

Section 10 Buffers

1.0 Buffers

Vegetated buffer strips are an important means for maintaining the water quality of surface waterbodies and provide 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 turbine and access road portion of the project are also important for stormwater management and phosphorus control.

Buffers around access roads and turbine pads will be preserved to provide stormwater and phosphorus treatment. 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 for the project will include (i) no-cut buffers around roads and turbines; (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) vernal pool buffers that involve selective clearing and minimal cutting of vegetation during construction and maintenance; and (v) 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.

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 Evergreen 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. Evergreen will maintain these buffers in accordance with the Post-Construction Vegetation Maintenance Plan (Vegetation Maintenance Plan), which is provided in Appendix 10-1 of this section.

Table 10-1 summarizes the five basic types of buffers proposed for the 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 Vegetation Maintenance Plan.

Table 10-1. Rollins Wind Project

Name	Location	Buffer Width	Clearing During Construction	Cutting During Maintenance And Operation ¹	Pole Placement	Herbicide Use
Access Roads and turbine pads	Turbine project area	Variable buffer outside of disturbed area	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 Waterbody	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	Cut at ground level all species that are 8-10 feet or taller; no other vegetation is cut	Not Allowed	Not Allowed
Vernal Pools	As noted on plan and profile	75 feet around the perimeter of pools within the ROW	Cut at ground level all capable species that are 8-10 feet or taller; no other vegetation is cut	Cut at ground level all capable species that are 8-10 feet or taller; no other vegetation is cut	Avoid and minimize impacts; no poles in vernal pools	Not Allowed
Salmon Habitat Stream Buffers	ASC ³ Special Concern Salmon Habitat Streams	75 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	Not Allowed, but place as close as possible	Not Allowed

¹ dead or danger trees 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 Rollins Wind Project. Evergreen has drawn on its considerable past experience with construction and maintenance of wind 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 wind power 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 Rollins Wind Project with environmental benefits of riparian buffers. Evergreen 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. Evergreen believes that the buffers and the Vegetation Maintenance Plan 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 and Turbine Buffers

Buffers for the access roads and turbine buffers are no-cut areas designed to provide a visual break from the access roads and stormwater and phosphorus treatment from the developed areas. In addition to these 100-foot buffers, the 32-foot crane roads and the majority of the turbine pad area at each turbine will be reseeded, providing additional buffering capacity (see Section 12, Stormwater Management).

3.0 Typical Transmission Line Buffers

The transmission line requires cutting vegetation in order to meet ISO-New England 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 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 streams crossed by the transmission line and those adjacent to new access roads. Water bodies crossed by the project in the summit area (Rollins North and Rollins South) consist primarily of stream segments that are disconnected from larger stream 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 waterbody 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 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 75 feet of a waterbody will be limited to the maximum extent practicable.

4.2 Standard Stream Buffer Clearing Procedures

Tree cutting in riparian buffer zones will be limited. Prior to 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. 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.

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.

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.

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.

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*], balsam fir [*Abies balsamea*], white pine [*Pinus strobus*], red maple [*Acer rubrum*]) are removed, the "desirable species" that will persist and be maintained in the buffers will consist primarily of grasses and shrubs (e.g., arrowwood [*Viburnum dentatum*], highbush blueberry [*Vaccinium corymbosum*], alder [*Alnus incana*], winterberry [*Ilex verticillata*], white mulberry [*Morus alba*]). 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 Vegetation Maintenance Plan, includes the names and locations of waterbodies crossed by the 115-kilovolt transmission line.

5.0 Vernal Pool Buffers

A minimum 75-foot vegetated buffer, as measured from the edge of the habitat on each side, will be established for significant vernal pools, vernal pools, and potential 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 75-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 manner to minimize disturbance. Mats will be utilized if necessary to prevent excessive rutting or soil displacement. Large trees will be cut and carefully removed from the buffer area.

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.

Clearing the ROW will not result in greater than 25 percent of the vernal pool habitat envelope being impacted. As previously discussed, herbicide use within this 75-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.

6.0 Salmon Habitat Stream Buffers

The Atlantic Salmon Commission stated that rivers and streams in the Penobscot drainage area should be considered as potential salmon habitat (personal communication with Norm Dube, August 21, 2007). For the Rollins Wind Project, this includes all perennial rivers and streams. The Applicant has identified additional construction design criteria and further vegetative 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.

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. One notable exception to this approach made to minimize impacts is the crossing of the Salmon Stream in Winn where structures were located further from the bank on the north to take advantage of an upland location for one pole set, and the south set moved out of the immediate floodplain.

The combination of closer structures and maximum allowable vegetation height within 75 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. 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 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 Vegetation Maintenance Plan 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.

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.

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.

7.1 Vegetation Maintenance Plan

The Applicant has prepared a Rollins Transmission Line Vegetation Maintenance Plan to be a stand-alone document containing post-construction vegetation maintenance requirements related to the project. The Vegetation Maintenance Plan, 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 buffers and other resources are properly identified in the field and protected accordingly. The Applicant will implement the Vegetation Maintenance Plan prior to initial vegetation maintenance activity on the transmission line ROW and will continue to follow it during all subsequent vegetation maintenance action.

Appendix 10-1

Rollins Wind Project
34.5-Kilovolt Connector and 115-Kilovolt Transmission Line
Penobscot County, Maine

POST-CONSTRUCTION
VEGETATION MAINTENANCE PLAN

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Table of Contents

1.0 INTRODUCTION..... 1

2.0 TYPICAL ROW VEGETATION MAINTENANCE PROCEDURES 2

 2.1 MECHANICAL TECHNIQUES 3

 2.2 USE OF HERBICIDES..... 3

3.0 VEGETATION MAINTENANCE WITHIN STANDARD WATERBODY BUFFERS..... 4

 3.1 ADDITIONAL VEGETATION MAINTENANCE RESTRICTIONS WITHIN STANDARD WATERBODY BUFFERS .. 4

4.0 VEGETATION MAINTENANCE WITHIN SALMON STREAM BUFFERS 6

 4.1 SALMON HABITAT STREAM BUFFERS..... 6

 4.1.1 Additional Vegetation Maintenance. Restrictions within Salmon Habitat Stream Buffers..... 6

 4.1.2 Structure Locations and Salmon Habitat Buffers 6

5.0 VEGETATION MAINTENANCE WITHIN DESIGNATED WADING BIRD AND WATERFOWL HABITAT 7

6.0 VEGETATION MAINTENANCE AT VERNAL POOL LOCATIONS 7

 6.1 VERNAL POOLS..... 7

7.0 MAINTENANCE PROCEDURES FOR SIGNIFICANT SAND AND GRAVEL AQUIFER 7

8.0 MAINTENANCE PROCEDURES FOR OSPREY NESTS..... 8

 8.1 GUIDELINES FOR REMOVAL OF OSPREY NESTS 8

9.0 SYSTEM FOR LOCATING/MARKING RESTRICTED AREAS 8

10.0 TRAINING OF MAINTENANCE PERSONNEL 8

 10.1 PERSONNEL AND SCHEDULE..... 9

 10.2 CONTENT OF TRAINING SESSIONS 9

Tables

TABLE 1	STREAMS CROSSED BY THE PROJECT
TABLE 2	VERNAL POOL HABITAT TYPE AND LOCATION

Figures

FIGURE 1	TYPICAL ROW VEGETATION CLEARANCE/MAINTENANCE
FIGURE 2	SALMON STREAM PRIOR TO MAINTENANCE CLEARING
FIGURE 3	SALMON STREAM POST MAINTENANCE CLEARING

1.0 INTRODUCTION

Evergreen has prepared this Post-Construction Vegetation Maintenance Plan (Vegetation Maintenance Plan) to be a stand-alone document containing all restrictive maintenance requirements for natural resources along the 34.5 kV connector between Rollins-North and Rollins-South, and the 115 kV from the Rollins substation to the interconnect in Mattawamkeag. The requirements set forth in the Vegetation Maintenance Plan, as proposed by Evergreen and incorporated into federal, state, and local permits for the project, apply to routine maintenance along the ROWs 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 Vegetation Maintenance Plan is to supply the Applicant's maintenance personnel and contractors with a single, cohesive set of vegetation maintenance specifications for the connection and transmission lines. 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 Vegetation Maintenance Plan is intended to be used in conjunction with the project as-built Plan & Profile drawings to locate the areas where maintenance restrictions apply.

The natural resources subject to restrictive maintenance requirements include:

- ◆ Wetlands and waterbodies;
- ◆ Designated rivers and streams that are classified as Cold Water Streams, or contain Atlantic Salmon habitat or located within associated watershed;
- ◆ Locations over significant sand and gravel aquifers;
- ◆ Designated moderate and high Waterfowl and Wading Bird Habitats (WWBH);
- ◆ Vernal Pools;
- ◆ Osprey nests that are built on transmission line structures.

The remainder of the Vegetation Maintenance Plan is organized as follows:

- ◆ Section 2.0 summarizes the typical vegetation maintenance methods and procedures that will be utilized by the Applicant for the connector and the transmission line ROWs;
- ◆ 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 restriction that pertains to designated WWHs 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 restriction that pertains to the significant sand and gravel aquifers located in Winn (see Section 15, Appendix 15-1);
- ◆ Section 8.0 provides the procedures to be used for managing or removing osprey nests that are built on power line structures;
- ◆ Section 9.0 describes the system to be used for identifying restricted areas in the field while performing maintenance activities; and
- ◆ Section 10.0 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 connector and transmission lines is required to: 1) maintain the integrity and functionality of the line, 2) to 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 (IVM), 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 This standard will also be followed for the 34.5 connector line. 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 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 targeted species along the ROW by hand with a low-volume foliar application. In addition, herbicides may be applied to cut stumps and surfaces of larger trees. The use of selective herbicides will control only the targeted woody vegetation, while leaving low-growing plant communities consisting of grasses, forbs, and shrubs to thrive. Aerial application will not be used. Only herbicides which are registered with and approved by the U.S. Environmental Protection Agency (EPA-approved) 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 will not be applied to any area when it is raining;
- ◆ The foreman of every crew using herbicides will be licensed by the Maine Board of Pesticides Control (MBPC) and will remain in eye contact with 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 MBPC 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; and
- ◆ Each target tree is sprayed until the foliage is covered with little or no 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 connector and transmission lines will be shown on the as-built Plan & 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 connector and transmission lines. 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 and locations of all streams crossed by the connector and transmission line. The location of all waterbodies crossed by the lines also will be shown on the as-built Plan & 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 MBPC 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, 75 feet for vernal pools).

- ◆ Prior to line construction and during vegetation maintenance after construction, only capable species vegetation greater than 8 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; and
- ◆ No refueling or maintenance of equipment, including chain saws, will occur within the buffer areas.

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 ROLLINS WIND PROJECT

Location	Waterbody	Associated Wetland	Stream Type	Crossing Width (feet)
Rollins South				
	Unnamed Intermittent Stream	RS066	Intermittent	1-4
	Unnamed Intermittent Stream	RS104	Intermittent	1-2
	Unnamed Intermittent Stream	RS122	Intermittent	1-2
	Unnamed Intermittent Stream	RS127	Intermittent	2-4
Connector Transmission Line				
	Unnamed Perennial Stream	TC02	Perennial	1-2
	Unnamed Perennial Stream	TC03	Perennial	2-3
	Unnamed Perennial Stream	TC06	Perennial	2-5
	Unnamed Perennial Stream	TC06	Perennial	2-4
	Unnamed Perennial Stream	TC06	Perennial	3-5
	Unnamed Perennial Stream	TC11	Perennial	3-6
	Dead Stream	TC16	Perennial	5-8
	Unnamed Intermittent Stream	TC19	Intermittent	2-3
	Unnamed Perennial Stream	TC21	Perennial	5
	Unnamed Perennial Stream	TC21	Perennial	5
	Unnamed Intermittent Stream	TC26	Intermittent	2
	Unnamed Intermittent Stream	TC27	Intermittent	1-3
	Unnamed Intermittent Stream	TC28	Intermittent	4
	Unnamed Perennial Stream	TC34	Perennial	1-6
	Unnamed Perennial Stream	TC44	Perennial	4-8
	Unnamed Perennial Stream	TC47	Perennial	3-6
Rollins North				
	Unnamed Intermittent Stream	RN27	Intermittent	3-5

(cont.)

Table 1. cont.

Location	Waterbody	Associated Wetland	Stream Type	Crossing Width (feet)
115 Northern T-line				
	Salmon Stream	TN006	Perennial	50-60
	Unnamed Tributary of Mattakeunk Stream	TN028	Perennial	3-5
	Unnamed Tributary of Mattakeunk Stream	TN028	Perennial	5-8
	Unnamed Tributary of Mattakeunk Stream	TN028	Perennial	6-8
	Unnamed Tributary of Mattakeunk Stream	TN048	Perennial	2-4
	Unnamed Tributary of Mattakeunk Stream	TN053	Perennial	3-5
	Unnamed Tributary of Mattakeunk Stream	TN053	Perennial	2-4
	Unnamed Tributary of Mattakeunk Stream	TN053	Perennial	3-6

4.0 VEGETATION MAINTENANCE WITHIN SALMON STREAM BUFFERS

The Atlantic Salmon Commission (ASC) has indicated that all streams in the Penobscot watershed have potential salmon habitat.

4.1 SALMON HABITAT STREAM BUFFERS

The waterbody buffers along 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: MBPC 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 WADING BIRD AND WATERFOWL HABITAT

In addition to other applicable maintenance requirements, vegetation maintenance activity using motorized equipment (ATVs) within moderate and high value wading bird and waterfowl habitat (WWH) will be prohibited between April 15 and July 15 each year to minimize the potential disruption of avian breeding and nesting activity. Hand-cutting without the use of mechanized equipment (e.g., mechanized brush saws or chain saws) is allowed.

There is only one WWH located in the project area, along and adjacent to the 115kV transmission line in Winn, pole location #36 to 39. Most of the ROW in this area is an excavated gravel pit. This WWH area will also be shown on the as-built Plan & Profile drawings.

6.0 VEGETATION MAINTENANCE AT VERNAL POOL LOCATIONS

6.1 VERNAL POOLS

Vernal pool surveys for the connector and the transmission line were conducted during the spring of 2008. Vernal pool locations will be shown on the as-built Plan & Profile drawings. All vernal pool habitat, regardless of significance, will be afforded the same protections. Survey results can be seen in Section 7, Appendix 7-1 of the Site Location of Development application.

Vegetation maintenance in these areas will consist of cutting all capable species and topping other vegetation that may interfere with the 15-foot clearance between conductor and vegetation. No herbicide use will be allowed within 75 feet of the pool basins. Table 2 summarizes the locations and special restrictions associated with the vernal pools identified along the ROW.

TABLE 2. VERNAL POOL HABITAT TYPE AND LOCATION

Pool ID	Pool Type	Adjacent Wetland	Adjacent Proposed Pole
VP60	Man made	TN108	1
VP59	Man made	TN108	1
VP56	Man made	TN090	17
VP55	Man made	TN090	18
VP54	Man made	TN086	23
VP52	Man made	TN067	34
VP44	Man made	TN031	53
VP42	Man made	TN024	60
VP41	Natural pool	TN020	63
VP37	Man made	TN016	70

7.0 MAINTENANCE PROCEDURES FOR SIGNIFICANT SAND AND GRAVEL AQUIFER

A portion of the 115 kV transmission line is located on a mapped significant groundwater aquifer (see Section 15, Attachment 15-1). This transmission line section is located in an area previously mined for

gravel, from poles (see Exhibit 3, Sheets PP-4 and PP-5). This section will be subject to the typical ROW maintenance procedures, except no herbicides may be applied over the significant sand and gravel aquifer. The location of the sand and gravel aquifer will be shown on the as-built Plan & Profile drawings.

8.0 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.

8.1 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.

9.0 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. Evergreen 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 connector and transmission line will be numbered at the time of construction. The numbers will be included on the as-built Plan & Profile drawings. Evergreen'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 Vegetation Maintenance Plan.

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 Vegetation Maintenance Plan prior to receiving the required environmental training (Section 10.0).

Use of the Vegetation Maintenance Plan in conjunction with the as-built Plan & Profile drawings will enable maintenance contractors to locate and mark restricted areas in the field.

10.0 TRAINING OF MAINTENANCE PERSONNEL

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

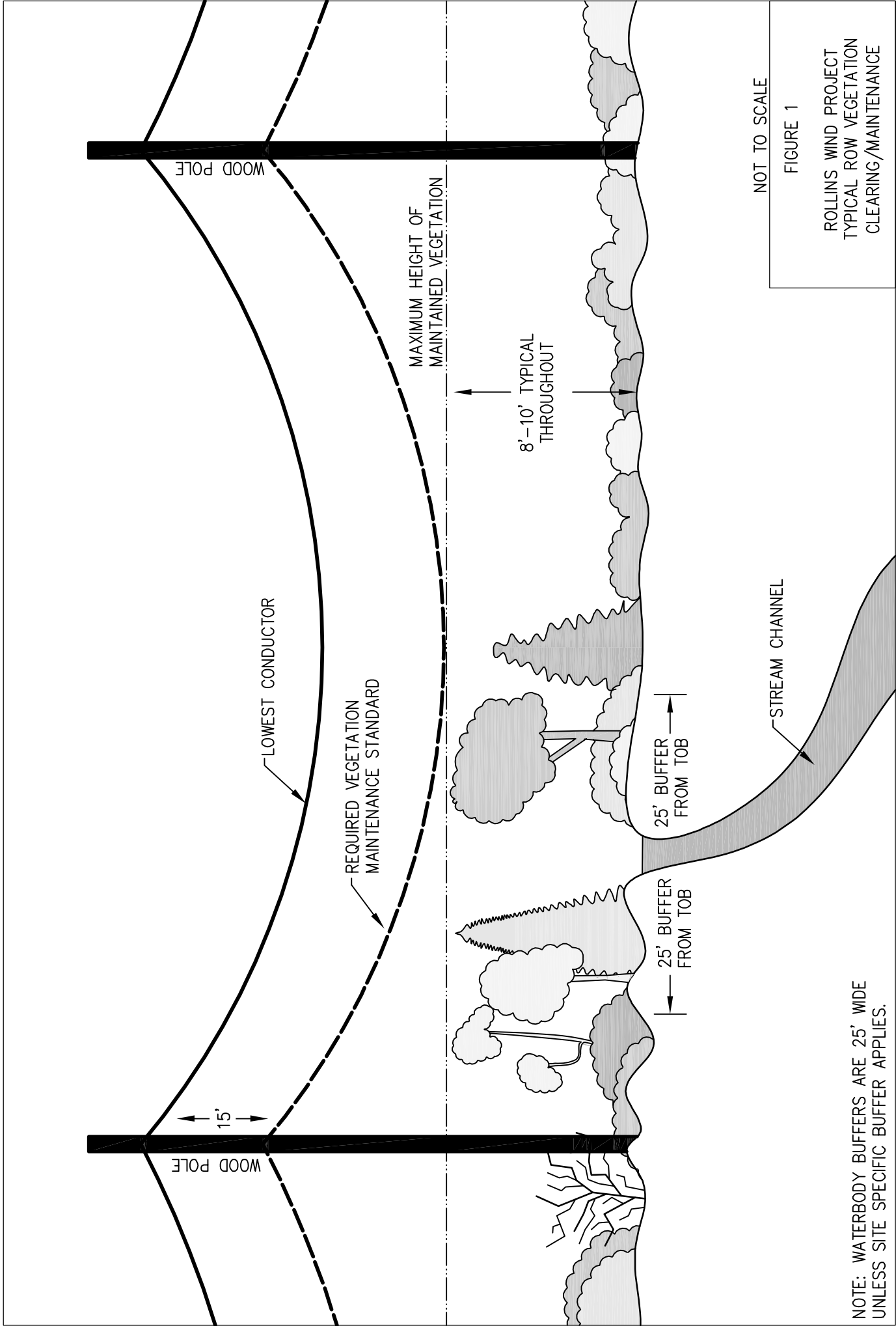
10.1 PERSONNEL AND SCHEDULE

All of Evergreen'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.

10.2 CONTENT OF TRAINING SESSIONS

Prior to receiving maintenance training, each participant will be required to review this Post-Construction Vegetation Maintenance Plan. 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 & Profile drawings in conjunction with the contents of this Vegetation Maintenance Plan, 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

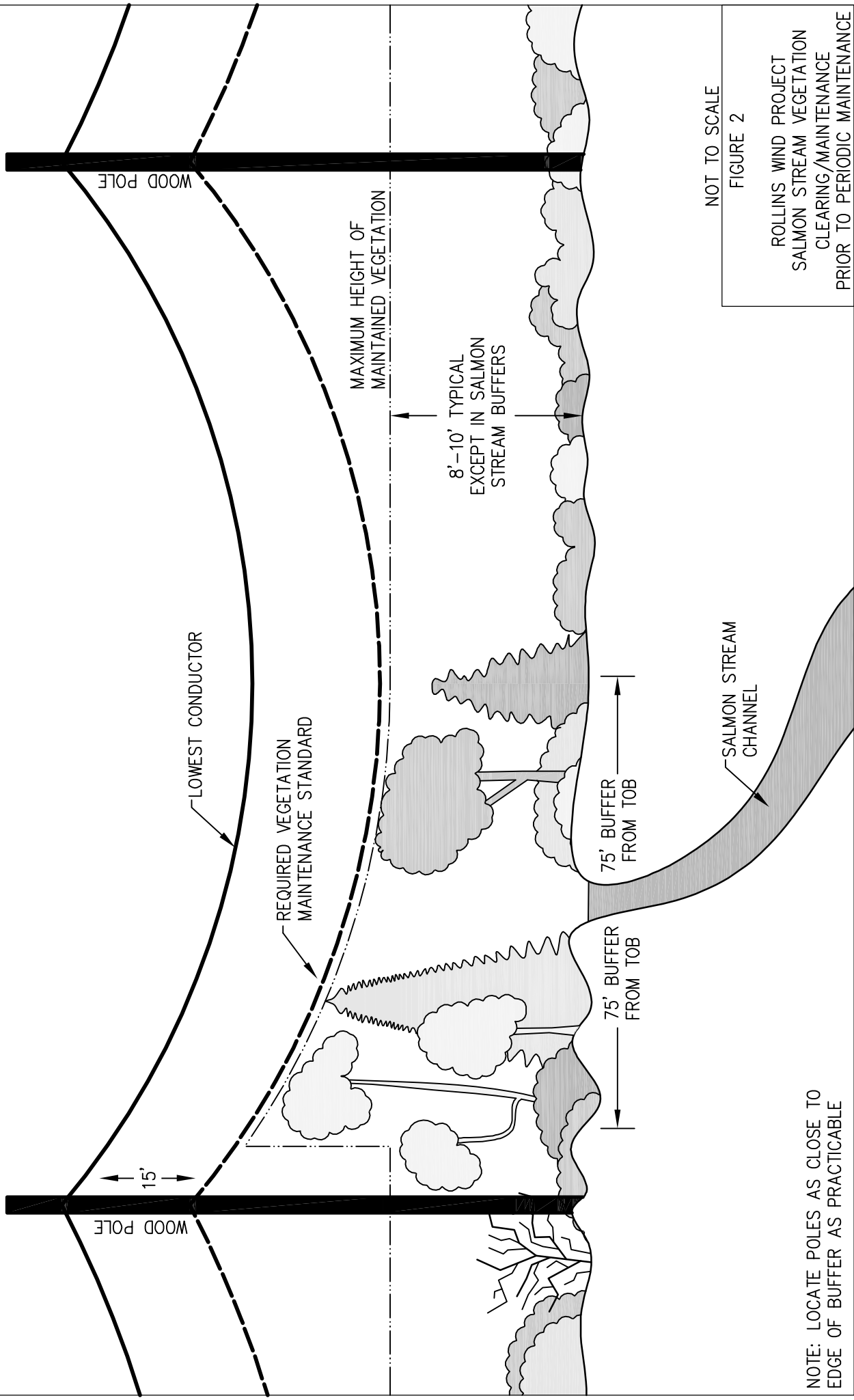


NOT TO SCALE

FIGURE 1

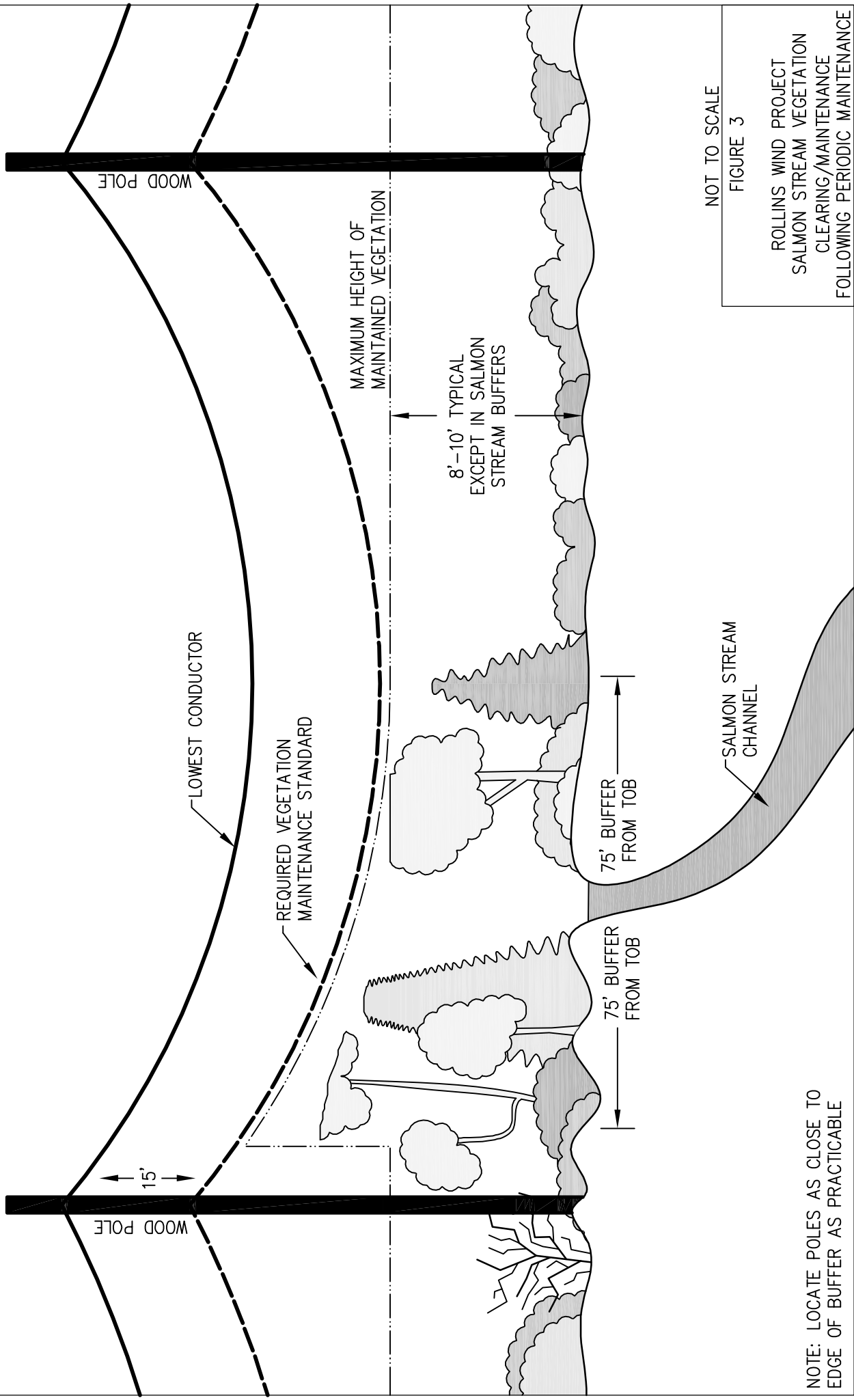
ROLLINS WIND PROJECT
 TYPICAL ROW VEGETATION
 CLEARING/MAINTENANCE

NOTE: WATERBODY BUFFERS ARE 25' WIDE
 UNLESS SITE SPECIFIC BUFFER APPLIES.



NOTE: LOCATE POLES AS CLOSE TO
EDGE OF BUFFER AS PRACTICABLE

NOT TO SCALE
 FIGURE 2
 ROLLINS WIND PROJECT
 SALMON STREAM VEGETATION
 CLEARING/MAINTENANCE
 PRIOR TO PERIODIC MAINTENANCE



NOT TO SCALE
 FIGURE 3

ROLLINS WIND PROJECT
 SALMON STREAM VEGETATION
 CLEARING/MAINTENANCE
 FOLLOWING PERIODIC MAINTENANCE

NOTE: LOCATE POLES AS CLOSE TO
 EDGE OF BUFFER AS PRACTICABLE