur within 25 feet of Significant Vernal Pool during this time period.

6.0 SALMON HABITAT STREAM BUFFERS

In 2009, Critical Habitat was designated for the freshwater geographic range occupied by the Gulf of Maine Distinct Population Segment (GOM DPS) of Atlantic salmon, including all perennial stream, river, and lake habitats connected to the marine environment (50CFR226: Federal Register, June 19, 2009). The Project spans 6 different HUC-10 watersheds that are proposed for listing as critical habitat for salmon under the Endangered Species Act. The HUC-10 watersheds crossed by the Project include the East Branch of the Mattawamkeag (#0102000302), West Branch of the Mattawamkeag River (#0102000301), 2 units of the Mattawamkeag River (#'s 0102000303 and 010200305), Penobscot River at Mattawamkeag (#0102000501), and Penobscot River at West Enfield (#0102000502). The Applicant has identified additional construction design criteria and further vegetation maintenance restrictions that will provide additional shading of perennial waterbodies across the entirety of the line to the maximum extent allowed by the ISO-NE Vegetation Maintenance Standard. Therefore, a minimum 100-foot vegetated buffer, as measured from the edge of the stream on each side, will be established for salmon habitat streams within the transmission line ROW.

6.1 SALMON HABITAT STREAM STRUCTURE PLACEMENT

The maximum height of vegetation within the ROW is a function of conductor height. The conductors are at their highest closest to a structure, and they are at a low point midway between structures. Accordingly, the Applicant has endeavored to locate structures as close to the edge of the salmon habitat stream buffers as possible to create a conductor height that will allow for higher vegetation. This will result in taller vegetation that provides maximum shading of the salmon habitat streams. The extra shading that results from adjusting pole locations or heights is proposed because these streams were identified during agency consultations as the most critical in terms of promoting potential habitat for the threatened Atlantic salmon. The additional vegetation height could also enhance shelter for wildlife, although this is not considered a primary objective for these predominantly small streams.

The combination of closer structures and maximum allowable vegetation height within 100 feet of each bank at the salmon habitat streams will provide vegetation that ranges from approximately 20 to 30 feet tall, on average, over the course of a routine maintenance cycle. Maintaining vegetation within the range of heights indicated will minimize the potential for warming of water temperatures that might otherwise result from removal of existing vegetation. As discussed in greater detail in Section 7, Wetlands, Wildlife and Fisheries, consultations with fishery management agencies has indicated concurrence with this mitigation proposal.

6.2 SALMON HABITAT STREAM BUFFER CLEARING PROCEDURES

During initial clearing activity prior to line construction, only those trees capable of growing to a height within the minimum ISO-NE Vegetation Maintenance Standard of 15 feet from a conductor within the next 3 to 4 years will be topped or removed within the 100-foot buffer. Topping of trees is the preferred method of vegetation maintenance, unless the tree is dead or dying, in which case topping will leave insufficient vegetation to sustain the tree. No other vegetation, other than dead or danger trees, will be removed. Removal of capable species will be by hand-cutting or with low ground pressure tree harvesting equipment working from inside the buffer. 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 salmon stream buffer zones.

6.3 SALMON HABITAT STREAM BUFFER MAINTENANCE RESTRICTIONS

The vegetation maintenance procedures and restrictions within salmon stream buffers are the same as those that apply during initial clearing, with limited use of motorized equipment in areas that are directly accessible from public or private access roads. Appendix 10-1, Figures 2 and 3 illustrate vegetation clearing and maintenance practices within salmon stream buffer zones.

7.0 INLAND WATERFOWL AND WADING BIRD HABITAT BUFFERS

The proposed 115-kilovolt transmission line project crosses mapped IWWH at 13 locations along the route. These crossings are located in the following towns: Oakfield, 3 in Glenwood Plantation, North Yarmouth Academy Grant, Macwahoc Plantation, Molunkus Township, Woodville, and 5 in Chester. These IWWH areas will also be shown on the As-Built Plan and Profile drawings. The Applicant has identified additional construction design criteria and further vegetative maintenance restrictions that will minimize impacts to the mapped habitat to the maximum extent allowed by the ISO-NE Vegetation Maintenance Standard.

7.1 Inland Waterfowl and Wading Bird Habitat Clearing and Construction Procedures

During initial clearing activity prior to line construction, only those trees capable of growing to a height within the minimum ISO-NE Vegetation Maintenance Standard of 15 feet from a conductor within the next 3 to 4 years will be topped or removed. Topping of trees is the preferred method of vegetation maintenance, unless the tree is dead or dying, in which case topping will leave insufficient vegetation to sustain the tree. No other vegetation, other than dead or danger trees, will be removed. 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 refueling or maintenance of equipment, including chain saws, will be performed within the IWWH.

Where possible, the applicant will leave two to three snags per approximately 500 linear feet of corridor to provide nesting habitat for waterfowl. Snags will consist of naturally occurring dead or dying trees or will be created by topping the largest diameter capable species available in the stand to the maximum height allowable under ISO-NE standards. Snags will only be left or created if they do not present a safety hazard to operation of the transmission line.

Initial ROW clearing will be performed under frozen ground conditions whenever practical. No clearing within a mapped IWWH will occur within the peak waterfowl and wading bird nesting season (April 15 to July 15) unless otherwise approved in consultation with MDEP and MDIFW. Additionally, no accumulation of slash will be left within 50 feet of the edge of the mapped habitat.

The applicant will install bird diverters or aviation marker balls according to manufacturer's guidelines and applicable transmission line codes where the transmission line crosses mapped IWWH in order to minimize the risk of bird collisions. Additionally, the applicant will locate transmission line structures in the upland buffer portion of the habitat to the maximum extent practicable.

7.2 Inland Waterfowl Wading Bird Habitat Maintenance Procedures

The vegetation maintenance procedures and restrictions within mapped IWWH are the same as those that apply during initial clearing, including avoiding maintenance procedures between April 15 and July 15. Appendix 10-1 details the maintenance practices within IWWH.

8.0 DEER WINTERING AREAS

The Project corridor intersects nine DWAs along the length of the proposed transmission line. Two are mapped by LURC as P-FW, three are mapped by IFW, and four are cooperative agreement areas. Surveys were performed by Stantec Consulting during 2009 and 2010 (see Section 7, Appendix 7-5). These surveys indicated that only three of these areas could be considered moderate or high value DWAs. In these areas, the proposed transmission line corridor has the potential to remove contiguous softwood shelter and/or fragment existing or potential travel corridors through the DWA. These three DWAs are #991502 in Macwahoc Plantation (cooperative), #992202 in Reed Plantation (North) (cooperative), and #100068 in T3R3 WELS (South) (LURC P-FW).

The Applicant met with MDIFW in 2011 to review the results of the surveys, and identified these three areas and one additional location (Reed Plantation # 992301 (South)(cooperative)), as areas where a

redesign of the project would help minimize impacts to the DWAs by maintaining travel corridors. The electrical design was reevaluated in each of these four locations and impacts minimized by relocating poles, changing poles from single poles to H-frames, and increasing pole heights, which minimizes clearing requirements and allows the retention of taller trees in the ROW.

8.1 Deer Wintering Area Clearing Procedures

During initial clearing activity prior to line construction, only those trees capable of growing to a height within 15 feet from a conductor within the next 3 to 4 years will be topped or removed. Topping of trees is the preferred method of vegetation maintenance, unless the tree is dead or dying, in which case topping will leave insufficient vegetation to sustain the tree. No other vegetation, other than dead or danger trees, will be removed. 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.

Particular efforts will be made to retain softwood species, especially near the pole locations, as these species are the primary components of a functioning DWA. As described above, the maximum height of vegetation within the ROW is a function of conductor height. The conductors are at their highest closest to a structure, and they are at a low point midway between structures. Accordingly, the Applicant will selectively clear deciduous, capable species near the poles, retaining the conifers, to allow for higher coniferous cover within 50 feet of each pole location in these areas. The minimal clearing around the pole will result in taller coniferous vegetation surrounding each pole location that will provide a winter travel corridor for deer across the cleared ROW. In addition, taller poles in the four DWA locations noted above will allow trees to remain to a height of 50 feet, or taller. Finally, the redesign to pull poles back from the adjacent waterbody where possible will further increase the width of the potential travel corridor. These periodic travel corridors will allow deer to cross the cleared ROW with greater ease and minimize impacts to the species. Despite these efforts, an approximately 16-foot wide access way will be entirely cleared near the pole in order to allow for construction.

8.2 Deer Wintering Area Vegetation Maintenance Procedures

The vegetation maintenance procedures and restrictions within mapped DWAs are the same as those that apply during initial clearing. Maintenance procedures will aim to established coniferous corridors around each pole location within the DWA. Appendix 10-1 details the maintenance practices that will be implemented within the DWA.

9.0 RARE PLANT LOCATIONS AND EXEMPLARY NATURAL COMMUNITIES

Rare plants are found in several locations along the length of the proposed transmission line, as identified by Stantec during rare plant surveys in 2009 and 2010. The rare plant species identified were located in Glenwood, and include showy lady's slipper (*Cypripedium reginae*) in wetlands GLE354 and GLE359, marsh valerian (*Valeriana uliginosa*) in wetland GLE359, swamp fly-honeysuckle (*Lonicera oblongifolia*) in wetlands GLE343, GLE350, GLE351, and GLE359, northern bog sedge (*Carex gynocrates*) in wetland GLE359, and dwarf yellow water crowfoot (*Ranunculus gmelinii*) in wetlands GLE354 and GLE359. In the areas surrounding these rare plant locations, vegetation clearing and maintenance of the proposed transmission line corridor has the potential to impact the plants and/or alter their habitat. The Applicant has identified additional construction criteria and further 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 standards is not a concern for these buffers. Refer to Section 9 of this application for additional information regarding the rare plant locations.

9.1 Rare Plant Location Clearing Procedures

Prior to initial clearing of the rare plant locations, a qualified botanist will demarcate the locations of the rare plants. This process will include flagging all individual plants of swamp fly-honeysuckle, the only

woody species of the documented rare plants in the Project area. In all plant locations, including the swamp fly-honeysuckle 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, all 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 should be cut by hand. 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.

9.2 Rare Plant Locations Vegetation Maintenance Procedures

The vegetation maintenance restrictions within and surrounding 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, and minimize impacts within the demarcated rare plant habitats. Appendix 10-1 details the vegetation maintenance practices that will be implemented in the rare plant locations.

10.0 POST–CONSTRUCTION ROW VEGETATION MAINTENANCE

Routine vegetation maintenance of the transmission line ROW will comply with the ISO New England ROW Vegetation Maintenance Standards (ISO-NE Vegetation Maintenance Standard)[2] to maintain the integrity and functionality of the line, 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. For example, power outages may occur if trees or other vegetation either come into contact with or get too close to the conductors. Insufficient separation between an object and the conductor can create an electric arc that can cause short circuits, as well as fires. Consistent with the ISO-NE operating procedures and to ensure safe, reliable operation of a transmission line, 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.

Inadequate tree trimming near transmission lines can cause power outages and thus diminish the reliability of power delivery to the customer. Therefore, it is incumbent upon the Applicant to adequately clear vegetation during construction and adopt vegetation maintenance practices to ensure that reliable power is delivered to the grid and ultimately supplied to consumers. There is also a need to maintain appropriate buffers that serve a range of purposes, including environmental preservation, protection of fisheries, and visual mitigation.

The Applicant's proposed buffer maintenance plan balances the need to maximize buffer width and vegetation height in those areas where doing so brings about significant environmental benefits, while considering the practical and operational limitations under which the Applicant operates and its mandate to provide reliable power.

10.1 VEGETATION MAINTENANCE PLAN

The Applicant has prepared a Transmission Line VMP to be a stand-alone document containing post-construction vegetation maintenance requirements related to the project. The VMP, provided in Appendix 10-1, contains detailed descriptions of the procedures and maintenance restrictions that apply to these buffers, as well as other protected areas, and the system that will be used to ensure that the specified

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

buffers and other resources are properly identified in the field and protected accordingly. The Applicant will implement the VMP prior to initial vegetation maintenance activity on the transmission line ROW and will continue to follow it during all subsequent vegetation maintenance action.

The Applicant has also prepared an Invasive Species Management Plan, Appendix 10-2, which is designed to address the anticipated procedures for controlling the spread of invasive species and enhancing the value of wetlands located within the transmission line ROW. The Invasive Species Management Plan contains detailed descriptions of the invasive species identified along the proposed transmission line and recommended control strategies.

Appendix 10-1
Post- Construction Vegetation Maintenance Plan

Maine GenLead Project
115-Kilovolt Transmission Line
Aroostook and Penobscot Counties, Maine

APPENDIX 10-1
POST-CONSTRUCTION
VEGETATION MAINTENANCE PLAN

Prepared for:

Maine GenLead, LLC

Prepared by:

Stantec Consulting

August 2010

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1.0 INTRODUCTION

Maine GenLead, LLC (Maine GenLead), has prepared this Post-Construction Vegetation Maintenance Plan (VMP) to be a stand-alone document containing all restrictive maintenance requirements for natural resources along the 115-kilovolt (kV) transmission line from the Oakfield Wind Project substation in Oakfield to an existing substation in Chester. The requirements set forth in the VMP, as proposed by Maine GenLead and incorporated into federal, state, and local permits for the project, apply to routine maintenance along the ROW and are not intended to apply to emergency maintenance and repair actions.

Throughout construction, numerous construction techniques and mitigation measures and restrictions will be implemented to minimize potential adverse effects on natural resources. To continue that effort, the goal of the VMP is to supply the Applicant's maintenance personnel and contractors with a single, cohesive set of vegetation maintenance specifications for the transmission line. The Applicant's personnel or their designated representatives will ensure that these specifications are followed by regularly inspecting all work and requiring corrective steps to be taken where necessary. 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 natural resources subject to restrictive maintenance requirements include:

- Wetlands and waterbodies;
- Designated perennial streams;
- Locations over significant sand and gravel aquifers;
- Designated moderate and high value Inland Waterfowl and Wading Bird Habitats (IWWH);
- Moderate and high value Deer Wintering Areas (DWA);
- Rare plant locations;
- Vernal Pools; and
- Osprey nests that are built on transmission line structures.

The remainder of the VMP is organized as follows:

- Section 2.0 summarizes the typical vegetation maintenance methods and procedures that will be utilized by the Applicant for the transmission line ROW;
- Section 3.0 describes the additional vegetation maintenance requirements and restrictions associated with all waterbodies crossed by the lines. Section 3.0 also includes a waterbody table to aid in locating these resources in the field;
- Section 4.0 describes the maintenance of salmon stream buffers;
- Section 5.0 sets forth the vegetation maintenance restrictions that pertain to designated IWWHs and identifies the locations of those areas;
- Section 6.0 describes the maintenance procedures to be followed in the vicinity of vernal pools;
- Section 7.0 sets forth the vegetation maintenance restrictions that pertain to designated DWAs;
- Section 8.0 details the vegetation maintenance restrictions that will be implemented surrounding mapped rare plant locations;
- Section 9.0 sets forth the vegetation maintenance restriction that pertains to significant sand and gravel aquifers located along the ROW (see Section 15, Appendix 15-1);
- Section 10.0 provides the procedures to be used for managing or removing osprey nests that are built on power line structures;
- Section 11.0 describes the system to be used for identifying restricted areas in the field while performing maintenance activities; and
- Section 12.0 summarizes the training requirements for the Applicant's ROW maintenance personnel and contractors.

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 TYPICAL ROW VEGETATION MAINTENANCE PROCEDURES

Routine vegetation maintenance of the transmission line is required to: 1) maintain the integrity and functionality of the line, 2) maintain access in case of emergency repairs, and 3) facilitate safety inspections. The objective of the Applicant's ROW management will, therefore, be to control large woody vegetative growth to ensure the integrity and safe operation of the transmission line, consistent with the ISO New England Vegetation Maintenance Standard (ISO-NE Vegetation Management Standard).[1] This will be accomplished by practicing Integrated Vegetation Management, 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.

To minimize any negative environmental impacts, vegetation will remain in place to the extent practicable. The removal of large trees will be done during initial ROW preparation prior to construction of the new transmission line. Follow-up maintenance activities during operation of the line require only the selective removal of "capable species," dead and "danger trees." Capable species are defined as 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 for a 115-kV transmission line requires that a minimum of 15 feet of separation be maintained between vegetation and the conductors.[2] 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 required ISO-NE clearance is typically achieved by removing all capable species and topping other vegetation exceeding 8 to 10 feet tall.

Once the vegetation in an area is brought under control (usually three to four years following construction), these practices will generally be carried out on four-year or five-year maintenance cycles depending on growth, weather, geographic location, and corridor width. Significant branches that overhang the ROW and any dead or damaged trees outside of the ROW that could contact the power lines or come within 15 feet of a conductor ("danger trees") may be removed as soon as they are identified. Figure 1 illustrates the results of typical vegetation clearing and maintenance to comply with the ISO-NE Vegetation Management Standard.

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

- All resources and their buffers will be flagged or located with a Global Positioning System prior to any maintenance operations;
- All areas of significant soil disturbance will be stabilized and reseeded immediately following completion of maintenance activity in the area;
- Equipment access through wetlands or over waterbodies will be avoided as much as practicable by utilizing existing public or private access roads, with landowner approval where required;
- Waterbodies will be protected during maintenance. Bridge mats, low ground pressure (tracked) vehicles, or other methods will be used to span waterbodies to prevent excessive rutting and disturbance;
- Construction mats or equivalent for equipment support will be used if saturated soils are present; and
- Rutting or significant damage to wetland or waterbody bank vegetation, if any, will be repaired

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

immediately following completion of maintenance activities in the area.

2.1 MECHANICAL TECHNIQUES

During routine vegetation maintenance after construction, the mechanical means of maintaining the height of vegetation on the ROW consists primarily of hand-cutting, with limited use of motorized equipment in areas that are directly accessible from public or private access roads.

The procedure will be to cut all capable species and any dead or danger trees at ground level except in waterbody buffer zones. All large vegetation cut during routine maintenance is removed, chipped or flailed on site or otherwise handled in accordance with the Maine Slash Law.

2.2 USE OF HERBICIDES

The Applicant's herbicide application program is consistent with most New England utilities and will be used in conjunction with the mechanical methods of vegetation maintenance. It consists of directional spraying on targeted species along the ROW with a low-volume foliar application. In addition, herbicides may be applied to cut stumps and surfaces of larger trees. The direct application to individual plant species, as opposed to a broadcast application, will control only the targeted woody vegetation, while leaving low-growing plant communities consisting of grasses, forbs, and shrubs 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 the Maine Board of Pesticides Control (BPC) will be used.

Typically, the ROW will receive herbicide treatment the year following construction and then again two to three years after to gain control of vegetation growth. When control is achieved, treatment occurs on the standard four-year to five-year cycle or as needed. By utilizing selective herbicides and application methods, the ROW will eventually become a dense, low-growing plant community and will aid to impede woody vegetation from being established. Therefore, fewer woody species will require treatment in future applications.

The following procedures will be implemented during all vegetation maintenance activities utilizing herbicides.

- Herbicides will be used in strict accordance with the manufacturer's EPA-approved labeling and will not be applied directly to water or areas where surface water is present.
- Herbicides will not be applied, mixed, transferred or stored within the designated buffers, or applied within 25 feet of streams or wetlands that have water present at the surface.
- Herbicides will not be applied, mixed, transferred or stored within 75 feet of vernal pool basins.
- Herbicides will not be applied, 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 well or spring or within 100 feet of a home or other human dwelling.
- Herbicides with a low potential for mobility and low persistence in the environment will be utilized in sensitive areas such as wetlands.
- 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.
- The foreman of every crew using herbicides 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 and must be in Maine during any application. Application of pesticides 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.
- The chemicals are typically mixed in a truck-mounted tank that stays on the access roads. The application is done by personnel with backpacks who travel along the ROW by all-terrain vehicle and spot-treat target species.
- Each target tree is sprayed just enough to wet the foliage while avoiding any dripping or run-off.

As mentioned previously, application of herbicides is prohibited within 25 feet of streams and wetlands that have water present at the surface. The location of all streams, wetlands and significant groundwater aquifers crossed by the transmission line will be shown on the As-Built Plan and Profile drawings. The presence of water on the surface 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 all resources and buffers are located, and properly delineated on the ground for clear identification by the applicators.

3.0 VEGETATION MAINTENANCE WITHIN STANDARD WATERBODY BUFFERS

A minimum 25-foot buffer, as measured from the top of bank on each side, will be established for all waterbodies crossed by the transmission line. Special procedures and restricted activities will apply within these waterbody buffers during construction and follow-up vegetation maintenance. Vegetation maintenance within waterbody buffers is typically conducted on a three-year or four-year cycle, depending on growth and vegetation. This section describes the restrictions related to vegetation cutting and maintenance that will apply within all standard waterbody buffers. Table 1, provided at the end of this section, includes the names, locations, and details of all streams crossed by the transmission line. The location of all waterbodies crossed by the line also will be shown on the As-Built Plan and Profile drawings.

It is important to note that the vegetation maintenance procedures and restrictions that apply to typical ROW maintenance (Section 2.0) also apply within the standard waterbody buffers. The applicable procedures and restrictions include the BPC restrictions, restoring and stabilizing disturbed soils, disposition of slash in accordance with the Maine Slash Law, ROW access, the restrictions on waterbody crossings by equipment within the ROW, and the use of construction mats, low ground pressure equipment, and/or other procedures related to work in wetlands.

3.1 ADDITIONAL VEGETATION MAINTENANCE RESTRICTIONS WITHIN STANDARD WATERBODY BUFFERS

The following additional restrictions apply to vegetation maintenance within standard waterbody buffers (25 feet for streams, 100 feet for Significant Vernal Pools).

- Prior to line construction and during vegetation maintenance after construction, only capable species vegetation greater than eight feet will be removed. No other vegetation, other than dead or danger trees, will be removed.
- Under most terrain conditions, removal of capable species, dead or danger trees will be accomplished by hand-cutting or by traveling into the buffer zone with low pressure tree harvesting equipment, and mats as necessary.
- No herbicides will be used, stored, mixed or transferred between containers within the buffer areas.
- No refueling or maintenance of equipment, including chain saws, will occur within the buffer areas.
- No accumulation of slash will be left within 50 feet of the edge of any waterbody.

The additional restrictions on vegetation maintenance within waterbody buffers will allow taller vegetation to provide additional shading of streams and reduce the warming effect of direct sunlight (insulation). Low ground cover will also remain to filter sediment in surface runoff. As a result, the buffers will continue to function in a similar manner as they did before construction. The restrictions are also intended to minimize ground disturbance and ensure that herbicides and petroleum products are not able to reach the

waterbody via surface runoff or groundwater transport.

Figure 1 also illustrates vegetation clearing and maintenance practice within standard waterbody buffer zones.

TABLE 1. STREAMS CROSSED BY THE MAINE GENLEAD PROJECT

Stream ID	Associated Wetland ID	Perennial or Intermittent	USGS Name	Crossing Width (feet)	Within Critical Habitat for Salmon?
STR01	CHE019, CHE020, CHE022	Perennial		3-8'	Yes
STR02	CHE022, CHE023	Perennial	Medunkeunk Stream	30-50'	Yes
STR03	CHE022, CHE023	Perennial	Medunkeunk Stream	30-50'	Yes
STR04	CHE058	Perennial		4-6'	Yes
STR05	CHE064	Perennial		2-4'	Yes
STR06	CHE068	Perennial	Ebhorse Stream	70-80'	Yes
STR07	WOO103	Perennial		3-5'	Yes
STR08	WOO139	Perennial	Eagle Stream	8-15'	Yes
STR09	WOO141	Perennial		4'	Yes
STR10	WOO153	Perennial	Penobscot River	250'	Yes
STR11	MAT156	Intermittent		1-2.5'	Yes
STR12	MAT159	Perennial		4.5'	Yes
STR13	MAT164, MAT165	Perennial	Mattaseunk Stream	20'	Yes
STR14	MOL173, MOL175, MOL176, MOL177	Perennial		18-22'	Yes
STR15	MOL187	Perennial		3-10'	Yes
STR16	MOL198	Perennial		2.5'	Yes
STR17	MOL198	Perennial		5'	Yes
STR18	MOL199	Intermittent		3-5'	Yes
STR19	-	Intermittent		2'	Yes
STR20	-	Intermittent		2'	Yes
STR21	MAC212	Intermittent		2'	Yes
STR22	MAC223	Perennial		4-6'	Yes
STR23	MAC223	Intermittent		3-5'	Yes
STR24	MAC230, MAC231	Perennial	Little Molunkus Stream	40'	Yes
STR25	-	Perennial	Molunkus Stream	100’	Yes

Stream ID	Associated Wetland ID	Perennial or Intermittent	USGS Name	Crossing Width (feet)	Within Critical Habitat for Salmon?
STR26	MAC245, MAC246, MAC247	Perennial	Arbo Brook	6-8'	Yes
STR27	MAC251, MAC252	Perennial		5-6'	Yes
STR28	MAC258, MAC259	Perennial	Macwahoc Stream	80 – 250'	Yes
STR29	NYA278, NYA279	Intermittent		2-3'	Yes
STR30	-	Perennial	Wytopitlock Stream	30-40'	Yes
STR31	REE302	Perennial		3-6'	Yes
STR32	REE316	Perennial		2-6'	Yes
STR33	REE320	Perennial		4-8'	Yes
STR35	GLE345, GLE346	Perennial	Battle Brook	18-24'	Yes
STR36	GLE359	Perennial	Alder Brook	22-26'	Yes
STR37	GLE359	Perennial		3.5'	Yes
STR38	-	Perennial	West Branch Mattawamkeag River	65'	Yes
STR39	T3R386	Perennial		6-8'	Yes
STR46	T3R395	Intermittent		2-3'	Yes
STR40	T3R399	Perennial	East Branch Mattawamkeag River	125'	Yes
STR41	T3R402	Perennial		6-8'	Yes
STR42	T3R403, T3R402	Perennial	Beaver Brook	25'	Yes
STR43	T3R403	Perennial		10'	Yes
STR44	LIN464	Intermittent		3'	Yes
STR45	LIN473	Intermittent		3-4'	Yes
STR46	-	Intermittent		2-3'	Yes

4.0 VEGETATION MAINTENANCE WITHIN SALMON STREAM BUFFERS

In 2009, Critical Habitat was designated for the freshwater geographic range occupied by the Gulf of Maine Distinct Population Segment (GOM DPS) of Atlantic salmon, including all perennial stream, river, and lake habitats connected to the marine environment (50CFR226: Federal Register, June 19, 2009). The Oakfield II Project also spans 6 different HUC-10 watersheds that are proposed for listing as critical habitat for salmon under the Endangered Species Act. The HUC-10 watersheds crossed by the Project include the East Branch of the Mattawamkeag (#0102000302), West Branch of the Mattawamkeag River (#0102000301), 2 units of the Mattawamkeag River (#'s 0102000303 and 010200305), Penobscot River at

Mattawamkeag (#0102000501), and Penobscot River at West Enfield (#0102000502).

4.1 SALMON HABITAT STREAM BUFFERS

The Applicant will establish a 100-foot buffer along those streams designated as providing critical habitat and these streams will be subject to additional maintenance restrictions to enhance the shading of these waterbodies to the maximum extent allowed by the ISO-NE Vegetation Maintenance Standard. Vegetation maintenance near the salmon habitat streams will be subject to the same procedures and prohibitions, as applicable, that are required in the typical ROW and for standard stream buffers, namely: BPC requirements, restoring and stabilizing disturbed soils, disposition of slash, ROW access constraints, the restrictions on stream crossings by equipment within the ROW, the use of construction mats and other procedures related to work in wetlands, the limited use of mechanized tree harvesting equipment, and the prohibition on the use, mixing, or transfer of herbicides and petroleum products within the buffer zone.

4.1.1 Additional Vegetation Maintenance Restrictions within Salmon Habitat Stream Buffers

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

- Only those trees capable of growing to a height within 15 feet of a conductor within the next 3 to 4 years will be topped or removed. No other vegetation other than dead or danger trees will be removed; and
- Tree topping is the preferred method of vegetation maintenance, unless the tree is dead or dying, or unless topping will leave insufficient vegetation to sustain the tree.

4.1.2 Structure Locations and Salmon Habitat Buffers

Structure locations will be sited as close to the edge of the salmon stream buffers as possible to create a conductor height that allows for higher vegetation requiring minimal trimming. The closer the structure is to the stream, the higher the conductor will be over the stream and the taller the vegetation. This will result in taller buffers that provide maximum shading (and cooling) of the salmon habitat streams.

Figures 2 and 3 illustrate vegetation clearing and maintenance practices within salmon stream buffer zones.

5.0 VEGETATION MAINTENANCE WITHIN DESIGNATED INLAND WATERFOWL AND WADING BIRD HABITAT

The proposed 115kV transmission line crosses mapped IWWH at 13 locations along the route. These crossings are located in the following towns: Oakfield, 3 in Glenwood Plantation, North Yarmouth Academy Grant, Macwahoc Plantation, Molunkus Township, Woodville, and 5 in Chester. These IWWH areas will also be shown on the As-Built Plan and Profile drawings.

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

- Only those trees capable of growing to a height within 15 feet of a conductor within the next 3 to 4 years will be topped or removed. No other vegetation other than dead or danger trees will be removed;
- Tree topping is the preferred method of vegetation maintenance, unless topping will leave insufficient vegetation to sustain the tree;
- Existing dead or dying trees of capable species shall be topped at a height so as to provide nesting habitat (snags) for waterfowl, provided the snags do not present a safety hazard for operation of the line; and
- No herbicides will be allowed within the mapped IWWH.

In addition to other applicable maintenance requirements, vegetation maintenance activity using motorized equipment (i.e., all-terrain vehicles) within moderate and high value IWWH will be prohibited between April 15 and July 15 each year to minimize the potential disruption of avian breeding and nesting

activity, unless in an emergency with approval from MDEP and MDIFW. Hand-cutting without the use of mechanized equipment (e.g., mechanized brush saws or chain saws) is allowed.

6.0 VEGETATION MAINTENANCE AT SIGNIFICANT VERNAL POOL LOCATIONS

6.1 SIGNIFICANT VERNAL POOLS

Vernal pool surveys for the transmission line were conducted during the spring of 2009 and 2010. Vernal pool locations will be shown on the As-Built Plan and Profile drawings. Ten Significant Vernal Pools were identified within the proposed ROW. Complete survey results can be seen in Section 7, Appendix 7-1 of MDEP application.

Vegetation maintenance within 100 feet of all Significant Vernal Pools will consist of cutting all capable species and topping other vegetation that may interfere with the 15-foot clearance between conductor and vegetation. Removal will be by hand-cutting only, with limited use of motorized equipment in areas that are directly accessible from public or private access roads or from the middle access way established during initial clearing. The use of mechanized equipment will not be allowed within the vernal pool depression. No herbicide use will be allowed within 100 feet of the pool basins.

Between April 1 and June 30, no vegetation maintenance using tracked or wheeled equipment will be performed within the 250-foot critical habitat of Significant Vernal Pools. Maintenance will be performed using hand tools only. No vegetation maintenance will occur within 25 feet of any vernal pool depression during this time period.

Table 2 below summarizes the locations of the Significant Vernal Pools identified along the ROW.

TABLE 2. SIGNIFICANT VERNAL POOLS AND LOCATION

Pool ID	Pool Type	Pool Origin	Associated Wetland
SVP07TT_N	SVP	Natural	CHE001
SVP24-1MA_N	SVP	Natural	MAC255
SVP62AA_N	SVP	Natural	MAC264
SVP59AA_N	SVP	Natural	MAC265
SVP23DD_N	SVP	Natural	GLE352
SVP65AA_N	SVP	Natural	GLE363
SVP46ED_N	SVP	Natural	GLE400
SVP100CFM_N	SVP	Natural	MAC233
SVP09TT_N	SVP	Natural	MAC234
SVP10TT_N	SVP	Natural	MAC235

7.0 VEGETATION MAINTENANCE WITHIN MAPPED DEER WINTERING AREAS

The Project corridor intersects three moderate or high value DWAs In these areas, the proposed transmission line corridor has the potential to remove contiguous softwood shelter and/or fragment existing or potential travel corridors through the DWA. These three DWAs are #991502 in Macwahoc Plantation, #992202 in Reed Plantation, and #100068 in T3R3 WELS. The Applicant has identified further vegetative maintenance restrictions that will minimize impacts to the mapped DWA habitat in these three areas to the maximum extent allowed by the ISO-NE standards.

The following restrictions will apply to vegetation maintenance within mapped DWAs:

- Only those trees capable of growing to a height within 15 feet of a conductor within the next 3 to 4

years will be topped or removed. No other vegetation other than dead or danger trees will be removed;
- Tree topping is the preferred method of vegetation maintenance, unless the tree is dead or dying, or unless topping will leave insufficient vegetation to sustain the tree;
- Within 50 feet on either side of each pole location in the DWA, focus will be given to retain coniferous species that will provide travel corridors across the cleared ROW. Deciduous, capable species will be selectively harvested and coniferous species will be allowed to grow to the maximum allowable height as provided in the ISO-NE standards; and
- No herbicides will be allowed within the mapped DWA.

8.0 VEGETATION MAINTENANCE SURROUNDING RARE PLANT LOCATIONS

Rare plants are found in several locations along the length of the Project corridor. The rare plant species identified are located in Glenwood and include showy lady's slipper (*Cypripedium reginae*) in wetlands GLE354 and GLE359, marsh valerian (*Valeriana uliginosa*) in wetland GLE359, swamp fly-honeysuckle (*Lonicera oblongifolia*) in wetlands GLE343, GLE350, GLE351, and GLE359, northern bog sedge (*Carex gynocrates*) in wetland GLE359, and dwarf yellow water crowfoot (*Ranunculus gmelinii*) in wetlands GLE354 and GLE359. In the areas surrounding these rare plant locations, vegetation clearing and maintenance of the proposed transmission line corridor has the potential to impact the plants and/or alter their habitat. The Applicant has identified further vegetative maintenance restrictions that will minimize impacts to the rare plants during routine vegetation maintenance. The above-listed plants are either herbaceous or shrub species; therefore, compliance with ISO-NE standards is not a concern for these buffers.

Prior to the initiation of vegetation maintenance, a qualified botanist will demarcate the locations of the rare plants. This process will include flagging all individual plants of swamp fly-honeysuckle, the only woody species of the documented rare plants in the Project area. In all plant locations, including the swamp fly-honeysuckle 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, etc.). This process will serve to clearly distinguish the area in which the clearing restrictions must be applied. As needed during subsequent maintenance, a qualified botanist should revisit the mapped rare plant locations to re-mark areas where flagging or demarcation materials are no longer visible.

The following restrictions will apply to vegetation maintenance in and around rare plant locations:

- Cut at ground level all capable species that are 8 – 10 feet high or taller within the demarcated habitat. No other vegetation shall be cut within the demarcated habitat.
- All species should be cut by hand with chainsaws or hand saws or axes. No mechanized cutting equipment shall be used.
- No all-terrain vehicles or other vehicles are allowed within the demarcated rare plant locations.
- No herbicides will be allowed within the rare plant locations.

9.0 MAINTENANCE PROCEDURES FOR SIGNIFICANT SAND AND GRAVEL AQUIFER

The proposed Oakfield II transmission line crosses four mapped significant sand and gravel aquifers (see Section 15, Attachment 15-1). The four mapped aquifers are located in T3R3 along the East Branch of the Mattawamkeag River, in Macwahoc Plantation along Molunkus Stream, in Chester along Pea Ridge Road, and in Chester adjacent to Keene Bog. These sections will be subject to the typical ROW maintenance procedures, except no herbicides may be applied 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.

10.0 MAINTENANCE PROCEDURES FOR OSPREY NESTS

It is common for osprey to nest on the top of power line structures. Typically, nests are allowed to remain

in place unless there is a chance they are going to come into contact with the conductor. Osprey use nests from year to year and build up the nests annually. Sometimes the nests get so large they can touch a conductor or be close enough to create an arc. If there is a risk of arcing or conductor contact, the Applicant will follow its existing guidelines for removing nests (set forth in Section 8.1), which usually takes place in the fall of the year. No permit is required.

10.1 GUIDELINES FOR REMOVAL OF OSPREY NESTS

The following process will be completed for any removal of an osprey nest that is built on the 34.5-kV connector or 115 kV transmission line structures:

- Only inactive nests will be taken. Nests that contain eggs or chicks will not be disturbed;
- Nests will only be taken between September 1 and April 15, and only if birds are not actively using the nest;
- Nests will be relocated to nesting platforms, when possible, otherwise they will be destroyed when they are removed;
- The designated person will be notified of the date, number of nests moved or destroyed, and the town where the nest(s) are/were located. He/She will keep an updated, running total of nests moved or destroyed. The list of nests removed will be distributed to the line supervisors periodically. He/She will evaluate what steps may need to be taken if more than 20 nests require action in one year; and
- He/She will submit an annual report of all osprey nests moved or removed by the Applicant to the Maine Department of Inland Fisheries and Wildlife.

11.0 SYSTEM FOR LOCATING/MARKING RESTRICTED AREAS

Prior to conducting maintenance activities along the ROW, a foreman or supervisor will identify all restricted areas with flagging or signage. Maine GenLead has in place a system for locating specific areas or features in the field by maintaining a database that references a variety of sensitive areas to the nearest structure (pole) or road location. In some instances, signage is attached to the structures. All structures along the transmission line will be numbered at the time of construction. The numbers will be included on the As-Built Plan and Profile drawings. Maine GenLead's database will include sensitive areas along the lines and their locations relative to the nearest numbered structure. That data will then be incorporated in this VMP.

All protected resources, buffer areas, and other areas where maintenance restrictions apply will be located in this manner. 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. Maintenance contractors working on the ROWs will be given the VMP prior to receiving the required environmental training (Section 10.0).

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.

12.0 TRAINING OF MAINTENANCE PERSONNEL

This section summarizes the environmental training that will be required for all personnel with maintenance responsibilities on the ROW.

12.1 PERSONNEL AND SCHEDULE

All of Maine GenLead's personnel and contractors who will be participating in vegetation maintenance activities on the ROWs will receive appropriate environmental training before being allowed access to the ROW. The level of training will be commensurate with the type of duties of the personnel. The training will be given prior to the start of maintenance activities. Replacement or new employees that did not receive the initial training will receive similar training prior to performing any maintenance activities on the

ROWs.

12.2 CONTENT OF TRAINING SESSIONS

Prior to receiving maintenance training, each participant will be required to review this Post-Construction VMP. The training session will consist of a review of all protected resources and restricted areas, the respective maintenance requirements and restrictions for each, and a review of how these areas and resources can be located in the field (relative to the nearest numbered structure). Training will include familiarization with and use of 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, clean-up, monitoring, and reporting requirements.

FIGURES

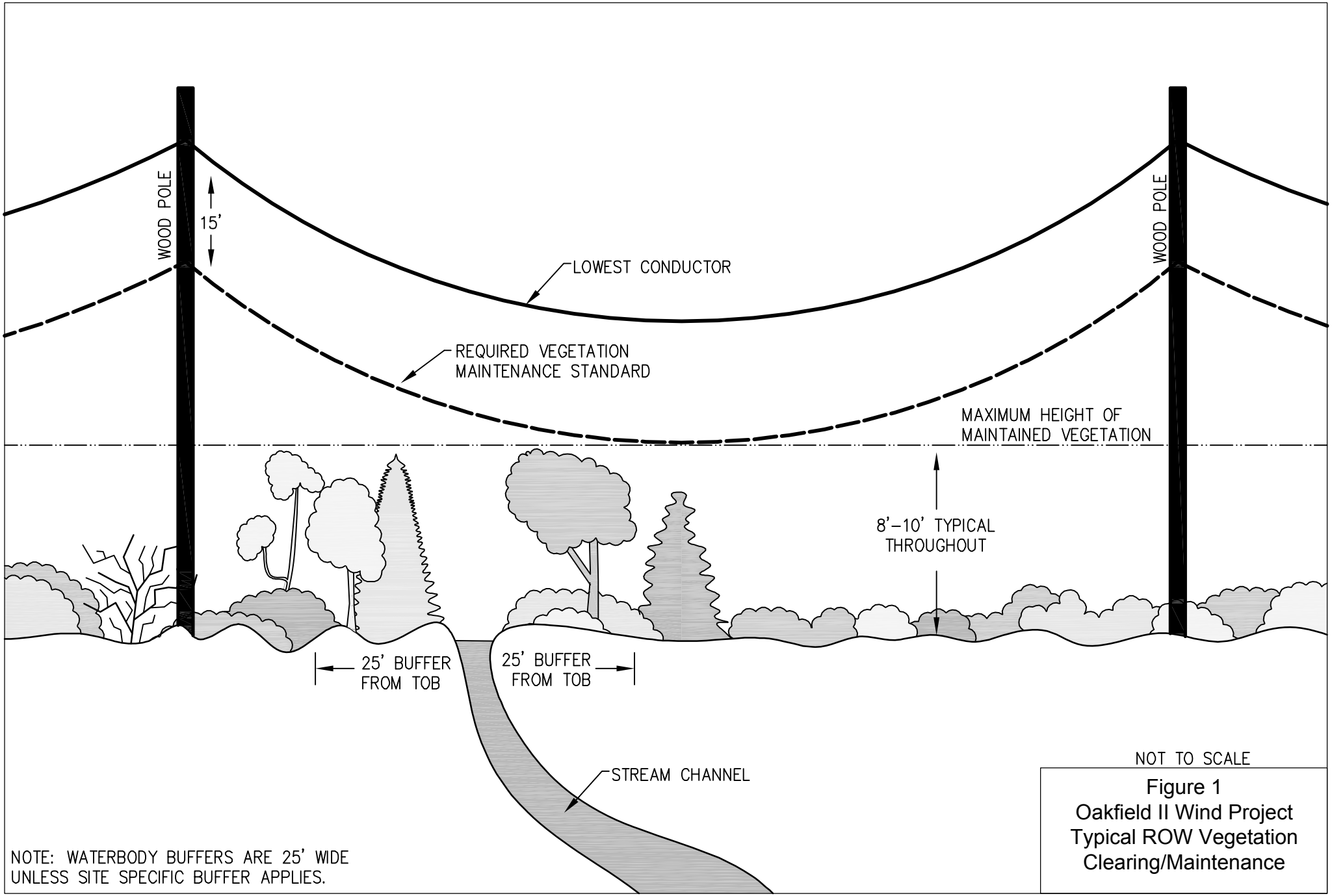

Figure 1
Oakfield II Wind Project
Typical ROW Vegetation
Clearing/Maintenance

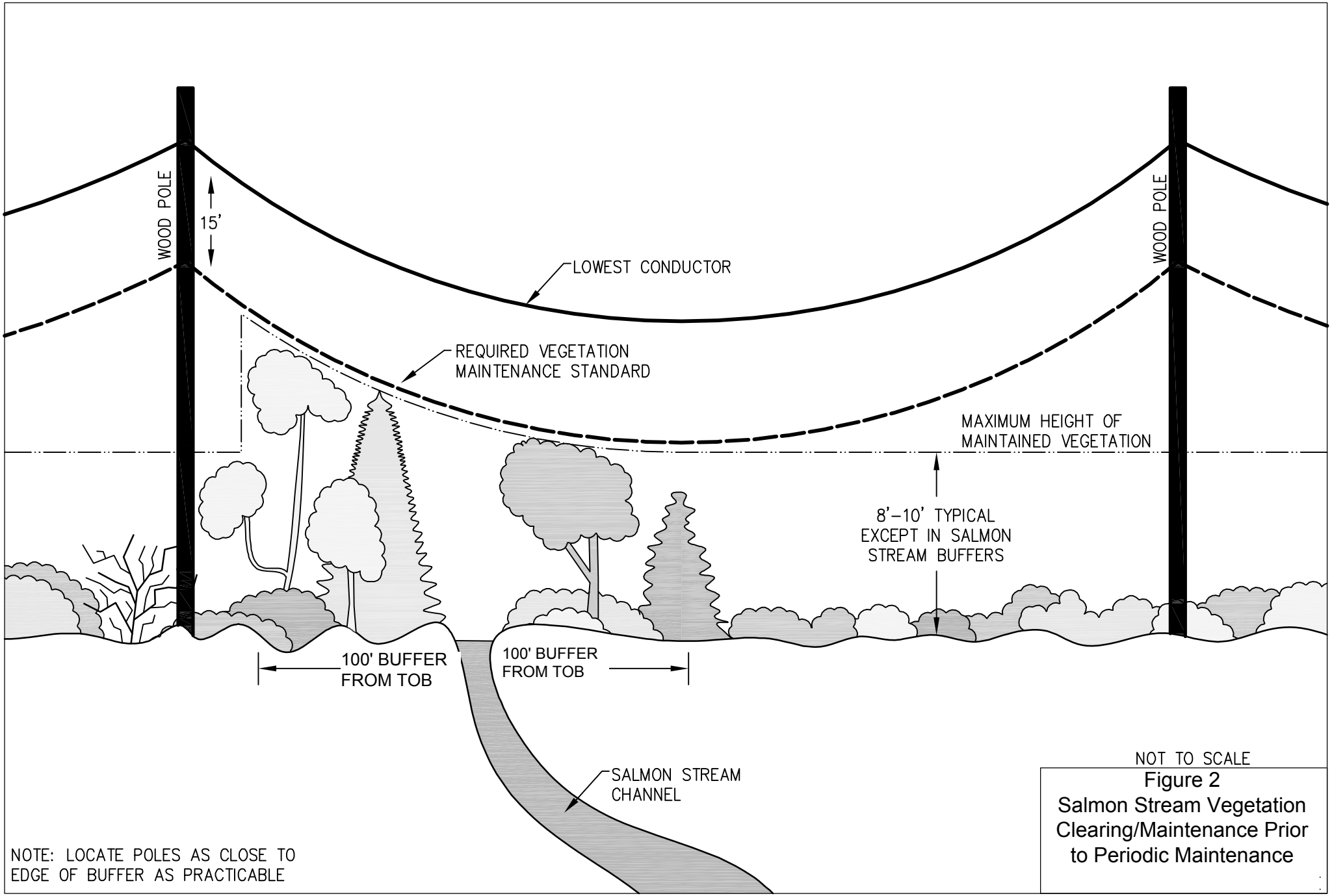

Figure 2
Salmon Stream Vegetation
Clearing/Maintenance Prior
to Periodic Maintenance

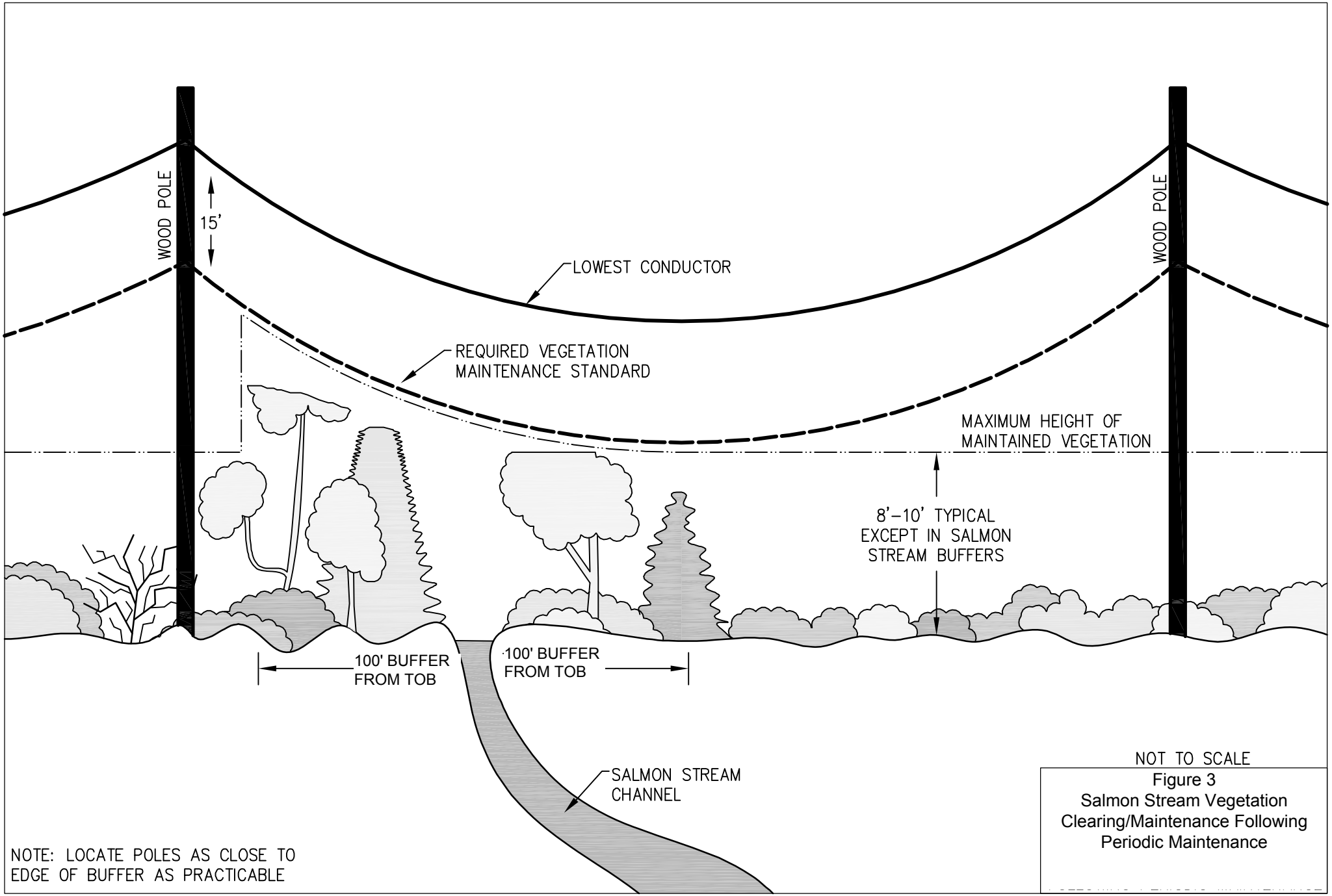

Figure 3
Salmon Stream Vegetation
Clearing/Maintenance Following
Periodic Maintenance

Appendix 10-2
Invasive Species Management Plan

Maine GenLead Project
115-Kilovolt Generator Lead Transmission Line
Penobscot and Aroostook County, Maine

APPENDIX 10-2
INVASIVE SPECIES MANAGEMENT PLAN

Prepared for:
Maine GenLead, LLC

Prepared by:
Stantec Consulting

August 2010

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1.0 PROJECT BACKGROUND

The Maine GenLead, LLC, Project (project) is a 59 mile, 115-kilovolt transmission line located in Aroostook and Penobscot Counties, Maine. The proposed transmission line will parallel existing transmission line right-of-way (ROW) for approximately 41 miles and will consist of newly cleared ROW for the remaining 18 miles. The proposed transmission line corridor primarily runs through undeveloped forest, crossing numerous all-terrain vehicle/snowmobile trails and occasionally crossing existing paved and dirt roads. Natural community features present within the study area include forested uplands and wetlands, scrub-shrub wetlands, emergent wetlands, and river and stream systems.

This Invasive Species Control Plan (Plan) addresses the anticipated procedures for managing invasive species and enhancing the value of wetlands and uplands located within the transmission line ROW. This Plan is designed to supplement the existing ROW Vegetation Management Plan (VMP) as detailed in Section 10, Appendix 10-1, of the combined Maine Department of Environmental Protection (MDEP) Site Location of Development Act/Natural Resources Protection Act permit application for the Project.

2.0 MANAGEMENT PLAN OBJECTIVES

The majority of the proposed transmission line corridor is located within forested uplands and wetlands, and vegetation clearing will be required for the construction of the line. The communities will be permanently converted from forested systems to communities dominated by shrubs and herbaceous vegetation. Because of this disturbance, the new ROW could be subject to colonization by invasive species as a result of clearing and construction activities.

During the review of past MDEP permit applications, the U.S. Army Corps of Engineers (Corps) has expressed concerns regarding the potential spread of invasive plant species along new segments of transmission line ROW. Accordingly, the Corps has requested that applicants develop these types of plans, including a program for post-construction monitoring of invasive species and implementation of appropriate invasive species controls.

The overall goal of this Plan is to preserve and enhance the functions and values of the wetlands and uplands within the project area, focusing on those areas in which invasive species were not present prior to the construction of the lines. While complete eradication of invasive species is not a stated goal, this Plan is designed to limit the spread of these species as much as possible. The Plan includes the following steps:

- Identify locations along the proposed transmission line ROW in which invasive species presently exist in order to develop a baseline for future monitoring;
- Provide a plan for monitoring the status of invasive species within the project area and coordinate with the involved agencies regarding the results of the monitoring;
- Identify appropriate strategies (e.g., mechanical cutting, herbicide application, biological control, or a combination thereof) for controlling and/or limiting the spread of invasive species within the transmission line ROW; and
- Incorporate invasive plant species control strategies in the existing vegetation management program for the Project.

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).

The Maine Natural Areas Program (MNAP) maintains a list of invasive plants known to be present in Maine. Table 1 below presents the common invasive species likely to be present in the project area based on a review of this list, as well as on field surveys conducted by Stantec Consulting (Stantec) in and around the project area.

Table 1. Invasive Plant Species Likely to be Associated with the Maine GenLead Project

Common Name	Scientific Name
Norway Maple	*Acer platanoides*
Garlic Mustard	*Alliaria petiolata*
Japanese Barberry	*Berberis thunbergii*
Oriental Bittersweet	*Celastrus orbiculatus*
Black Swallowwort	*Cynanchum louiseae*
Russian Olive	*Eleagnus angustifolia*
Autumn Olive	*Eleagnus 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 2009 and 2010, Stantec performed wetland delineations, vernal pool surveys, and rare, threatened, and endangered (RTE) species surveys within the project area. The results of these surveys are presented in Appendix 7-1 of the MDEP permit application. During the course of each survey, Stantec documented any occurrences of invasive plant species. Across the entire project area, no invasive species were documented. The lack of invasive species present can be attributed to the relatively undeveloped landscape surrounding the project area.

5.0 INVASIVE SPECIES MONITORING PROGRAM

5.1. GOALS AND OBJECTIVES

The applicant is committed to performing monitoring to assess the status of invasive species within the project area 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 program will target the invasive species identified 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 program 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;
- Define the types of control measures that are most appropriate for each invasive species location; and
- Provide input in order to incorporate the invasive species control measures into the overall VMP (Appendix 10-1 of the MDEP permit application).

5.2. METHODS

The applicant will retain a qualified, independent researcher to conduct the monitoring program. The monitoring program will consist of field surveys of the project area 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 forms and take representative photographs. Any conditions that would influence the use of a particular type of invasive control method will also be noted. Populations of invasive species identified immediately adjacent to the Project 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 transmission line corridor will be conducted in the first year following the completion of project construction and for four years thereafter (i.e., a total of five years of annual monitoring). If during the first five years of monitoring densities of invasive species are found to be low, monitoring frequency may be reduced to every other year. The goal of the five-year monitoring effort will be to identify locations where invasive species are present so that control measures can be implemented as soon as practical, particularly in any areas where invasive species are beginning to colonize as a direct result of construction of the project. The five years of monitoring will also allow for an evaluation of the effectiveness of the control measures. After the completion of five years of monitoring and treatments, this Plan will be integrated into the applicant's existing VMP. The VMP states that vegetation maintenance will generally be carried out on a four-year or five-year maintenance cycle, depending on growth, weather, geographic location, and corridor width. Once incorporated into the VMP, this invasive species monitoring program should occur in the year prior to routine vegetation maintenance work so that treatment recommendations can be included with the regular maintenance effort. Over time, as invasive species control becomes a standard component of the applicant's ROW vegetation management program, monitoring and control schedules may be adjusted to respond to site-specific issues (e.g., monitoring less frequently as densities decrease, instituting treatment in consecutive years to control an aggressive population).

5.3. MONITORING REPORT

The results of each year of invasive species monitoring will be detailed in a brief report that will include a summary of the field results, a table and map that identifies the locations of invasive species along the ROW, copies of the monitoring forms, and representative photographs. Comparisons will be made as to whether invasive species are becoming more or less prevalent, 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.

During the first five years of monitoring, reports will be submitted annually. If it is determined that monitoring will not be required every year, reports will only be submitted in years when monitoring has occurred. 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 2011, the monitoring report will be submitted by March 31, 2012). See Table 2 below for the anticipated monitoring schedule. If requested, the applicant and its contractors will be available to meet with the involved agencies to review the results of the invasive species monitoring and control program. The purpose of the meetings would be to assess the status of the program and the effectiveness of the monitoring and control methods.

Table 2. Anticipated Invasive Species Monitoring Schedule

Year	Date of Monitoring	Monitoring Report Submitted
1	Summer 2011	March 2012
2	Summer 2012	March 2013
3	Summer 2013	March 2014
4	Summer 2014	March 2015
5	Summer 2015	March 2016

Implementation of invasive species control measures will be based on the results of the monitoring and will not require approval from the regulatory agencies. The application of control measures 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 ROW, various factors must be considered. These include:

- The characteristics and functions/values of the wetlands and uplands along the ROW;
- The invasive species that are present and their density within the ROW;
- Sensitive areas along the transmission line ROW, including wetlands, streams, vernal pools, RTE species, wildlife habitat, sand and gravel aquifers, and visual buffers;
- Adjacent land use developments, which can affect the value of wetlands on the ROW and can influence the choice of control strategies; and
- The cooperation of the landowner and the potential lack of complete land use control, depending on the conditions of the ROW easements across private properties.

As a result of these factors, it should be recognized that invasive species control measures may not be practical or highly effective in all areas along the collector line ROW. Additionally, complete eradication of invasive species is unlikely given the aggressive nature of most invasive species.

6.2. TYPES OF CONTROL

In general, there are three types of invasive species control methods: mechanical, chemical, and biological. These control methods may be combined to provide a more effective control strategy.

Mechanical control measures such as digging, pulling, and cutting may be effective in controlling isolated invasive plants or small stands of plants. 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 garlic mustard (*Alliaria petiolata*).

Chemical control (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 streams), herbicides can be successfully applied in an environmentally-sound manner. In addition, herbicide applications often provide the most cost-effective method for controlling dense infestations of invasive species.

Biological controls can be effective in controlling some invasive species under certain conditions but are not yet proven for the control of all species. Consultation with the Corps indicates that species such as loosestrife beetles (*Galerucella calmariensis* and *Galerucella pusilla*) may be useful in controlling purple loosestrife. Purple loosestrife has not been identified within the project area, and the use of loosestrife beetles is unlikely to be recommended for this project.

6.3. CONTROL OF EXISTING INVASIVE SPECIES

While no invasive species were observed in the project area, the applicant will be prepared to implement control methods should any invasive species be detected during construction. Measures such as cleaning construction equipment and construction mats, stockpiling contaminated soil, and inspections of construction vehicles will be implemented immediately if populations of invasive species are encountered within the project area.

6.4. SCHEDULE FOR IMPLEMENTATION OF INVASIVE SPECIES CONTROLS

Following construction, 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 transmission line. As a result, the applicant will implement an aggressive invasive species control approach in the first five years immediately following the completion of construction. Particular treatment efforts will be focused on preserving and enhancing the functions and values of the wetlands and uplands along the ROW.

Based on the results of the monitoring program conducted in each of the first five years after construction, the applicant will schedule invasive species treatment measures annually, as soon as practical after the field monitoring recommendations are received. The schedule for the treatment will depend on the types of controls recommended. 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 require that work be done during the growing season to be most effective. Over time, the applicant expects that the invasive species treatment program will be integrated into the overall ROW vegetation management effort.

Depending on the results of the monitoring, the applicant may contract a field biologist or wetland scientist to work with its ROW management contractor to oversee the implementation of invasive species control measures, to recommend methods for maximizing the potential re-establishment of native vegetation, and to suggest wetland plantings to enhance habitat values. For locations where invasive species controls are implemented, monitoring performed in subsequent years will serve to assess the effectiveness of such measures.

6.5. CONTROL STRATEGIES

Although specific treatments will be refined based on the results of the monitoring program, it is anticipated that the most effective general approach for controlling invasive species within the project area will likely be a combination of mechanical removal and application of herbicides in selected locations during the growing season. Repeated spot herbicide applications may be required in subsequent growing seasons in order to achieve effective control. Based on the lack of invasive species documented in the proposed project area, large-scale control is not anticipated.

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, and areas where the ROW is not owned by the applicant. Additionally, invasive species may be present in wetland and upland areas that are outside of the defined ROW. The applicant has no authority to attempt to control invasive species that may be present in adjacent areas outside of the ROW.

Herbicide applications will be performed according to applicable laws and regulations put forth by the Maine Bureau 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 and released pursuant to specifications.