

**Appendix G**  
**Long-Term Right-of-Way Vegetation Maintenance Program**

## **Appendix G: Long-Term Right-of-Way Vegetation Maintenance Program**

### **A. OVERVIEW**

The right-of-way (ROW) between the Wildwood and Riverhead Substations contains segments of turfgrass, agricultural fields, and managed brush. As Project construction does not require excavation or use of heavy equipment, extensive clearing is not needed. As noted in the Environmental Management and Construction Plan, a 300 foot trench south of the Wildwood Substation would be constructed as part of this project. Since the trench would be constructed within an existing and maintained ROW, vegetative disturbance would be minimal.

No permits are required for maintenance activities within an existing right-of-way.

### **B. ROW MAINTENANCE PROGRAM**

The existing ROW maintenance program is described below:

#### **APPROVED MATERIALS AND METHODS**

- Approved materials include Roundup, Roundup Pro, Accord, and other glyphosate products labeled for ROW use; Garlon (Triclopyr); Escort (Metsulfuron methyl); Krenite (Fosamine ammonium); and Arsenal and Stalker (Imazapyr). Any other active ingredients must be approved by LIPA prior to bid submittal for any work to be performed with ROWs.
- Non-toxic adjuvants to improve spray performance are also used as needed.
- Approved methods include selective low volume stem/foliar and high volume stem/foliar. Any other methods must be approved by LIPA prior to bid submittal for any work to be performed with the ROW.
- On the ROW within or adjacent to crops, only Accord or other foliage active herbicides are permitted for use, in a manner and under such wind conditions that no drift damage may occur. Herbicides with root uptake or soil residual properties are not permitted for use within or adjacent to croplands.

#### **TARGET AND NON-TARGET SPECIES:**

Table 1 below presents a list of incompatible, semi-compatible, and compatible species that may be found within the ROW.

- Target tree species for control are trees capable of growing to line height, including all incompatible species listed in Table 1. These species are selectively controlled in the ROW. In addition, the following species shall also be controlled: Autumn Olive, Mile-a-Minute, Japanese knotweed, and any Sumac or Scrub Oak that have exceeded 8 feet in height.
- Non-target species include all compatible species and most semi-compatible species. Compatible species listed in Table 1 are not treated and all reasonable measures are taken to preserve them.

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- Semi-compatible species listed in Table 1 are not treated in most cases, except where they exist within 10 feet of an existing transmission pole, tower, or guy wire.
- Non-listed plants are evaluated as to growth height potential to determine need for treatment.
- When work is performed within the ROW by a contractor, it is the contractor's responsibility to provide the necessary in-field orientation to educate personnel on which species to treat.

**Table 1  
Vegetation Common to the ROW**

<b>A. Moist to Wet Sites</b>					
<i>Incompatible Species – generally unacceptable near transmission lines</i>		<i>Semicompatible Species – may be troublesome in some locations</i>		<i>Compatible Species – Generally acceptable near transmission lines</i>	
<i>Acer negundo</i>	Box Elder	<i>Aralia elata</i>	Angelica Tree	<i>Agrostis spp</i>	Bentgrass
<i>Acer platanoides</i>	Norway Maple	<i>Baccharis halimifolia</i>	Groundsel Tree	<i>Alliaria officinalis</i>	Garlic Mustard
<i>Acer rubrum</i>	Red Maple	<i>Celastrus orbiculatus</i>	Japanese bittersweet	<i>Artemisia vulgaris</i>	Mugwort
<i>Acer saccharinum</i>	Silver Maple	<i>Clethra ainifolia</i>	Sweet Pepperbush	<i>Aster spp</i>	Aster
<i>Ailanthus altissima</i>	Tree of Heaven	<i>Comus florida</i>	Flowering Dogwood	<i>Bidens frondosa</i>	Beggar's Ticks
<i>Fraxinus spp.</i>	Ash	<i>Crataegus spp</i>	Hawthorn	<i>Brassica spp</i>	Mustard
<i>Liriodendron tulipifera</i>	Tuliptree	<i>Lonicera japonica</i>	Japanese Honeysuckle	<i>Cirsium spp</i>	Thistle
<i>Morus spp.</i>	Mulberry	<i>Malus spp</i>	Crabapple	<i>Equisetum arvense</i>	Horsetail
<i>Nyssa sylvatica</i>	Black Gum	<i>Parthenocissus quinquefolia</i>	Virginia Creeper	<i>Festuca spp</i>	Fescue
<i>Pinus strobus</i>	White Pine	<i>Phragmites communis</i>	Common Reed	<i>Fragaria virginiana</i>	Strawberry
<i>Platanus occidentalis</i>	American Sycamore	<i>Polygonum scandens</i>	False Buckwheat	<i>Galium spp</i>	Bedstraw
<i>Populus deltoids</i>	Cottonwood	<i>Rhus coppalina</i>	Shining sumac	<i>Geranium maculatum</i>	Geranium
<i>Prunus avium</i>	Sweet Cherry	<i>Rhus glabra</i>	Smooth sumac	<i>Impatiens biflora</i>	Touch Me Not
<i>Prunus serotina</i>	Black Cherry	<i>Rosa multiflora</i>	Rose	<i>Lindera benzoin</i>	Spicebush
<i>Quercus alba</i>	White Oak	<i>Rubus spp</i>	Blackberry and relatives	<i>Lolium spp</i>	Ryegrass
<i>Quercus bicolor</i>	Swamp Oak	<i>Smilax rotundifolia</i>	Greenbrier	<i>Lythrum salicaria</i>	Purple Loosestrife
<i>Quercus palustris</i>	Pin Oak	<i>Toxicodendron radicans</i>	Poison Ivy	<i>Onoclea sensibilis</i>	Sensitive Fern
<i>Quercus rubra</i>	Red Oak	<i>Viburnum dentatum</i>	Arrowwood	<i>Panicum spp</i>	Panic Grass
<i>Quercus velutina</i>	Black Oak	<i>Vitis spp</i>	Grape	<i>Phytollaca Americana</i>	Pokeweed

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**Table 1 (cont'd)  
Vegetation Common to the ROW**

<b>A. Moist to Wet Sites</b>					
<i>Robinia pseudoacacia</i>	Black Locust			<i>Poa spp</i>	Bluegrass
<i>Salix babylonica</i>	Weeping Willow			<i>Polygonum caespitosum</i>	Smartweed
<i>Sassafras albidum</i>	Sassafras			<i>Solidago spp</i>	Goldenrod
<i>Tilia Americana</i>	Basswood			<i>Trifolium spp</i>	Clover
				<i>Vaccinium spp</i>	Blueberry and Cranberry
<b>B. Dry Sites</b>					
<i>Ailanthus altissima</i>	Tree of Heaven	<i>Amelanchier spp</i>	Shadbush	<i>Andropogon scoparius</i>	Little Bluestem
<i>Betula populifolia</i>	Grey Birch	<i>Baccharis halimifolia</i>	Groundsel Tree	<i>Arctostaphylos uva ursi</i>	Bearberry
<i>Carya spp</i>	Hickory	<i>Celastrus orbiculatus</i>	Japanese bittersweet	<i>Aronia spp</i>	Chokeberry
<i>Morus spp</i>	Mulberry	<i>Crataegus spp</i>	Hawthorn	<i>Artemesia vulgaris</i>	Mugwort
<i>Pinus rigida</i>	Pitch Pine	<i>Juniperus virginiana</i>	Red Cedar	<i>Aster spp</i>	Aster
<i>Populus deltoids</i>	Cottonwood	<i>Lonicera japonica</i>	Japanese Honeysuckle	<i>Bidens frondosa</i>	Beggar's Ticks
<i>Populus grandidentata</i>	Bigtooth Aspen	<i>Malus spp</i>	Crabapple	<i>Brassica spp</i>	Mustard
<i>Prunus serotina</i>	Black Cherry	<i>Parthenocissus quinquefolia</i>	Virginia Creeper	<i>Carex pennsylvanicus</i>	Sedge
<i>Quercus alba</i>	White Oak	<i>Rhus coppalinum</i>	Shining sumac	<i>Deschampsia flexuosa Wavy</i>	Hairgrass
<i>Quercus coccinea</i>	Scarlet Oak	<i>Rhus glabra</i>	Smooth sumac	<i>Festuca spp</i>	Fescue
<i>Quercus montana</i>	Chestnut Oak	<i>Rubus spp</i>	Blackberry and relatives	<i>Galium spp</i>	Bedstraw
<i>Quercus velutina</i>	Black Oak	<i>Smilax rotundifolia</i>	Greenbrier	<i>Gaylussacchia spp</i>	Huckleberry
<i>Robinia pseudoacacia</i>	Black Locust	<i>Toxicodendron radicans</i>	Poison Ivy	<i>Hieracium spp</i>	Hawkweed
<i>Sassafras albidum</i>	Sassafras			<i>Hudsona ericoides</i>	False Heather
				<i>Kalmia latifolia</i>	Mountain Laurel
				<i>Lathyrus latifolius</i>	Pea
				<i>Lespedeza spp</i>	Bush Clover
				<i>Lyonia mariana</i>	Staggerbush
				<i>Myrica pennsylvanica</i>	Bayberry
				<i>Panicum spp</i>	Panic Grass
				<i>Phytollaca americana</i>	Pokeweed
				<i>Quercus ilicifolia</i>	Scrub Oak
				<i>Rubus hispidus</i>	Dewberry
				<i>Smilax glauca</i>	Catbrier
				<i>Solidago spp</i>	Goldenrod
				<i>Vaccinium spp</i>	Blueberry and Cranberry

*CRITERIA FOR SELECTIVE ELIMINATION OF TARGET SPECIES*

- Target species are treated individually and selectively in a manner that eliminates the target plant while at the same time preserving the non-target species nearby. It is understood that some incidental damage to adjacent and underlying non-target species occurs. When work is performed within the ROW by a contractor, the contractor shall assure that such damage is kept to a minimum.
- Only where target species occur as a contiguous group of plants, the group is treated as a unit (broadcast spray). When work is performed within the ROW by a contractor, the contractor shall assure that damage to adjacent and underlying plants is kept to a minimum.
- All woody vegetation is treated if located:
  - under transmission conductors;
  - 10 feet from the base;
  - within a 10 foot radius surrounding transmission poles; and
  - within 15 feet of the existing ROW access road(s) or ROW edge.

In these areas, grasses and herbs are preserved as well as possible within the limitations of the herbicides being used.

- Trees that have been left at ROW street crossings as visual buffers are not treated. These trees typically show evidence of repeated trimming.

**CRITERIA FOR PERFORMANCE**

- When work is performed within the ROW by a contractor, it is the responsibility of the contractor to perform all work in accordance with the pesticide label(s) and all applicable federal and State pesticide laws. LIPA/~~National Grid~~ shall be held harmless in any regulatory or civil actions resulting from the improper use of pesticides by the contractor.
- The contractor shall employ methods which are appropriate for the prevailing vegetation, terrain, land use, weather, season, and other conditions present at the time and place of treatment.
- Target species are expected to develop symptoms within a time period appropriate for the materials and methods used.
- A second inspection will be conducted to determine if all target plants have been eliminated. This inspection will occur in the following growing season for late summer and fall applications. The contractor shall provide re-treatment at no additional charge for missed trees the following season.
- Target species which have not yet emerged from beneath the overlying non-target canopy need not be treated. Height of these plants depends on the height of the overlying or adjacent canopy (e.g., a 12 inch tree below 24 inch shrubs is not treated, but a 12 inch tree surrounded by 6 inch grass shall be treated).

## TREATMENT TECHNIQUES

### *SELECTIVE CHEMICAL INTEGRATED VEGETATION MANAGEMENT (IVM) IN BRUSH AREAS*

Brush areas along the ROW are maintained with selective chemical methods on a four to five year cycle. The primary technique employed is low-volume foliar application, with limited high-volume foliar treatment as needed for denser stands. Treatments are performed in late summer to optimize translocation and reduce visible browning-out.

Chemicals that have historically been, and will continue to be employed on the Project ROW, as necessary, include active ingredients as follows

- Glyphosate (Accord)
- Metsulfuron methyl (Escort)
- Imazapyr (Arsenal)
- Fosamine ammonium (Krenite)

All chemicals are applied in accordance with New York State approved labeling, limited to approved usages and dosages.

### *Herbicide Treatment Locations*

The following areas along the ROW have historically been treated with herbicides, and will continue to be treated as necessary:

- Poles 139 to 128 E/O Residences to Forest Hollow Rd
- Poles 113 to 109 Hulse Landing Rd. to Agricultural Field edge
- Poles 103 to 93 Forest edge to Fresh Pond Rd.
- Poles 82 to 77 Forest edge to Field edge (Between Fresh Pond Rd. and Edwards Ave.)
- Poles 43 to 19 Middle Rd. to NY Route 25

### *REGULAR MOWING IN RESIDENTIAL AREAS*

The ROW in Shoreham and Wading River is mowed three times per year in residential areas, typically in late May, mid-July, and late-September. Trash and debris cleanup is also performed during mowing operations. Equipment includes tractor / flail mowers, and additional small mowers and trimmers to maintain the highly visible street crossings

### *PRIVATE CULTIVATION OF FARMLANDS ALONG THE ROW*

Cultivation of croplands all but eliminates interference with conductors and therefore, no overall ROW treatments are performed in these areas. Limited maintenance activity at pole locations in these agricultural areas may include mechanical and targeted spot chemical treatments as needed, primarily to control climbing vines.

### *MECHANICAL METHODS*

Brush hogging and/or selective removal of pitch pines is the primary method of ROW maintenance along the ROW south of the Peconic River crossing, continuing east to the Riverhead Substation. Soil within the ROW in this area is a very dry, Plymouth-Carver

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Association, characterized by pitch pine and scrub oak cover. This vegetation recovers very slowly after treatment, allowing for return cycles of six to eight years.

The area of the ROW in Wading River, running along the south shoulder of North Country Road, until it turns northward across North Country Road, is maintained by tree trimming and mechanical pole clearing only. This area is comprised of the front yards of residences.

In keeping with the preferred shrubby vegetation cover sought for New York State ROWs, spot brush hogging is sometimes required to improve access to forest edges when tree trimming is to be performed.

### **UNDESIRABLE RIGHT OF WAY USES**

The two most serious problems are illegal dumping of trash and use of the ROW for dirt bikes and other All Terrain Vehicles (ATV's). Barriers effectively stop dumping from outside sources, but these can be overcome with a bolt cutter or power saw, which occurs with some regularity in remote areas. Also, ATVs often find alternate routes around barriers, or access ROWs from adjacent properties that are not fenced or barricaded.

LIPA uses various physical deterrents for unauthorized vehicular access to the ROWs including guard rails and gates at road crossings. Steel guard rails with pipe gates/locking devices are most common. Heavily trespassed areas have steel guard rail with heavy-duty steel gates. In areas where there is very high trespass pressure, LIPA may close off one access with a permanent steel guard rail barricade. There are no fences or guard rails installed along ROW edges.

To assist in the prosecution of these trespassers, LIPA has an agreement with the Nassau and Suffolk Police Departments to sign formal complaints if trespassers are apprehended on LIPA owned ROWs. No such agreements exist on easements.

### **C. PROJECT ROW MAINTENANCE**

In addition to the above maintenance program, provided below is a description of ROW maintenance that will be performed prior to Project construction. An access road of sufficient width to allow vehicles to pass is present over much of the Project ROW. Consistent with overall long-term maintenance, where the road width is insufficient, brush will be mowed to provide a 15 foot wide path as needed. In addition, a work space of an approximately 20 foot radius will be mowed around each pole as needed. Thus, vegetation management for the Project will consist of limited brush mowing to provide truck access to each pole, and an adequate, safe workspace around each pole. No herbicides will be used in preparation of the Project; however, herbicides will continue to be used as part of the long-term maintenance plan for this ROW. Since Poles 16 and 17 are located within wetlands, temporary swamp mats will be utilized to mitigate any potential impact to the wetland areas. If feasible, work on Pole 16 would be performed from the access road if a truck can reach the pole without entering the right-of-way. All mats will be cleaned prior to entry and use in the area and prior to their removal from freshwater wetlands and adjacent areas. Brush mowing will be kept to the immediate area necessary to access the poles and will be conducted with cleaned equipment before the swamp mats are laid.

The specified brush mowing device will be a horizontal-shaft brush hog (Fecon or equivalent) to minimize cut stubble and stumpage, which might present a tripping hazard and cause tire damage.

**Appendix G: Long-Term ROW Vegetation Maintenance Program**

It is anticipated that all vegetation work will be performed during the dormant season in 2014. Subsequent to Project completion, ROW maintenance will return to the ongoing programs as described above.

A site-specific summary of proposed vegetation management work along the Project ROW is also provided as Table 2 below.

**Table 2  
Project ROW Vegetation Maintenance**

Pole To Pole		Boundaries	Vegetation	Program	Proposed Work
170	166	Wildwood Substation to s/o Zophar Mills Road	Undesirable: <i>Pinus rigida</i> , <i>Sassafras albidum</i> , <i>Quercus coccinea</i> , <i>Robinia pseudoacacia</i> , <i>Prunus serotina</i> , <i>Populus spp.</i> 6-8', approx.150 S/A. Desirable: <i>Gaylussacia spp.</i> , <i>Vaccinium spp.</i> , <i>Baptisia indica</i> , <i>Rhus coppalina</i> , <i>Lyonia sp.</i> , <i>Rubus spp.</i> , <i>Myrica asplenifolia</i> , grasses and forbs. Semidesirable: <i>Toxicodendron radicans</i> , <i>Juniperus virginiana</i> , <i>Eleagnus umbellata</i> , <i>Rosa multiflora</i>	Ivm: Low Volume Foliar	Mow 15' access as needed, 20' radius at poles
165	150	s/o Zophar Mills Road To e/o Wading River Road	Mowed grass	Mowing 3x/yr.	Minimal mowing at poles
149	147	e/o Wading River Road to line turning north	Cropland	Cultivated - poles only	Minimal mowing at poles
146	140	Line turning north to easternmost residential property	Undesirable: <i>Quercus coccinea</i> , <i>Quercus rubra</i> , <i>Robinia pseudoacacia</i> , <i>Prunus serotina</i> , <i>Populus spp.</i> , <i>Betula populifolia</i> , some ornamentals, height to line clearance specs	Tree trimming	Mow access as needed, minimal mowing at poles
139	128	E/o residences to Forest Hollow Road	Undesirable: <i>Sassafras albidum</i> , <i>Quercus coccinea</i> , <i>Quercus rubra</i> , <i>Quercus alba</i> , <i>Betula populifolia</i> , <i>Robinia pseudoacacia</i> , <i>Prunus serotina</i> , <i>Acer platanoides</i> , <i>Pinus strobus</i> , <i>Ailanthus altissima</i> , 10-12' approx.150 S/A. Desirable: <i>Gaylussacia spp.</i> , <i>Vaccinium spp.</i> , <i>Rhus coppalina</i> , <i>Rubus spp.</i> , <i>Lonicera sp.</i> , <i>Amelanchier sp.</i> , <i>Crataegus sp.</i> , grasses and forbs. Semidesirable: <i>Toxicodendron radicans</i> , <i>Juniperus virginiana</i> , <i>Eleagnus umbellata</i> , <i>Rosa multiflora</i>	Ivm: Low Volume Foliar	Mow 15' access as needed, 20' radius at poles
127	114	Forest Hollow Road to Hulse Landing Road	Cropland	Cultivated - poles only	Minimal mowing at poles
113	109	Hulse Landing Road to field edge	Undesirable: <i>Sassafras albidum</i> , <i>Quercus coccinea</i> , <i>Quercus rubra</i> , <i>Quercus alba</i> , <i>Robinia pseudoacacia</i> , <i>Prunus serotina</i> , 6-8' on edges. Desirable: <i>Quercus ilicifolia</i> , <i>Gaylussacia spp.</i> , <i>Rhus coppalina</i> , <i>Rubus spp.</i> , <i>Aronia arbutifolia</i> , grasses and forbs. Semidesirable: <i>Toxicodendron radicans</i> , <i>Juniperus virginiana</i> , <i>Eleagnus umbellata</i> , <i>Rosa multiflora</i>	Ivm: Low Volume Foliar	Mow 15' access as needed, 20' radius at poles
108	104	Field edge to forest edge	Cropland	Cultivated - poles only	Minimal mowing at poles
103	93	Forest edge to Fresh Pond Road	Undesirable: <i>Pinus rigida</i> , <i>Sassafras albidum</i> , <i>Quercus rubra</i> , <i>Quercus alba</i> , <i>Juniperus virginiana</i> , <i>Prunus serotina</i> , 6-8' approx.200 S/A. Desirable: <i>Quercus ilicifolia</i> , <i>Gaylussacia spp.</i> , <i>Rhus coppalina</i> , <i>Rubus spp.</i> , <i>Aronia arbutifolia</i> , <i>Baptisia indica</i> , <i>Myrica pennsylvanica</i> , grasses and forbs. Semidesirable: <i>Toxicodendron radicans</i> , <i>Juniperus virginiana</i>	Ivm: Low Volume Foliar	Mow 15' access as needed, 20' radius at poles
92	83	Fresh Pond Road to forest edge	Cropland	Cultivated - poles only	Minimal mowing at poles



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82	77	Forest edge to field edge	Undesirable: <i>Pinus rigida</i> , <i>Sassafras albidum</i> , <i>Quercus rubra</i> , <i>Quercus alba</i> , <i>Betula populifolia</i> , <i>Prunus serotina</i> , 6-8' approx.300 S/A. Desirable: <i>Quercus ilicifolia</i> , <i>Gaylussacia spp.</i> , <i>Rhus coppalina</i> , <i>Rubus spp.</i> , grasses and forbs.	Ivm	Mow 15' access as needed, 20' radius at poles
76	44	Field edge to Middle Road	Cropland	Cultivated - poles only	Minimal mowing at poles
43	29	Middle Road to County Road 58	Undesirable: <i>Pinus rigida</i> , <i>Sassafras albidum</i> , <i>Quercus coccinea</i> , <i>Quercus rubra</i> , <i>Ailanthus altissima</i> , <i>Prunus serotina</i> , 10-12" approx.220 S/A. Desirable: <i>Quercus ilicifolia</i> , <i>Myrica pennsylvanica</i> , <i>Gaylussacia spp.</i> , <i>Vaccinium spp.</i> <i>Rhus coppalina</i> , <i>Rubus spp.</i> , <i>Baptisia indica</i> , grasses and forbs. Semidesirable: <i>Toxicodendron radicans</i> , <i>Juniperus virginiana</i> , <i>Eleagnus umbellata</i> , <i>Rosa multiflora</i>	Ivm: Low Volume Foliar	Mow 15' access as needed, 20' radius at poles
28	19	County Road 58 to NYS Route 25	Undesirable: <i>Pinus rigida</i> , <i>Sassafras albidum</i> , <i>Quercus coccinea</i> , <i>Ailanthus altissima</i> , <i>Prunus serotina</i> , 8-10" approx.100 S/A. Desirable: <i>Quercus ilicifolia</i> , <i>Myrica asplenifolia</i> , <i>Gaylussacia spp.</i> , <i>Vaccinium spp.</i> <i>Rhus coppalina</i> , <i>Rubus spp.</i> , <i>Baptisia indica</i> , grasses and forbs.	Ivm: Low Volume Foliar	Minimal mowing at poles
18	17	NYS Route 25 to Peconic River	Brush	Tree trimming	Mow access to poles
16	1	Peconic River to Riverhead Substation	Undesirable: <i>Pinus rigida</i> , <i>Robinia pseudoacacia</i> , <i>Sassafras albidum</i> , <i>Quercus coccinea</i> , <i>Ailanthus altissima</i> , <i>Prunus serotina</i> , 8-10" approx.50 S/A. Desirable: <i>Quercus ilicifolia</i> , <i>Myrica asplenifolia</i> , <i>Gaylussacia spp.</i> , <i>Vaccinium spp.</i> <i>Rhus coppalina</i> , <i>Rubus spp.</i> , <i>Baptisia indica</i> , grasses and forbs.	Limited brush mowing and hand removal	Mow 15' access and 20' radius at pole

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