FOREWARD

This Vegetation Management Specification (VMSpec) documents the objectives, practices and procedure for vegetation management on National Grid companies' electric rights-of-way. The VMSpec is primarily aimed at the transmission system, 115kV and higher in New York (NY) and 69kV and higher in New England (NE), but addresses vegetation management on all electric rights-of-way. The VMSpec also defines the responsibilities of the Company personnel and contractors, identifies procedures to be followed by contractors performing all work and defines the clearance requirements between conductors and vegetation acceptable to the Company for maintaining reliable electric transmission service.

Questions or inquiries regarding information provided in this document should be referred to the Manager of Vegetation Strategy.

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Record of Change

Revision	Date	Description
1	December 20, 2001	Updates
2	December 9, 2002	Updates
3	April 22, 2004	Updates
4	November 1, 2005	Complete review and total rewrite to integrate NE and NY operations info.
5	March 1, 2007	Updates and conformance with NERC FAC-003-1
6	March 1, 2008	Updates
7	October 21, 2009	Updates
8	January 28, 2011	Updates
9	September 28, 2011	Updates for 2011 Procurement Event.
10	October 6, 2011	Updates for 2012 Procurement Event.
11	August 21, 2012	Updates for 2013 Procurement Event.
12	July 31, 2013	Updated to Meet Requirements of FAC-003-2. Updates for 2014 Procurement Event.
13	July 1, 2014	Updated to Meet Requirements of FAC-003-3. Updates for 2015 Procurement Event.

14	June 15, 2016	Updated to Meet Requirements of FAC-003-4. Updates for 2017 Procurement Event.

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1.0 Introduction

1.1 Purpose

The purpose of this Right-of-Way (ROW) Vegetation Management Specification (VMSpec) is to document the requirements for vegetation management on transmission and distribution ROW for National Grid. This VMSpec defines:

- Objectives, strategies and approved practices and procedures for all phases of vegetation management on electric ROW;
- Clearance requirements between conductors and vegetation acceptable to National Grid for maintaining reliable electric transmission service;
- Responsibilities of Company personnel and contractors;
- Procedures to be followed by contractors performing all work within the scope of this VMSpec.

1.2 Scope

The requirements of the VMSpec apply to all National Grid electric ROWs.

2.0 Definitions

Annual Work Plan – Identifies the vegetation management field work that will be carried out in a specified year.

Article VII ROW – a ROW approved for construction and maintenance under the Article VII regulations of the N.Y.S. Public Service Commission. These lines generally have additional environmental protections and restrictions associated with access, vegetative screening, integrated management, etc.

Basal Application – Herbicide application method in which the lower portion of the capable species stems and root collar is completely covered by the herbicide solution.

Capable Species – – Tree and shrub species that have the ability to grow into the National Grid Clearance Distance (NGMVCD) from conductors.

Clearance Distances – 1) the At Time of Vegetation Management (ATVM) Clearance Distance from vegetation, in a radius around the conductor, to be achieved at the time of vegetation management and 2) National Grid Minimum Vegetation Clearance Distance (NGMVCD) from vegetation, in a radius around the conductor, between conductors and vegetation to be maintained under all rated electrical operating conditions. 3) Minimum Vegetation Clearance Distance (MVCD) from vegetation, in a radius around the conductor derived from the Gallet Equations as defined by FAC 003-4 applying to those lines associated with that standard.

Danger Tree – A tree on or off the ROW that if were cut or failed could contact electric lines.

Forestry GIS Forestry Geographic Information System

Hand Cutting – Vegetation management method in which woody vegetation is felled through the use of hand tools, including chainsaws and brush saws.

Hazard Tree – Danger trees which due to species and/or structural defect are likely to fail and fall into the electric facility.

Herbicide – Chemical used to control, suppress or kill plants or severely interrupt their normal growth processes.

I**mminent threat –** An imminent threat is vegetation condition that poses an increased risk to the reliable operation of a particular transmission circuit and therefore requires 1) mitigation and vegetation condition typically within 24 hours, and 2) notifying the system operator.

Integrated Vegetation Management (IVM) – IVM is an adaptation of Integrated Pest Management (IPM) where the pest is tall growing, undesirable vegetation. IPM/IVM is a system of controlling pests in which pests are identified, action thresholds considered, all possible control options evaluated and selective, physical, biological and chemical controls are considered. When chemical controls become necessary to control and prevent the growth of undesirable, tall growing woody species, the Company is committed to employing selective, targeted applications. These treatments shall use approved herbicide products and mixtures that target specific plants or plant communities in a manner calculated to control and eliminate the tall-growing, undesirable woody species, while preserving as much of the small, compatible woody shrub and herbaceous vegetation as is practical.

IROL - Interconnection Reliability Operating Limit

ISO – Independent System Operator

MA DAR – Massachusetts Department of Agricultural Resources

Mowing – the use of mechanical equipment such as a tractor with mounted rotary or reel type mower to cut vegetation at a uniform height above the surface of the soil. Common equipment types are Brush Hogs or Hydro-ax.

MVCD – Minimum Vegetation Management Distance
NERC – North American Electric Reliability Council

NERC Regulated Circuits – Circuits regulated by FAC 003-4 are all circuits operated at above 200 kV and voltages below 200kV that are designated as IROL by the ISO.

NGMVCD – National Grid Minimum Vegetation Clearance Distance

NH PES – New Hampshire Pesticide Bureau

NPCC – Northeast Power Coordinating Council

NY DPS – New York Department of Public Service

NY Part 84 – The New York Long-Range Transmission ROW Management Program required by the NY Public Service Commission

Non-Selective Treatment – the broadcast application of approved herbicide products and mixtures to all woody vegetation

Pasture – Fenced area used for grazing livestock.

Pruning – the cutting and removal of tree branches to provide specified clearance distance between vegetation and the conductors. See ANSI A300 for additional detail.

RI DEM – Rhode Island Department of Environmental Management

Right-of-Way (ROW) - The corridor of land under a transmission line(s) needed to operate the line(s). The width of the corridor is established by engineering or construction guidance as documented in either construction documents, pre-2007 vegetation maintenance records, or by the blowout standard in effect when the line was built. The ROW width in no case exceeds the applicable Transmission Owner's or applicable Generator Owner's legal rights but may be less based on the aforementioned criteria (FAC 003-4).

Selective Mowing – Mowing small areas of high-density capable species, or dense woody vegetation encroaching upon roadways or trails to structures or adjacent to structures.

Selective Treatments – Removal of individual undesirable woody plant species through the use of a controlled vegetation management method.

Sensitive Area – Areas on ROWs where legal, visual, or environmental impacts/concerns require compromises to the general IVM program.

Slash – All branches, tops, small diameter main stems and debris resulting from any cutting operation.

Stump Application – Herbicide application method in which the herbicide is applied only to the freshly cut surface of the stump of the capable tree.

System Operator – Transmission Control Center's personnel assigned for decision making during the need to operate transmission lines.

"T" Sheet – Strip map of a ROW showing line features (Sometimes referred to as "Q-Sheets" or "Plan & Profile")

Transmission – includes all electric lines 115kV and higher in New York and 69kV and higher in New England, used to transport electricity between various generation, switching, and distribution substations.

Tree Removal – the cutting and felling of trees, including wood and brush disposal. Removal may include, where specified, the use of approved herbicides to enable the chemical removal of the target plant(s) from the ROW.

Utility Forest – the forested areas within or adjacent to ROW that contain trees that are tall enough or may grow tall enough to impact the reliability of the transmission facility.

Vegetation Inspection – The systematic examination of vegetation conditions on a ROW and those vegetation conditions under the Transmission Owner's or applicable Generator Owner's control that are likely to pose a hazard to the line(s) prior to the next planned maintenance or inspection. This may be combined with a general line inspection (FAC 003-4).

VMSpec –Vegetation Management Specification

VMP –Vegetation Management Procedure

VMS –Vegetation Management Strategy

VAAFM – Vermont Agency of Agriculture, Food and Markets

VIPER - (**V**egetation **I**nspection **P**lanning **E**valuation and **R**eporting) - National Grid's vegetation management system; a combination of databases. GIS and mobile applications.

Visual Buffer – areas of vegetation preserved on the ROW, on both sides of selected improved road crossings, yards, for the purpose of minimizing the visual impacts and linear view of the ROW for motorists.

Water – standing or running water, existing at the time of maintenance operations, which has impact outside the ROW.

Wire Zone/Border Zone – the wire zone is defined as that portion of the ROW floor that is situated either directly beneath the conductor area or for a distance extending approximately ten (10) feet to either side of the conductor. The border zone is that portion of the ROW floor situated to the outside of the wire zone extending to the ROW edge. It is sometimes referred to as a transition zone between the wire zone and the adjacent forest edge. The wire zone mid-span is the portion of the span where the conductor is at or near its lowest ground clearance distance, generally 60-70% of the span length.

YOP – Yearly Operational Plan, Massachusetts

3.0 General Policy/Requirements

3.1 The maintenance cycle for all ROWs shall be: ROW Floor Program, three to eight years and off ROW Sideline Program, three to sixteen years.

3.2 Herbicide treatments within the context of an Integrated Vegetation Management (IVM) strategy, shall be the preferred method of vegetation management.

3.3 Hand cutting or mowing shall be used where herbicide use is prohibited.

3.4 All vegetation management operations shall be conducted in a safe, effective manner in conformity with Federal and State laws, regulations and permit conditions.

3.5 All vegetation management operations shall be conducted in conformance with national and regional standards including but not limited to NERC FAC-003-4 and ISO 14001.

3.6 All state permits necessary for any vegetation management operations shall be obtained.

3.7 All applicable state notification procedures shall be followed.

3.8 National Grid Forestry staff, in consultation with vegetation management contractors, shall establish procedures for notifying nearby residents of all vegetation management activities.

3.9 National Grid Forestry staff and/or contractors shall respond quickly to any questions or complaints relating to ROW vegetation management from the public and/or government agencies.

3.10 Appropriately licensed, certified and qualified contractors shall be retained to implement National Grid's vegetation management programs. Contractors shall conduct all vegetation management operations consistent with National Grid safety requirements and the ANSI Z-133 safety standard.

3.11 National Grid Forestry staff shall provide local supervision, coordination and enforcement of National Grid's Vegetation Management Procedures (VMP) and this Vegetation Management Specification (VMSpec) for contractors.

3.12 The document control process for the VMSpec is as follows: This document is generally updated annually and distributed as hard copy. The applicable hard copy cover date shall be for the current year.

4.0 Vegetation Management Program

4.1 Objectives

The primary objective of National Grid's Vegetation Management Program is to minimize interruptions due to vegetation. Other objectives include providing a clear and safe work space and access for maintenance activities.

4.2 Strategy

National Grid's strategic approach to vegetation management within the ROW is to establish and maintain ROWs that are largely clear of all capable vegetation while maintaining a stable low-growing plant community that is pleasing to the eye and beneficial to wildlife. National Grid's strategic approach to managing vegetation adjacent to the ROW is to prune and/or remove danger trees and/or hazard trees where property rights allow vegetation management work.

ROWs that are largely clear of capable vegetation present a very low risk of vegetation-caused interruptions. Vegetation adjacent to ROWs (danger and hazard trees) presents a greater risk of interruptions. The risk from danger trees is primarily related to two non-biotic variables: 1) distance from conductor to the adjacent tree line, and 2) conductor distance above the ground; and three biotic factors: 1) height of trees, 2) tree species, and 3) tree health and condition. National Grid seeks to mitigate risk of interruptions from trees adjacent to the ROW through site specific management of these variables.

Vegetation management work on transmission and distribution ROW is organized into two programs:

- ROW Floor Program – management of vegetation within the ROW corridor, and
- Sideline Tree Program – management of vegetation adjacent to the ROW corridor.

4.2.1 Contractors

Appropriately certified and qualified contractors are retained to carry out nearly all hands-on vegetation management work on National Grid ROWs.

4.2.2 Inquiries and Complaints from Landowners and/or Public

Vegetation Operations staff and/or contractors shall respond quickly to any questions or complaints relating to ROW vegetation management from the public and/or government agencies. Inquiries and/or complaints from external parties will be documented and reported to the National Grid Vegetation Operations Supervisor.

4.3 Clearance Standards

National Grid specifies clearance distances to be achieved at the time of vegetation management work and minimum clearances to be maintained at all times. Clearance standards established by National Grid below conform to the following regulatory standards and industry guidelines:

- North American Electrical Reliability Counsel (NERC) Vegetation Management Standard FAC-003-4;
- National Electric Safety Code (NESC) Rule 218; and
- Applicable State vegetation management standards or regulations.
- FAC 003-4

The clearances in Appendix 10 presented represent distances vegetation must be from all operating conductors (including static wire).

4.4 Exceptions to ATVM Clearances

Legal restrictions and environmental and social concerns may prevent National Grid from achieving ATVM Clearance Distances at various sites across the transmission system. National Grid tracks these sites within the Forestry GIS system. All such sites will be inspected and mitigation procedures taken to assure compliance with NGMVCD

4.5 Imminent Threats of Interruption

Contractor personnel shall report any observed vegetation-related imminent threats that may cause interruptions to the appropriate National Grid Division Forester, who will determine the need to notify

If the line is 230 kV or higher, or a lower voltage that is IROL and the National Grid Division Forester or his/her assigned representative is not available the contractor shall report any observed vegetation-related imminent threats that may cause interruptions to the appropriate Company Regional Control Center as outlined in Appendix 11. The Regional Control Center shall take appropriate action per National Grid Control Center operating procedures. The following describes the reporting process.

4.5.1 **Description**:

An imminent threat is vegetation condition that poses an increased risk to the reliable operation of a particular transmission circuit and therefore requires:

- mitigating the vegetation condition typically within 24 hours, and
- notifying the system operator.

The characteristics of an imminent threat condition usually are:

- vegetation that is approaching or threatens to approach the MVCD,or

- one or more danger trees that appear very likely to contact a transmission line.

4.5.2 Steps for Reporting (See also Appendix 11)

Declaration of Imminent Threat

All vegetation management personnel are required to report an imminent threat to the operation of transmission and sub transmission circuits. Imminent threats to NERC regulated circuits must be reported without delay to the regional control center and the Vegetation Operations Staff.

Communication

All initial communications between vegetation management personnel and the regional control centers are to be spoken (email, voice or text messaging are not acceptable for initial reporting). Enough information about the imminent vegetation risk must be provided for the system operator to decide what action needs to be taken to remove the vegetation without jeopardizing the reliability of the transmission system. Up to date contact lists must be on hand by all vegetation management staff and contractors.

Mitigation Measures

While the system operator monitors the system and reviews options, the vegetation management personnel continues to investigate the threat, notifies National Grid Vegetation Operations staff and reviews options for removal of vegetation. No action to remove vegetation will be performed until directed by the system operator.

Documentation

All communication must be documented and retained by the Vegetation Operations staff. Appendix 11 provides an outline for documentation. Vegetation Operations staff will provide the details to the Vegetation Strategist for determination of required updates to the workplan.

5.0 Contractor Duties and Responsibilities

Vegetation management operations must be conducted according to this ROW VMSpec and according to the written directives of the National Grid Forestry staff. Failure to do so is grounds for removal of the crew from the treatment site by National Grid Forestry staff and possible termination of the contractor's contract.

5.1 Environmental and Safety Compliance

The Contractor shall comply with all applicable Federal, State and local laws and regulations and with the requirements of all permits and approvals obtained by National Grid

National Grid is committed to minimizing its impacts to the environment and requires contractors to demonstrate the same level of commitment as National Grid in the management of the environment. National Grid's commitment to the environment is communicated in the National Grid – Environmental Policy, see Appendix 2.

The contractor shall immediately notify the Company of any release of any quantity of oil or hazardous material. The contractor is responsible to make all required notifications of releases to appropriate regulatory agencies and to ensure that the response to the release is prompt and done in a proper manner.

National Grid Contractor Safety Requirements establish safety requirements for contractors. This documentation is provided during the contractor qualification and bidding process.

All safety incidents shall be reported to the Company. The initial call should be to a National Grid Vegetation Operations Supervisor. All injuries will be entered in the National Grid Incident Management System.

5.2 Qualifications

Contractor shall utilize only experienced and/or trained workers who are appropriately licensed or certified. Workers must conduct themselves professionally at all times. Each herbicide applicator shall hold, at minimum, a pesticide applicators license or equivalent from any state within National Grid service territory and comply with license requirements for the state within which applications are taking place.

Contractor shall utilize appropriately licensed or certified supervisors who are knowledgeable with regard to all aspects of the contracted treatment, and who are responsive to the guidance of National Grid Vegetation Operations Supervisors. Each supervisor must be able to effectively communicate with the public. They must also effectively supervise contractor crews in order to insure the satisfactory completion of the treatment operation. Supervisors of herbicide applications must hold, at minimum, a commercial certification license or equivalent from any state within National Grid service territory and comply with license requirements of the state within which applications are taking place.

5.3 Training

Contractor shall provide their employees with training that includes, but is not limited to, recognition of electrical hazards, working in proximity to energized facilities, identification of operating voltages, minimum approach distances, and other applicable rules and regulations associated with worker safety.

Additionally, National Grid trains vegetation management contractors annually on the contents of this Specification.

5.4 Commencement of Operations

Contractor may not initiate activities without a Purchase Order, with Terms and Conditions attached, from the National Grid Procurement Department. Contractor

shall contact Vegetation Operations staff if a Purchase Order has not been received by the time the ROWs are scheduled for treatment. The contractor must return the signed acknowledgement copy of the Purchase Order to the Procurement Department before any work is done.

5.5 Permits/Plans/Approvals

Contractor shall follow all conditions of state permits/plans/approvals obtained by the Company.

5.5.1 Invasive Species Best Management Practices (NY Only)

In an effort to limit the introduction and spread of invasive plant species, National Grid adopted a group of Best Management Practices (BMP) from the Environmental Energy Alliance of New York (EEANY). These BMPs were accepted by the NYS Department of Environmental Conservation as a means to meet permit requirements for maintenance work, including vegetation maintenance.

A copy of this BMP is located in Appendix 3 of this document and is a requirement for all contractors that work on a National Grid ROW.

5.5.2 Threatened and Endangered Species (New York Only)

In 2012, the U.S. Fish and Wildlife Service issued National Grid an incidental take permit for impacts to the federally endangered Karner blue butterfly and state protected frosted elfin butterfly during its gas and electric operations in New York. The terms of this permit and the associated Habitat Management Plan are attached as Appendix 4 of this document. The plan covers operations, maintenance and construction activities on ROWs in the Eastern and Central Divisions. Contractors shall contact the National Grid Vegetation Operations Supervisor for locations of protected sites on assigned projects.

5.6 Notifications

5.6.1. To National Grid

At least one (1) week prior to the initiation of vegetation management operations on a specific ROW, the contractor must specify to Vegetation Operations staff the date work on that ROW will begin.

At least one (1) week prior to the completion of vegetation management operations on specific ROW, the contractor must specify to Vegetation Operations staff the date work on that ROW will end.

The contractor will notify Vegetation Operations staff of the approximate work schedule the contractor's crew will follow for the treatment year. The contractor shall complete treatment on each ROW segment with as few work interruptions as possible.

The contractor must supply crew work locations on a daily basis by calling the Transmission Call-in system, and/or other parties specified by the Vegetation Operations staff, before the beginning of the workday. The location information

will include the ROW segment number, the contractor company and foreman name, the number of crew members, and the nearest transmission/distribution line structure number. Each crew shall call off the system at the completion of the workday and when relocating to another ROW.

The contractor must keep Vegetation Operations staff informed about crew location, conditions encountered, and problems that arise as work progresses. Should a contractor cause an event on a transmission or distribution line, the contractor must immediately notify the appropriate New England or New York Control Center. Refer to Appendix 1 for a listing of Vegetation Operations staff and Control Center contact information.

The contractor must supply completed daily or weekly time sheet(s) with information regarding all time and materials work as per direction of Vegetation Operations staff.

The contractor shall notify and provide copies of any records/reports of any regulatory inspection by federal, state or municipal officials.

5.6.2 Notifications to Customers/Landowners

The Contractor shall make every reasonable effort to notify nearby residents of all vegetation management activities. They shall also notify any property owner where a yard tree requires pruning or removal. The property owner shall also be notified prior to extensive widening or danger tree removal, unless the Company has provided prior notification or otherwise specified by the National Grid Vegetation Operations Supervisor.

Certain statutes and regulations in New York, Massachusetts (Mass. Notification Law), Vermont, New Hampshire and Rhode Island require notification to residents/occupants of nearby homes/dwellings prior to use of herbicides or other vegetation management. The contractor shall comply with the appropriate state notification statutes and regulations. Documentation of notification shall be maintained by the contractor and provided to Vegetation Operations staff upon request and at the completion of the project. .

Notification materials are presented in Appendix 5.

5.7 Documentation

The Contractor shall provide the following documents:

On a timely basis, the Contractor shall provide supplemental or new information regarding site conditions that affect current or future treatment operations, such as new construction, encroachments, ATVM clearance deficiencies, hazardous conditions, significantly eroded access or ROW, sensitive areas and landowner concerns/requirements to the National Grid Vegetation Operations Supervisor.

The Contractor shall complete and return a completed copy of the Field Inventory or weekly time sheets (as appropriate for NE or NY) to include the treatment date, the type and amount of herbicide used, any approved changes in site density,

treatment method, etc. to the National Grid Vegetation Operations Supervisor, who will then enter the completed work in the Forestry GIS. Submittal of these treatment records is required for final payment; therefore, prior to final payment, the Company will require receipt of a complete treatment record/inventory.

5.8 Interaction with Public

The Company strives in every way possible to maintain good relations with the property owner and general public. The actions of the Contractor reflect on the Company; therefore, the Contractor shall give diligent consideration to the interests of property owners, tenants, and the general public, whenever involved, and shall carry out the work in such a manner as to cause a minimum inconvenience.

The contractor, or his representative, will only respond to inquiries regarding what they are doing, where they are treating, and when they are treating. Copies of appropriate plans or permits may be shown as well. Refer all other inquiries to Vegetation Operations staff.

Landowner complaints must be forwarded immediately by telephone to Vegetation Operations staff. The contractor must provide the name, address and telephone number of the major people involved, as well as a detailed description of the complaint or question.

5.9 Demands that a Treatment Operation Cease

Handle demands that a treatment operation cease as follows:

- Immediately make the work area safe to the public, then move all personnel, equipment and materials to another property and continue work.
- Notify Vegetation Operations staff as soon as practical, if not immediately, of a demand that treatment cease. Upon contacting National Grid Vegetation Operations, relate the chain of events and current status of the situation.
- Do not return to that site until Vegetation Operations staff has notified the contractor when and under what circumstances the crew may return.

5.10 Access

Access to the ROW shall be limited to public road crossings. Where this is not possible, the Contractor shall obtain permission for the use of private roads, driveways, and other access to the ROW from the property owners involved and shall be responsible for any damage thereto. When permission for off ROW access cannot be obtained from the property owners involved, and other ingress/egress is unavailable, the Contractor shall notify the National Grid Vegetation Operations Supervisor or their designee.

In general, vehicular traffic shall be restricted to a 15-foot wide roadway into and along the ROW. When present, existing roads into and along the ROW shall be used as the primary access, and maintained in as good or better condition for the duration of the Contractor's use. Additionally, primary ingress and egress on Article VII ROWs (NY Only) are restricted to designated access routes. Access to

the overall ROW is allowed only for selective vegetation maintenance with all terrain spray units, skidder buckets for danger tree removal, and similar ROW maintenance activities. Other vehicles must remain on the designated access roads. Appropriate efforts to minimize unnecessary or excessive environmental or vegetation damage are required. Repair or replacement of excessive or unnecessary damage shall be the responsibility of the Contractor.

5.11 Site Conditions

Unreasonable site damage or destruction during any phase of the vegetation management operation by the contractor, his agents or employees, must be repaired immediately to the satisfaction of Vegetation Operations staff at no cost to National Grid companies. Vegetation Operations staff will determine what constitutes unreasonable site damage.

The Contractor shall leave all culverts, stream fords, fences, gates, walls and roads in the same or better condition as when they commenced their work. Any trees to be removed that have fence wire attached, or that are part of a permanent functional fence, shall be cut off above the top strand of wire. Care shall be taken that all fences and gates are closed or left in such condition that livestock cannot escape. If fences or gates of an active pasture along the ROW are in a state of disrepair prior to the start of clearing and could allow livestock to escape, the contractor shall attempt to notify both the property owner and the National Grid Vegetation Operations Supervisor of this condition. Where movement of the Contractor's equipment is required through existing fences, the Contractor shall make appropriate openings and adequate facilities for closing these openings during and after their use.

5.12 Herbicides

Application of herbicides by the Contractor shall conform to the following:

The contractor shall utilize only herbicides, mixture rates and solutions prescribed by Vegetation Operations staff (Reference Herbicide Mixes listed in the Appendix 6). Herbicides, adjuvants, carriers and additives are hereinafter collectively referred to as "materials."

5.12.1 Handling, Mixing, Loading and Labeling Herbicide Concentrates

All containers (tanks, gerry jugs, etc.) containing herbicide mixes shall be labeled with the trade name and concentration of each herbicide in the mix.

The majority of the Contractor's handling, mixing and loading of herbicide concentrates is to be done at the contractor's base location. If it is necessary to handle, mix, or load herbicide concentrates at any other location, the contractor is required to comply with herbicide label directions and existing regulations regarding setbacks from sensitive areas and safety precautions.

No handling, mixing, or loading of herbicide concentrates will be done within the buffer zones adjacent to any drinking water supplies or surface waters, or within 100 feet of any other sensitive area. All water to be used to mix herbicide solutions will be secured from a faucet or open bodies of water, which

are not drinking water supplies. If pumps are used, they must be equipped with anti-siphoning devices. Pumps and hoses used for water will not be used to pump or mix herbicides. If separate tank trucks are used for supplying water for mixing, the tanks shall never contain any material other than water.

5.12.2 Treatment Width

All treatment operations must be applied to the full specified width of the ROW. Vegetation Operations staff will determine whether the full specified width of the ROW has been treated. The contractor must, at his own expense, re-treat the site upon notification by Vegetation Operations staff that a treatment was not applied to the full specified width of the ROW. Re-treatment must be accomplished by using the application method and materials prescribed by Vegetation Operations staff.

For 69 kV and above, Vegetation Operations staff will provide the specified width of the ROW to the contractor. Prior to treatment, the width of the ROW must be measured by the contractor, and the contractor must mark the measured ROW edge with surveyor ribbon. A line of sight must be established along the edge of the ROW, or at least every third structure.

The Contractor shall confine their activities within the limits of the ROW, except for danger tree removals and authorized off ROW access. All ROW restrictions, noted in the inventory and/or on the drawings, shall be strictly adhered to.

5.12.3 Treatment Effectiveness

Treatments must result in 100% control or removal of all target species greater than or equal to six (6) feet in height. The contractor shall also provide a minimum of 95% control or removal of all target species less than six feet in height. Treatment effectiveness extends over the full three (3) to eight (8) year treatment cycle. Any target species identified as a hazard to the line and shown to have been six (6) feet or taller at the time of treatment shall be subject to this provision. Vegetation Operations staff will determine whether a treatment has been effective.

The contractor must, at his own expense, re-treat the site(s) upon notification by Vegetation Operations staff that a treatment was ineffective. Re-treatment must be accomplished by using the application method and materials prescribed by Vegetation Operations. Exceptions to this treatment effectiveness standard are limited to trees in yards, special road crossings, landowner treatment sites and must be noted in ROW Field Inventory.

New England Contractors Only

Upon completion of treatment of a ROW, the contractor must inspect the entire ROW to ensure the work was performed in accordance with this specification. The contractor must complete a “New England Vegetation Management Contractor Final Inspection Form” (Appendix 7) and submit the completed and signed form to a National Grid Vegetation Operations Supervisor. Submittal of this form is required for final payment; therefore, prior to final payment, the Company will require receipt of a completed “New England Vegetation Management Contractor Final Inspection Form”.

5.13 Danger Trees

IVM treatment crews shall routinely check for Danger Trees adjacent to the ROW to assess and identify any Hazard Tree conditions. Hazard Tree conditions, or Danger Tree growth approaching NGMVCD shall be reported to the National Grid Vegetation Operations Supervisor.

5.14. Wetlands and Sensitive Areas

The IVM treatment crew will deploy a cutting crew or point person in advance of the main herbicide application operation to locate and flag the boundaries of these Sensitive Areas and/or the appropriate buffer zones.

5.15 Railroads

Where the Company's ROW parallels or crosses railroad property, and the Contractor elects to gain access to the ROW from railroad property, they shall be responsible for all applicable rules and regulations pertaining thereto.

The contractor must:

- Obtain a permit and/or coordinate work with National Grid to obtain a permit if required, from the railroad near whose tracks he or she will be treating.
- Check with each railroad near whose tracks he or she will be treating to ensure that the contractor carries all insurance which the railroad may require. Contact Vegetation Operations staff if any problems arise.
- Refrain from beginning a treatment whenever a railroad has failed to provide a flagman or has removed the railroad from service. Contact Vegetation Operations staff immediately so that he or she can contact the railroad.

5.16 Native American Lands

The Contractor shall not use herbicides to manage vegetation on Native American reservations without prior, express approval of the National Grid Vegetation Operations Supervisor. Where required to complete work upon reservations, the contractor shall employ the designated Native American personnel for the successful completion of the project. The only reservation with a tentative agreement allowing the use of herbicides in New York is the Seneca Reservation in southwest New York.

5.17. Chainsaw Bar Lubricants

When working within a sensitive area, chainsaw bar lubricants must be a biodegradable product.

5.18 Equipment

The contractor crew supervisor or foreman must be equipped with a cellular telephone. The cellular telephone number must be provided to the division control center.

Applicator crews should carry with them at all times a shovel, a broom, heavy-duty plastic bags or other leak-proof container, absorptive clay and activated charcoal. (Chemical or Universal Spill Kit)

Contractor's equipment, including backup equipment, must be sufficient to maintain the highest practical level of efficiency and effectiveness. Equipment must be maintained in good visual and working condition.

5.19 Site Restoration

Work shall also include grading, mulching, and reseeding of rutted or scarified soils caused by the Contractor's operations when directed by the National Grid Vegetation Operations Supervisor. This shall include repair of all environmental damage, maintenance of stream crossings, wetlands, crop fields, fence lines, etc. which are adversely impacted by the Contractor so as to leave the ROW in as good or better condition than found.

Inclusion of the repair of any previously existing environmental damage, including grading, seeding, mulching, stream, culvert and ditch repair, etc. shall be specified at the time of bidding or completed on a Time and Material basis if required.

6.0 Vegetation Management Practices and Procedures

6.1 Practices and Procedures – Maintenance

6.1.1 ROW Floor Program

A treatment operation generally includes most of the vegetation management methods described in this section. Herbicide treatments, employing herbicides and treatment methods consistent with the sensitivity of the site, shall be the preferred method of vegetation management. Four (4) methods of herbicide treatments are utilized: basal application, cut stump application, cut stubble, and low-volume/high-volume foliar applications.

Treatment is generally carried out in two (2) phases: Preparatory Treatment and Foliar Treatment. These two (2) phases may be carried out separately or simultaneously depending on vegetative conditions or permit requirements for each ROW segment.

National Grid Foresters identify ROW segments to be treated each year in the Annual Work Plan. Field inventories of each ROW segment to be treated are completed by Company Transmission Foresters and provided to the Contractor. Inventory codes used by the New York Transmission Foresters are presented in Appendix 8. If the inventory shows a ROW segment as being maintained by the landowner, the Contractor should still review the property to ensure vegetation maintenance does not need to be performed.

The contractor shall perform an end-to-end inspection at the ROW segment and preparatory treat all vegetation approaching the NGMVCD (Clearance 2) prior to June 1 of a treatment year to assure reliability of the line. Foliar treatment shall be completed prior to October 1 of each year. Certain sites requiring hand cutting, mowing and/or cut stump treatment may be carried out after October 1.

6.1.1.1 Selective Vegetation Management

The Contractor shall treat all capable vegetation listed in Appendix 9, Exhibit A (tall growing trees) within the wire zone and border zone of the ROW.

The contractor shall treat all capable vegetation listed in Appendix 9, Exhibit B (small trees) within the mid-span of the wire zone of the ROW, except where the mature height would not approach the ATVM clearance distance.

Vegetation listed in Appendix 9, Exhibit B will be retained in the border zone of wider ROWs.

Small-medium trees shall also be removed from the wire zone and border zone on narrow ROWs such as sub-transmission.

A height limit of 12 feet is applicable for low-volume backpack foliar treatments. A height limit of 16 feet is applicable for high volume or low volume hydraulic foliar treatments (New York only). Capable hardwood vegetation greater than the heights specified above shall be hand cut and stump treated. Capable hardwood vegetation less than the heights specified above shall be foliar or basal treated.

In sites, due to terrain, conductor height, or other ROW variables, where a normally capable tree will never reach the ATVM clearance distances, such tree may be retained on the ROW during routine maintenance as long as there is no undesirable affect or risk to access, construction, reliability or public safety. These areas must be approved by the National Grid Forester and noted on the inventories. Such locations will be determined through a combination of field measurements, profile mapping or other technology and will also be routinely reviewed and verified during each inventory cycle.

Conifers are generally not treated with herbicides since most species do not resprout. One exception to this general guideline is pine species that do resprout, particularly Pitch Pine, which shall be stump treated. Capable conifers over two (2) feet tall (knee-height) shall be hand cut. Conifer species less than two (2) feet tall may be foliar treated. If there is low stem density of capable conifers, or a large area of capable conifers, speak with a National Grid Forester to see if foliar treatment can be used. Herbicides cannot be applied to any conifer species within and ten (10) feet from wetlands.

6.1.1.2 Non-Selective Vegetation Management

All vines growing on gates, guys, poles and towers shall be treated.

For guys, poles and towers:

New England: All woody vegetation species growing within **ten (10) feet** of guys, poles and towers shall be cut and stump treated where site conditions permit. All herbaceous species, except for grasses, growing within ten (10) feet of guys, poles and towers shall be foliar treated where site conditions permit. Wherever practicable, grape vines shall be treated with low-volume basal or low-volume foliar method.

New York:..... All woody vegetation species growing within **ten (10) feet** of guys, poles and towers shall be cleared and treated, using the treatment technique being applied to the surrounding site. Wherever practicable, grape vines shall be treated with low-volume basal or low-volume foliar method.

All trees and shrubs growing within the established or designated access road(s) along the ROW shall be treated to provide an access route **15 feet** in width. This includes the access way to all gates. Where there is no established access road, a route shall be designated and/or approved by the National Grid Forester, and the Contractor shall clear the same, unless property rights or environmental concerns prevail. Where multiple improved access roads exist within the ROW, the Contractor shall maintain all roads.

Treatments will also extend around the perimeter of any substations within **five (5) feet** of fence line and along short side taps associated with the ROW segment.

6.1.1.3 Vegetation Management in Visual Buffers

Where capable vegetation, listed in Appendix 9 Exhibits A and B, cannot be removed, generally trees that are visual buffers, in yards and road crossings, said vegetation shall be pruned to the ATVM clearance distances shown in Appendix 10. The specific maintenance technique is specified in the Field Inventory.

6.1.1.4 Vegetation Management in Protective Buffers

The size/dimensions of protective buffers are generally specified in state level plans/permits. Capable vegetation in protective buffers is hand cut or mowed as specified in the Field Inventory.

6.2 Vegetation Management Techniques

6.2.1 Herbicides

6.2.1.1 Stump Application (Cut Surface)

After the stem of the capable species is cut, apply herbicide with a squirt bottle or backpack sprayer. When treatments are interrupted by rain, resume the treatment only after the rain ends. Resume treatment at the point where it was interrupted.

This method includes the application of an approved herbicide product to the cut surface and/or stump of a recently cut stem. This method is utilized within sites of environmental, aesthetic or public sensitivity.

6.2.1.2 Basal Application

Apply basal treatments with basal wands. Keep pump pressures at the minimum required to adequately cover the capable species. When treatments are interrupted by rain, resume the treatment only after the rain ends. Resume treatment at the point where it was interrupted once it is observed that the lower stem of the capable species is predominantly dry.

This method includes the application of an approved herbicide product to the base of the capable stem for a distance of up to 18 inches. This method is utilized within sites of higher environmental, aesthetic or public sensitivity where cut and stump treatment would not be as effective in controlling capable species.

6.2.1.3 Foliar Application

When applying foliar treatments on the edge of the treatment area, (forest edge, site borders) spray herbicide toward the center of the ROW in order to prevent off-site drift.

Keep pump pressures at the minimum required to adequately cover the capable species. When herbicide treatments are interrupted by rain, resume the treatment only after the rain ends. Resume treatments after active leaf runoff has ended and then re-treat those portions of the site that were treated within approximately four (4) hours before the rain started.

Do not apply foliar treatments during windy periods when spray material has a high propensity to drift or if standing water is present under the capable species (Operations in adverse weather conditions is detailed in section 7.3).

High Volume and Low Volume Hydraulic Application (NY only)
This method includes treatments of water-borne herbicide mixtures, using hydraulic spray tanks, mounted on all-terrain units such as pickup trucks, skidders, tracked units, four-wheel all terrain vehicles (ATVs), etc. The applicator should be within ten (10) feet of the capable species in order to maximize the accuracy of the application and minimize off-target damage.

Low Volume Backpack Applications
This method includes light and very light applications of more concentrated herbicide mixtures, using hand-operated backpacks, to selectively deliver the herbicide mixture to the capable species.

This method is especially preferred for its highly selective control in areas that are suitable for foliar treatments but not accessible to or appropriate for treatment with hydraulic units.

6.2.2 Mechanical

6.2.2.1 Hand Cutting
Hand cutting is generally the method of choice where herbicides cannot be applied or where capable vegetation exceeds certain specified heights (see Section 6.1.1.1).

Cut stems parallel to slope as close to the ground as practical. Do not leave stumps that exceed three (3) inches in height.

6.2.2.2 Mowing
Use extreme care in order to provide for the safety of workers and the general public. Crews need to mark all obstructions including poles and guy wires with flagging and hand cut all woody growth from around the area within 15 feet. Provide a mechanism, such as a buffer to shield operations that are carried out close to residences or high public use areas. Cut stumps as close to the ground as practical, making sure that stumps do not exceed three (3) inches in height unless otherwise directed by National Grid Forestry staff.

6.2.2.3 Selective Mowing
Selective mowing shall mean mowing small areas of high-density capable species such as extensive Sumac, Buckthorn or Multi-flora Rose, particularly in wire zone mid-spans, or dense woody vegetation encroaching upon roadways or trails to structures.

6.2.2.4 Pruning
Pruning may be required in order to achieve ATVM clearances between the line conductors and vegetation. Sites requiring pruning could include:

- At designated road crossings, or designated portions of lines along high use public roads.
- Along the edge of the cleared ROW where, in order to obtain required conductor clearances specified in Section 4.3, side pruning or removal of danger trees is required. The pruning and/or removal of danger trees located beyond the limits of the ROW may be specified on the Field Inventory or in a separate document.
- On designated portions of lines passing through natural preserves, or public or private parks.
- On designated portions of lines passing over ridges or other exposed views of the ROW in areas of high aesthetic value.
- In general, along all or part of the route of the line when removal of vegetation is to be minimized consistent with reliable line operation.

Pruning shall be carried on in accordance with the ANSI A-300 standard.

6.3 Management of Wood and Brush (Slash)

Wood and brush slash may be generated during vegetation management activities. In general, where tree removal or pruning, or mechanized clearing is required, the brush that has been cut (diced) may be left where it falls after being cut so as to lie close to the ground. Length of diced stems or branches should not exceed ten (10) feet; height of diced slash should not exceed two (2) feet.

Near public roads or private roads, residential or commercial areas, parks, streams, on access roads, or in any sensitive areas indicated in the Field Inventory, the brush shall be disposed of by either chipping or removal to a suitable location within the ROW and neatly piled, windrowed or dispersed. The site-specific slash disposal method is identified in the Field Inventory.

When chipping is required, the chips may be disposed of by dispersing on site in non-sensitive areas. Chips shall be removed from areas of more intense landscape management such as lawns.

Where trees and limbs larger than four (4) inches in diameter at the small end are removed and the designated slash disposal is a windrow, the wood shall be neatly piled on the site, taking care not to block any access roads used by either the property owner or the Company. When the authorized slash disposal method is chipping, it may be necessary to remove the larger wood from the site to another approved area of the ROW and piled neatly, or moved to an approved off ROW disposal site.

No burning of wood or brush will be permitted unless specifically authorized by the National Grid Forestry Staff.

All species of wild cherry (Prunus serotina, P. virginiana, P. pennsylvanica) that are cut or treated during the growing season can become toxic to livestock during the wilting stage of the leaves. In addition, several species of Maple (Acer) have been identified as toxic to horses in the wilting stage. Therefore, Maple and Cherry stems, which are cut or treated in active pastures, shall be immediately removed from the pasture following clearing, or arrangements made with the farmer to utilize alternate pastures until the wilting stage and hazard has passed.

Contractors shall comply with all applicable laws and guidelines pertinent to invasive species and their management, as set forth by government entities and National Grid.

6.4 Mitigation of Impacts

If, during their operations, the Contractor causes any damage to occur to the land such as deep ruts or scarified areas, which in the opinion of the National Grid Forester could cause future erosion or interfere with access for line maintenance, the Contractor shall re-grade the site to original contours, and seed and mulch as required. Areas where erosion occurs during vegetation management operations will be restored per National Grid companies' policies.

The Contractor shall take reasonable precautions not to remove or damage existing low-growing vegetation, either natural or planted, which are to be preserved on the ROW. Where road crossing buffer vegetation, either natural or planted, has been damaged beyond reasonable repair because of the Contractor's negligence, this vegetation will be replaced at the Contractor's expense.

The Contractor shall take care not to rut or scarify the ROW for the duration of their operation. All environmental damage resulting from the Contractor's operation shall be permanently repaired at the Contractor's sole expense.

Mobile equipment shall not intrude into road crossing buffers, stream buffer zones or pruning areas, except on designated access routes. When a tree that has been cut must be removed from such an area, it must first be limbed and the brush hand carried to the chipping location or pile site. The trunk wood may be removed by means of a winch line taking adequate care to avoid damaging residual vegetation.

In certain areas, where feasible and advantageous, the National Grid Forester may authorize the use of aerial lifts and other specialized equipment, in road crossing buffers for the purpose of pruning trees, and disposal. In no case, however, will any vegetation be cleared or any new road be authorized, other than the approved access road through the screen to facilitate the use of this equipment.

The Contractor shall take adequate precautions to protect the watercourses and wetlands from pollution and shall avoid disturbing streambeds and banks and the low-growing vegetation protecting them. Felling vegetation in or across a watercourse (such as a river, stream, or brook), should be avoided. Vegetation that is felled into a watercourse shall be removed as soon as possible and placed on high ground. Brush chipping shall be performed in such a manner that the

chipped material shall not enter any watercourse or wetland area, nor accumulate in excess of four (4) inches in depth at any location.

7.0 Work Precautions

7.1 Safety

As a contractual term, National Grid requires all contractors to comply with all appropriate state and federal safety laws and regulations. This includes applicable sections of the Occupational Safety and Health Act (OSHA) and all worker safety-related statements and instructions on the herbicide label.

It shall be understood and agreed to by the Contractor that herbicide application, hand cutting, pruning and clearing near existing transmission and distribution lines shall be undertaken while lines are presumed to be energized and operating at voltages up to and including 345kV AC and 450kV DC. The Contractor shall provide competent, trained personnel to complete the work.

In order to insure the safety of their employees, the general public and continuity of service in the energized lines, the Contractor shall exercise extraordinary precautions in removing trees and tree limbs that are in such close proximity to the conductors as to constitute a hazard. Such trees shall be pruned, removed with the aid of ropes, or taken down one (1) section at a time.

National Grid's safety requirements are included in service procurement documentation and contracts with selected contractors.

In addition, all vegetation management work shall be carried out in compliance with ANSI Z133.1, American National Standards Institute, Standard for Arboricultural Operations – Safety Requirements.

7.2 Sensitive Areas

Sensitive areas are defined as areas on a ROW where legal, visual or environmental impacts/concerns require compromises to the general vegetation maintenance activities. Sensitive areas include: public surface, public well and private well drinking water supplies; lakes, ponds, rivers, streams, and any other surface waters; wetlands; endangered species sites; agricultural areas including croplands, orchards, tree plantations and animal pastures; buffers at road crossings; buffers at residential and/or commercial yards; and easement restrictions and/or landowner agreements.

These sensitive areas have varying legal definitions in each of the states in which National Grid companies have transmission and distribution facilities. Permits for IVM activities in these states vary as well. For purposes of this document, sensitive areas and vegetation management within them are discussed in a general way.

In some sensitive areas restrictions for use of herbicides may exist including in wetlands; endangered species sites; agricultural areas including croplands,

orchards, tree plantations and animal pastures. Hand cutting and limited herbicide applications may be required in these areas.

The IVM treatment crew will deploy a cutting crew or point person in advance of the main herbicide application operation to visually locate the boundaries of these sensitive areas and/or the appropriate buffer zones.

7.3 Weather

Herbicide application will be restricted during certain adverse weather conditions such as rain, wind or deep snow.

Herbicide applications will not be made during periods of moderate or heavy rainfall.

Foliar applications are effective in light mist situations; however, any measurable rainfall that creates leaf runoff will wash the herbicide off the capable species. If foliar applications are interrupted by unexpected rainfall, the treatment will not resume until the rain ends and active leaf runoff has ceased.

Basal applications are ineffective during measurable rainfall. Basal applications that are interrupted by rainfall will not be resumed until the lower stem of the capable species is predominately dry.

Excessive wind can create drift during foliar applications. Significant herbicide drift can cause damage to desirable vegetation on or off the ROW. Basal or cut-stump treatments are much less affected by wind because they are applied in such close proximity to the ground.

To prevent any significant off-target drift of herbicides, the applicator will comply with the following restrictions:

a. During periods of wind, which are strong enough to bend the tops of the main stems of tree species on the ROW, the contractor crew supervisor will periodically observe the application of the foliar treatment to insure that there is no significant movement of the herbicide solution. If the supervisor can see the solution moving off the capable species, applications will immediately stop until the wind has subsided enough to permit further applications.

b. All herbicide solutions to be used for a foliar application will contain low-drift agents. Low-drift agents will be added to the foliar herbicide solution as per the low-drift agent label. In moderate wind conditions, as per label recommendations, more low-drift agent may be added at the discretion of the contractor supervisor to control significant drift.

7.4 Wetlands

IVM methods using herbicides on ROWs in wetlands have come to be accepted in several states. Tall growing trees generally only occur in wooded swamps; or areas that are dry for long enough periods each year to support tree growth. Emergent wetlands including: wet meadows, cattail swamps, shrub swamps and

bogs, generally do not support tree growth and; therefore, do not require management of vegetation. Occasional high ground or hummocks within emergent wetlands may support tree growth and are hand cut. In addition, herbicide use within wetlands is always limited by the presence of surface water including: lakes, ponds, rivers, streams, seasonal ponds and streams, and flood storage following heavy rainfall. These buffer zones clearly prevent use of herbicides within or in close proximity to surface water unless labeled for and permitted.

Appendix 1
Contact Information

Vegetation Operations Staff, Control Center and Security Contact Information

SYSTEMWIDE		
Contact	**Location**	**Telephone Number**
Transmission Call-in	System	(508) 421-7452
Injury Hotline	System	(866) 322-5594

NEW ENGLAND		
Contact	**Location**	**Telephone Number**
NE Transmission Control Center	Northboro, MA	(800) 423-6029 *Or* (800-382-7260
Security	Northboro, MA	(508) 421-7970
Anne Marie Moran (Manager)	Worcester, MA	(508) 860-6925
Jason Magoon	Worcester, MA	(508) 860-6212-
Jonathan Duval	Somerset, RI	(508)730-4007

NEW YORK		
Contact	**Location**	**Telephone Number**
NY Transmission Control Center	N. Syracuse, NY	(315) 460-2110
Security:	West	(716) 831-7740
Tim Bodkin (Manager)	Clifton Park, NY	(518) 406-7014
Jeremiah (JT) Carroll (Capitol)	Albany, NY	(518) 433-3320
Kenneth Kirkman (Central)	Syracuse, NY	(315) 428-5273
Ryan Blothenburg (Western)	Fredonia, NY	(716) 673-7216

Appendix 2
National Grid Environmental Policy

nationalgrid

Environment Policy

Our strategy is to be a recognised leader in the development and operation of safe, reliable and sustainable energy systems to meet the needs of our customers and communities and to generate value for our investors.

One of the ways we will achieve this is to protect and enhance the environment, always seeking new and innovative ways to lighten the environmental impact of our past, present and future activities.

Steve Holliday
Chief Executive

We commit to:

- Ensuring environmental sustainability is considered in our decision making and creating a sustainable thinking culture.
- Using resources more efficiently through good design, using sustainable materials, responsibly refurbishing existing assets, recovery and recycling.
- Ensuring our operations that have an impact on natural habitats are conducted in a manner to protect biodiversity and seeking ways to enhance the natural value of the area for the benefit of local communities and/or environment.
- Reducing greenhouse gas emissions: 45% by 2020 and 80% by 2050.
- Looking at ways to reduce the impact of climate change by implementing mitigation and adaptation measures.
- Openly reporting on our environmental and sustainability performance with employees, members of the public and other stakeholders.
- Actively working to prevent pollution which may result from our activities.
- Continually improving our environmental management system to protect the environment, reduce the risk of environmental incidents.
- Satisfying our compliance obligations.
- Actively managing the risks associated with sites where we have responsibility for dealing with contamination associated with past operations.
- Ensuring our employees have the training, skills, knowledge and resources necessary to meet our environmental commitments.
- Working with governments and regulators to help them develop and deliver more effective environmental policies and targets.
- Helping consumers reduce their dependency on fossil fuels by providing them with access to more sustainable energy and through innovative energy efficiency programmes.
- Ensuring those working on our behalf demonstrate the same commitment to the environment as we do.

For more details on this policy, visit the SSR Infonet homepage or nationalgrid.com

Appendix 3
Invasive Species Best Management Practices (New York Only)

New York Utility Company Best Management Practices for Preventing the Transportation of Invasive Species

Environmental Energy Alliance of New York

Revisions January 2015

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Appendices

1.0 Introduction

Invasive species are non-native plant, animal, or microbial species that cause, or are likely to cause, economic or ecological harm or harm to human health (Presidential Executive Order 13112). Invasive species means, "A species that is nonnative to the ecosystem under consideration; and whose introduction causes or is likely to cause economic or environmental harm or harm to human health. Harm must significantly outweigh benefit" [New York Environmental Conservation Law §9-1703(10)(a)] Invasive species have been introduced by human action into a region outside their natural geographic range. Introductions occur along a variety of pathways or vectors, either intentionally such as intentional transport of a species for trade, or by accidental means, as in the case of stowaway species found in the ballast-water of ocean-going vessels.

Most scientists regard invasive species as second only to habitat loss as a threat to biodiversity. The presence of invasive species in a given region is one of the leading causes of endangerment to species native to that region. On a nationwide basis, about half of plant and animal species listed as federally Endangered or Threatened are at risk because of invasive species.

Annual economic losses due to invasive species in the U.S. have been estimated at over $138 billion (Pimentel et al. 2000). These losses include damage to crops and pasture, forest losses, damage from insect and other invertebrate pests, human diseases, and associated control costs.

In an effort, where feasible, to limit the introduction and spread of *invasive species*, this Best Management Practice ("BMP") will be employed when performing activities that occur in *jurisdictional areas* as authorized by the DEC. The BMP identifies procedures that will be incorporated into routine work practices to prevent the introduction and spread of *invasive species*.

2.0 Definitions

The following definitions are applicable to this BMP.

Environmental Energy Alliance of New York (EEANY) – is an association of electric and gas Transmission and Distribution (T&D) companies and electric generating companies that provide energy services in the State of New York. This BMP was prepared by the Land Use Subcommittee of the T&D Committee, which currently represents the following members: Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, Long Island Power Authority, National Grid USA Service Company, Inc., New York Power Authority, New York State Electric & Gas Corporation, Orange and Rockland Utilities, and Rochester Gas & Electric Corporation.

Invasive species – species that are non-native to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health (Management Plan National Invasive Species Council, 2001). For purposes of this document, *invasive species* are those contained on the list contained within 6 NYCRR Part 575 Prohibited and Regulated Invasive Species (Appendix – 2).

Invasive species plant material – seeds, roots, or pieces of plant material that could germinate into live plants.

Jurisdictional Area – lands under the statutory jurisdiction of the NYSDEC such as certain freshwater wetlands and adjacent areas, tidal wetlands, certain water bodies, and any protected and species habitat areas specified by natural resource supervisors.

NYSDEC General Permit – a NYSDEC permit authorizing certain utility line activities under Articles 15, 24, and 25 of NYS Environmental Conservation Law. These activities include: inspection, maintenance, repair, restoration, reconstruction of pre-existing structures, vegetation cutting and trimming, and emergency actions affecting tidal wetlands, protected waters, regulated freshwater wetlands, adjacent areas, and protected habitat areas.

Regulated Activity – an activity taking place within a *jurisdictional area* that requires authorization from the NYSDEC.

Utility Rights-of-Way - is an easement-acquired or fee-owned corridor in which gas or electric transmission facilities are located.

3.0 Purpose

This BMP provides guidance for inspecting and cleaning vehicles and equipment to help prevent the spread of invasive species. The procedures identified within this manual outline cost-effective and realistic practices that *Environmental Energy Alliance of New York (EEANY)* utility members will implement when conducting a *regulated activity* within a *jurisdictional area*.

4.0 Applicability

This management practice applies to all *EEANY* utility members performing NYSDEC *regulated activities* within *jurisdictional areas* with populations of *invasive species*.

5.0 Procedures

There are two procedural options for EEANY companies to follow; one is to conduct the BMPs as detailed in the following sections of this plan or to conduct vegetation surveys for invasive species as outlined in Section 5.6. Field crews will be provided a flowchart to assist with determining when to implement these best management practices (Appendix 1).

The following detailed practices will apply where feasible when invasive species are present and when the work is covered by a GP or individual wetland permit.

5.1 Equipment

a. Equipment must arrive clean without visible soil clumps, plant or animal material.
b. Equipment includes, but is not limited to, vehicles, trailers, machinery, matting, boats, barges, and other watercraft, tools, and other materials.
c. Transporting equipment will be cleaned before accepting a new load.
d. Consider tracking pads as a means to remove soil from equipment. If tracking pads are used they must be cleaned after each use in a specific area.
e. Equipment will be cleaned using one of the methods listed below (use the most effective method that is practical):
    - Brush, broom, shovel or other similar hand tools (used without water)
    - High pressure air (when feasible)
f. Equipment must be cleaned within one of the below areas:
    - the infested work area
    - an area immediately adjacent to the work area that is itself currently infested with *invasive species*
g. Do not clean equipment in or near waterways as it may promote the spread of *invasive species* downstream.
h. Where possible, staging areas will be established in locations that are free of *invasive species*. Otherwise, all equipment will be cleaned using the techniques described in 5.3 before leaving the area.
i. When wetland matting is required, it will arrive on site visibly clean, be installed prior to any activities, and will be appropriately cleaned before leaving the area.

5.2 Inspection and Cleaning

a. Inspections and cleaning should be conducted especially when moving from an infested area to an un-infested area.
b. Prior to exiting work area clothing, footwear, and gear should be cleaned of visible signs of plant material.
c. Carry appropriate cleaning equipment (e.g. wire brush, small screwdriver, boot brush) to help remove soils, seeds, and plant material.
d. Preferred locations for cleaning are those where:
    - Work activities are taking place;
    - *Invasive species* are already established; or
    - An area immediately adjacent to the work site that is itself currently infested with *invasive species*.
e. No cleaning of clothing, footwear, gear in or adjacent to waterways – it may promote the spread of *invasive species* downstream.
f. Cleaning will include brushing or self "pat down" of clothing, footwear, and other personal gear within the infested work area.

5.3 Disposal of Impacted Material

a. Preferred locations for equipment cleaning are those areas where work activities are taking place or immediately adjacent areas currently impacted with *invasive species*.
b. Do not clean equipment, vehicles or trailers in or near waterways.
c. Do not dispose of soil, seeds, or plant material in storm drains.
d. Any plant materials that are incidentally removed after completion of steps a-c from site will be properly disposed of in a manner that prevents viable plant parts and propagules from being spread

5.4 Other Prevention Measures

a. Reasonable steps to avoid transportation of *invasive species,* including small, isolated, populations, will be taken.
b. As an alternative to cleaning, ancillary equipment such as spare tires and winches when feasible will be covered when entering *jurisdictional areas* containing populations of *invasive species*.
c. Vehicular access into areas containing populations of *invasive species* will be reduced or minimized to the maximum extent practical. When practical vehicles will be parked outside of the impacted area and crews will enter on foot.

5.5 Site Restoration

a. Minimize soil disturbances by reducing work areas and reducing activities that may result in soil disturbances.

b. Re-vegetate bare soils as soon as feasible to minimize the possible establishment of *invasive species*. When seeding, non-invasive or local native species must be used (seed mixes will vary from region to region). Seed will be broadcasted over all bare soil areas and covered with a mulch layer such as straw. Choose appropriate seed mixes based on site conditions.

c. On steep sloping areas (i.e. slopes exceeding 20 percent), soil erosion control matting (i.e. jute mesh or straw blankets) must be installed over the seeded area. The matting should be secured with biodegradable tacks.

d. Stabilize disturbed soils using appropriate erosion and sediment control procedures as soon as possible. Use invasive free materials such as straw or wood chips; avoid using hay.

5.6 Vegetation Survey (Optional)

If the above BMPS are not followed, then vegetation surveys of site(s) to detect populations of invasive species should be made in advance prior to any activities. If the optional vegetation survey is performed and no invasive species are found, then the procedures outlined above in section 5.1 through 5.5 will not be followed. Survey inspections can be integrated with other activities such as ROW inspections and should be kept as simple as possible to meet invasive species management objectives. If significant populations of invasive species are detected on surveys, then Sections 5.1 to 5.5 apply.

a. Prior to implementing activities scout for, locate and document significant invasive species infestations.
b. Consider the need for actions based on: 1) the degree of invasiveness; 2) severity of the current infestation; 3) amount of additional habitat or host at risk for invasion; and 4) feasibility of managing the spread.
c. Plan activities to limit the potential for introduction and spread of invasive species, prior to construction.
d. Provide appropriate resources in identification of known invasive species for corridor workers.

6.0 Training

A flowchart (Appendix 1) to assist field crews on when to implement the above procedures will be distributed to all field crews.

All transmission vegetation management planners, foresters, and ROW maintenance personnel will be trained in the procedures outlined in Section 5.0 above. Additionally, training sessions focused on the identification of *invasive species* identified in Appendix 2 will be conducted by the individual utility companies. This may take the form of hard copy materials, tail gate briefings and/or presentations during regular staff meetings.

7.0 Emergency Work

During emergencies, *EEANY* utility members will strictly comply with the Emergency Action condition protocol outlined in the *NYSDEC General Permit*. Appropriate site-specific *invasive species* controls and restoration efforts will be determined on an individual basis in conjunction with the regional NYSDEC office.

8.0 References

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- Pimentel, D., Lach, L., Zuniga, R. & Morrison, D**.** 2000. Environmental and economic costs of nonindigenous species in the United States. Bioscience, 50(1): 53-65.

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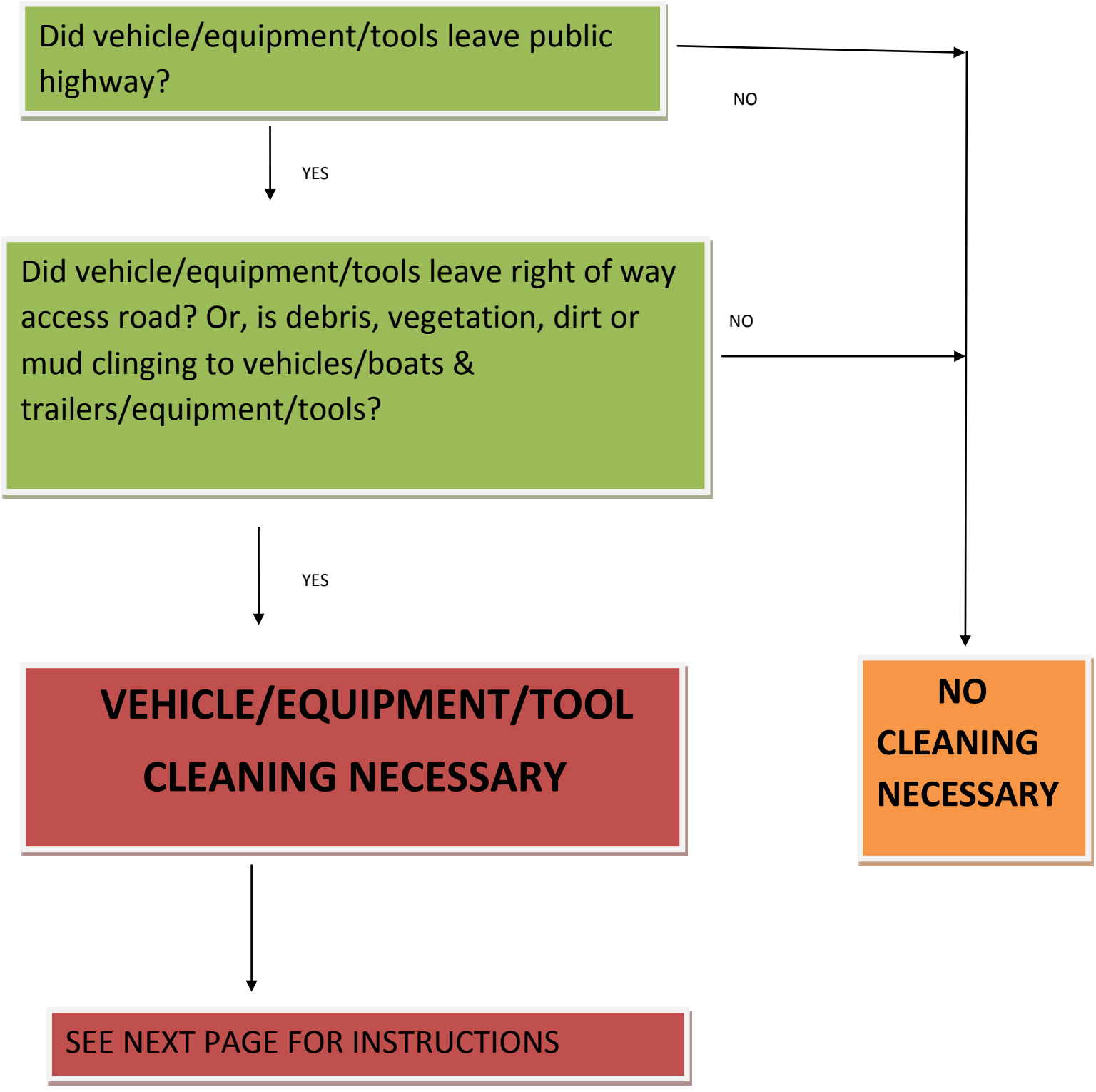
- Wisconsin Council on Forestry. 2010. *Invasive Species Best Management Practice for Transportation and Utility Rights-of-Way*.

APPENDIX - 1

BEST MANAGEMENT PRACTICES (BMP'S) for INVASIVE SPECIES TRANSPORT PREVENTION



PRIOR TO LEAVING THE RIGHT-OF-WAY

- Prior to loading vehicle/equipment/tools remove as much debris, vegetation, dirt and mud clinging to the equipment as feasible using a brush, broom, shovel or other similar hand tool.

- High pressure air can be used on site for cleaning debris, vegetation, dirt and mud off vehicles/equipment/tools.

- Pick-ups and other small road vehicles shall remove on the right-of-way, as much debris, vegetation, dirt and mud clinging to vehicle as feasible prior to entering the highway.

- Small equipment/tools/boots shall be cleaned on site before removal or storage.

- Arrangements can be made for onsite cleaning or washing of vehicles/equipment/tools if deemed necessary.

PRIOR TO LEAVING A BOAT LAUNCH:

CLEAN, DRAIN, DRY -- Prior to leaving a boat launch, **Clean** any visible mud, plants, fish or animals before transporting equipment; **Drain** all water holding compartments including live wells, bait wells and bilge areas; **Dry** the boat, trailer and all equipment before use in another water body

APPENDIX - 2

6 NYCRR Part 575
Prohibited and Regulated Invasive Species
September 10, 2014

ALGAE AND CYANOBACTERIA
Prohibited:
Caulerpa taxifolia, Killer Green Algae
Didymosphenia geminata,
Didymo Prymnesium parvum, Golden Algae

Regulated:
Cylindrospermopsis raciborskii, Cylindro
Grateloupia turuturu, Red Algae

PLANTS
Prohibited:
Acer pseudoplatanus, Sycamore Maple
Achyranthes japonica, Japanese Chaff Flower
Alliaria petiolata, Garlic Mustard
Ampelopsis brevipedunculata, Porcelain Berry
Anthriscus sylvestris, Wild Chervil
Aralia elata, Japanese Angelica Tree
Artemisia vulgaris, Mugwort
Arthraxon hispidus, Small Carpet Grass
Berberis thunbergii, Japanese Barberry
Brachypodium sylvaticum, Slender False Brome
Cabomba caroliniana, Fanwort
Cardamine impatiens, Narrowleaf Bittercress
Celastrus orbiculatus, Oriental Bittersweet
Centaurea stoebe (C. biebersteinii, C. diffusa, C. maculosa misapplied, C. xpsammogena), Spotted Knapweed
Cirsium arvense (C. setosum, C. incanum, Serratula arvensis), Canada Thistle
Cynanchum louiseae (C. nigrum, Vincetoxicum nigrum), Black Swallow-wort
Cynanchum rossicum (C. medium, Vincetoxicum medium, V. rossicum), Pale Swallow-wort
Dioscorea polystachya (D. batatas), Chinese Yam
Dipsacus laciniatus, Cut-leaf Teasel
Egeria densa, Brazilian Waterweed
Elaeagnus umbellata, Autumn Olive
Euphorbia cyparissias, Cypress Spurge
Euphorbia esula, Leafy Spurge
Ficaria verna (Ranunculus ficaria), Lesser Celandine
Frangula alnus (Rhamnus frangula), Smooth Buckthorn
Glyceria maxima, Reed Manna Grass
Heracleum mantegazzianum, Giant Hogweed
Humulus japonicus, Japanese Hops
Hydrilla verticillata, Hydrilla/ Water Thyme
Hydrocharis morsus-ranae, European Frogbit
Imperata cylindrica (I. arundinacea, Lagurus cylindricus), Cogon Grass
Iris pseudacorus, Yellow Iris
Lepidium latifolium, Broad-leaved Pepper-grass
Lespedeza cuneata, Chinese Lespedeza
Ligustrum obtusifolium, Border Privet
Lonicera japonica, Japanese Honeysuckle
Lonicera maackii, Amur Honeysuckle
Lonicera morrowii, Morrow's Honeysuckle
Lonicera tatarica, Tartarian Honeysuckle
Lonicera x bella, Fly Honeysuckle
Ludwigia hexapetala (L. grandiflora), Uruguayan Primrose Willow
Ludwigia peploides, Floating Primrose Willow
Lysimachia vulgaris, Garden Loosestrife
Lythrum salicaria, Purple Loosestrife
Microstegium vimineum, Japanese Stilt Grass
Murdannia keisak, Marsh Dewflower
Myriophyllum aquaticum, Parrot-feather
Myriophyllum heterophyllum, Broadleaf Water-milfoil
Myriophyllum heterophyllum x M. laxum, Broadleaf Water-milfoil Hybrid
Myriophyllum spicatum, Eurasian Water-milfoil
Nymphoides peltata, Yellow Floating Heart
Oplismenus hirtellus, Wavyleaf Basketgrass
Persicaria perfoliata (Polygonum perfoliatum), Mile-a- minute Weed
Phellodendron amurense, Amur Cork Tree
Phragmites australis, Common Reed Grass
Phyllostachys aurea, Golden Bamboo
Phyllostachys aureosulcata, Yellow Groove Bamboo
Potamogeton crispus, Curly Pondweed
Pueraria montana, Kudzu
Reynoutria japonica (Fallopia japonica, Polygonum cuspidatum), Japanese Knotweed
Reynoutria sachalinensis (Fallopia sachalinensis, Polygonum sachalinensis), Giant Knotweed
Reynoutria x bohemica (Fallopia x bohemica, Polygonum x bohemica), Bohemian Knotweed
Rhamnus cathartica, Common Buckthorn
Rosa multiflora, Multiflora Rose
Rubus phoenicolasius, Wineberry
Salix atrocinerea, Gray Florist's Willow
Silphium perfoliatum, Cup-plant
Trapa natans, Water Chestnut
Vitex rotundifolia, Beach Vitex

Regulated:
Acer platanoides, Norway Maple
Clematis terniflora, Japanese Virgin's Bower
Euonymus alatus, Burning Bush
Euonymus fortunei, Winter Creeper
Miscanthus sinensis, Chinese Silver Grass
Robinia pseudoacacia, Black Locust

FISH
Prohibited:
Channa argus, Northern Snakehead
Channa marulius, Bullseye Snakehead
Channa micropeltes, Giant Snakehead
Clarias batrachus, Walking Catfish
Gambusia affinis, Western Mosquitofish
Gambusia holbrooki, Eastern Mosquitofish
Hypophthalmichthys harmandi, Largescale Silver Carp
Hypophthalmichthys molitrix, Silver Carp
Hypophthalmichthys nobilis, Bighead Carp
Misgurnus anguillicaudatus, Oriental Weatherfish
Mylopharyngodon piceus, Black Carp
Neogobius melanostomus, Round Goby
Petromyzon marinus, Sea Lamprey
Proterorhinus semilunaris (P. marmoratus), Tubenose Goby
Tinca tinca, Tench

Regulated:
Carassius auratus, Goldfish
Cyprinella lutrensis, Red Shiner
Cyprinus carpio, Common Carp/ Koi
Gymnocephalus cernuus, Ruffe
Monopterus albus, Asian Swamp Eel
Oreochromis aureus, Blue Tilapia
Oreochromis niloticus, Nile Tilapia
Pterois miles, Common Lionfish
Pterois volitans, Red Lionfish
Sander lucioperca (Stizostedion lucioperca), Zander
Scardinius erythrophthalmus, Rudd

AQUATIC INVERTEBRATES
Prohibited:
Bellamya chinensis (Cipangopaludina chinensis),Chinese Mystery Snail
Bellamya japonica, Japanese Mystery Snail
Bithynia tentaculata, Faucet Snail
Bythotrephese longimanus (B. cederstroemi), Spiny Water Flea
Cercopagis pengoi, Fishhook Water Flea
Corbicula fluminea, Asian Clam
Crassostrea ariakensis, Suminoe Oyster
Didemnum spp., Carpet Tunicate
Dreissena polymorpha, Zebra Mussel
Dreissena rostriformis bugensis, Quagga Mussel
Eriocheir sinensi, Chinese Mitten Crab
Hemigrapsus sanguineus, Asian Shore Crab
Hemimysis anomala, Bloody Red Shrimp
Orconectes rusticus, Rusty Crayfish
Potamopyrgus antipodarum, New Zealand Mud Snail
Rapana venosa, Veined Rapa Whelk
Styela plicata, Asian Sea Squirt

Regulated:
Carcinus maenas, European Green Crab
Daphnia lumholtzi, Water Flea
Hemigrapsus takanoi (H. penicillatus), Brush-clawed Shore Crab/ Grapsid Crab

TERRESTRIAL INVERTEBRATES
Prohibited:
Achatina achatina, Giant Ghana Snail
Achatina fulica (Lissachatina fulica), Giant African Land Snail
Adelges tsugae, Hemlock Woolly Adelgid
Agrilus planipennis, Emerald Ash Borer
Amynthas spp., Asian Earthworms
Anoplophora glabripennis, Asian Longhorn Beetle
Apis mellifera scutellata x A. mellifera ligustica/ A. mellifera iberiensis, Africanized Honey Bee
Archachatina marginata, Giant West African Snail
Cryptococcus fagisuga, Beech Scale
Lymantria dispar, Asian and European Gypsy Moth
Monochamus alternatus, Japanese Pine Sawyer
Pityophthorus juglandis, Walnut Twig Beetle
Sirex noctilio, Sirex Woodwasp

TERRESTRIAL AND AQUATIC VERTEBRATES
Prohibited:
Cygnus olor, Mute Swan
Lepus europaeus, European Hare
Myocastor coypus, Nutria
Nyctereutes procyonoides, Asian Raccoon Dog
Sus scrofa (excluding Sus scrofa domestica), Eurasian Boar

Regulated:
Alopochen aegyptiacus, Egyptian Goose
Cairina moschata, Muscovy Duck
Myiopsitta monachus, Monk Parakeet
Oryctolagus cuniculus, European Rabbit
Trachemys scripta elegans, Red-eared Slider
Xenopus laevis, African Clawed Frog

FUNGI
Prohibited:
Amylostereum areolatum, Sirex Wasp Fungus
Geomyces destructans, White-nose Syndrome
Geosmithia morbida, Thousand Canker Disease
Phytophthora ramorum, Sudden Oak Death

For the official regulations and species lists please see: http://www.dec.ny.gov/regulations/265.html

Appendix 4
Threatened and Endangered Species (New York Only)

Regulated wild blue lupine

Flowers as seen in late June

Only known larval food source: wild blue lupine

Seed pods as seen in late July

Wild blue lupine seed pods

Other adult KBB food sources

Strawberry (*Fragaria virginiana*)

Horsemint (*Monarda punctata*)

Hawkweed (*Hieracium* sp.)

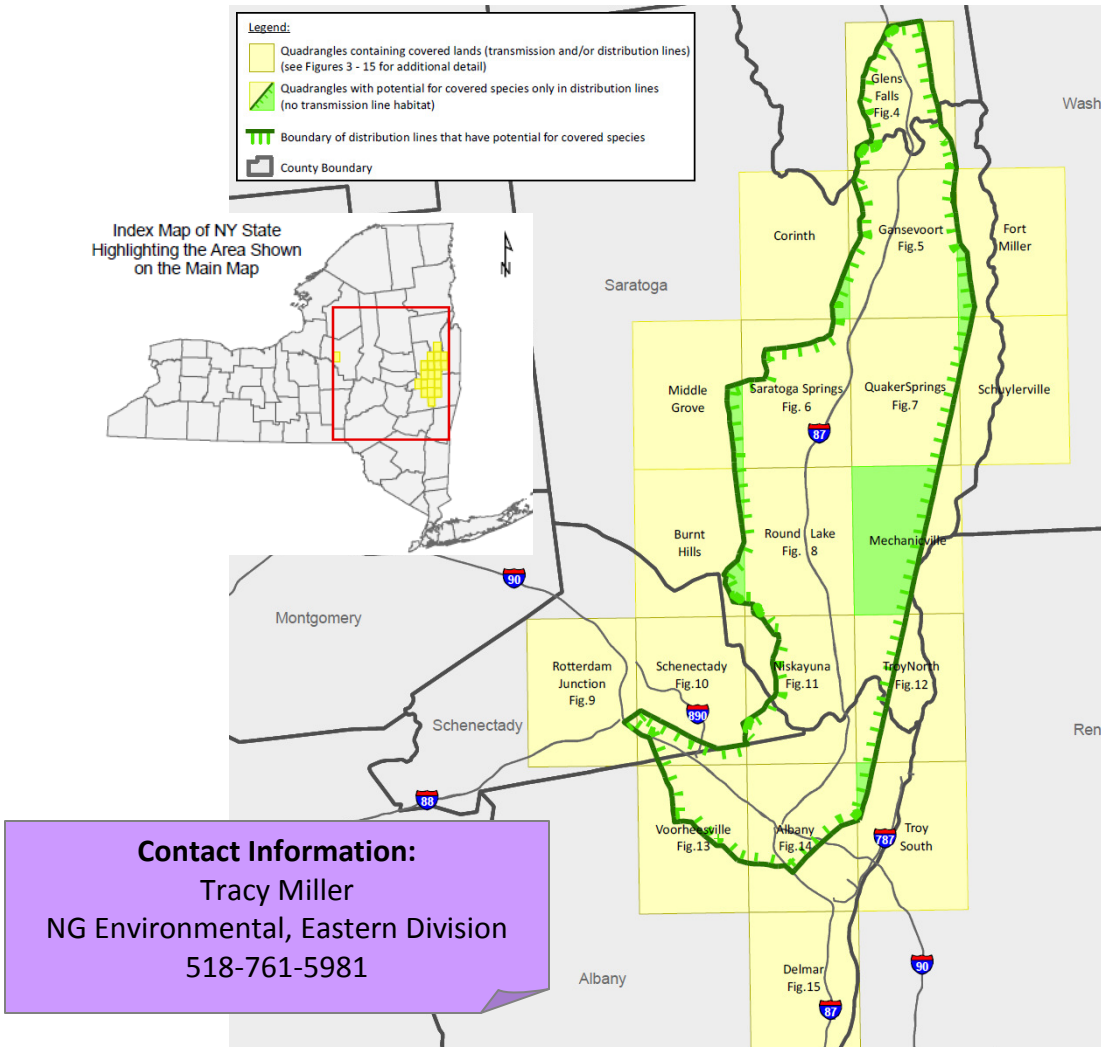
Common milkweed (*Asclepias syriaca*)

Cinquefoil (*Potentilla* sp.)

Butterfly weed (*Asclepias tuberosa*)

COVERED T, SubT, and Gas RIGHTS-OF-WAY

McKownville-Patroon 6
McKownville-Krumkill 8
Spier-Glens Falls 8
Spier-Mohican 7
Ballston-Mechanicville 6
Reynolds Rd-Feura Bush 17 Mohican-Butler 18
Spier (Brook Rd)-Ballston 11
Spier-Queensbury 5 – Ogden Brook Tap
Saratoga-Ballston 10 – General Foods Tap
Spier-Ballston 11 – South St Tap
Spier-Rotterdam 1 – Weibel Ave Tap
Rotterdam-Bear Swamp E205
Queensbury-Henry St 14 – Town of Queensbury water pipeline Easement
Grooms Rd-Johnson Rd 13 – Firehouse Rd Tap
Woodlawn-State Campus 12 – Pinebush Tap
Rotterdam-Woodlawn 35 – Pinebush Tap
Spier-Queensbury 17
Spier-Butler 4
Warrensburg-Queensbury 9
Rotterdam-Curry Rd 11
Rotterdam-Woodlawn 35
Woodlawn-State Campus 12
Karner-Patroon 5
Pipeline E31-5
Pipeline E12-9
Pipeline E31-3
Pipeline E18-19



Contact Information:
Tracy Miller
NG Environmental, Eastern Division
518-761-5981

nationalgrid
THE POWER OF ACTION

Implementation of Habitat Conservation Plan for Karner Blue Butterfly and Frosted Elfin

WHO: Planners, Engineers, Field Supervisors, Field Crews, Foresters, or anyone that plans or performs operation and maintenance activities including National Grid personnel and consultants
WHAT: Incidental take of covered species in association with electric and gas operation and maintenance activities, including vegetation and ROW management, and new construction activities
WHERE: Covered lands (ROW's with covered species) as identified on the back of this sheet
WHY: Required by federal and state endangered species regulations, as identified in National Grid's Incidental Take Permit


frosted elfin (FE)


wild blue lupine (WBL)

Karner blue butterfly (KBB)

What you must do when working in a ROW where Covered Species are present… Avoidance and Minimization Measures (AMM)

AMM's for Vegetation Management

1. Mowing, tree-trimming, and herbicide application activities will occur on a rotational basis (every 3 to 5 years) from Sept. 1 through Mar. 31. NO VEG MAINTENANCE between Apr. 1 and Aug. 31.
2. Blades of mowers and brush hogs shall be set at least 8 inches above ground level.
3. Mowing shall be conducted no more than once a year.
4. Tree girdling and hand-pulling of individuals which do not uproot wild blue lupine plants may be completed any time of year.
5. Herbicide applications
   a. Shall be applied only by personnel who are pesticide-certified and trained in identifying wild blue lupine.
   b. Shall be applied when conditions do not permit drift.
   c. Shall not be applied using an open container.
   d. Filling and emptying herbicide containers shall occur at a distance of greater than 250 ft. from KBB/FE habitat.
   e. All herbicide applicators shall carry a spill kit.
   f. All herbicide application equipment shall be inspected prior to use each treatment day.

AMM's for All Other Covered Activities

1. Vehicle use shall be minimized (i.e. conduct patrols by foot).
2. Walking/driving through WBL and nectar plants shall be avoided, unless absolutely necessary.
3. Pipe and construction debris cannot be left on the ground.
4. Ground disturbance during O&M activities will be revegetated with indigenous species (contact NG environmental).
5. Piling, stacking, chipping or dragging of vegetation will be avoided.
6. Prior to painting or using other chemicals on poles or other structures, tarps or equivalent shall be placed over any nearby WBL.
7. Fuel and oil spill kits shall be immediately available.
8. During any pipeline hydrostatic testing events, no water shall be discharged into the Covered Lands.
9. Snow plowing shall be minimized along ROW access roads. Blades shall be lifted when off pavement. Off-ROW access road areas shall have blades elevated so at least 6 in. of snow cover remains.
10. Salt applications shall be minimized. When possible, sand free of weed seeds will be used in place of salt.

OVER for more information…

Appendix 5
Notification Materials

nationalgrid

Transmission Vegetation Management
Record of Owner/Occupant Notification

Work type	
☐	Floor
☐	Sideline

Line Information			
Line Name		Road Crossing	
ROWNUM		Structure/Veg. Site	
Employee		Company	

Owner/Occupant			
Name			
Street Address			Phone
Town	State	Zipcode	Tax Map #

Type of Notification

☐ Personal, face to face	☐ Door Hanger	☐ Left IVM Information
☐ Mailed Letter, Standard Mail		☐ Mailed Registered Letter, Return Receipt

Contact Notes and /or Follow Up Contacts

Date		Time	

Notes:

Road Crossing		Structure/ Veg. Site	
Owner/Occupant			
Name			
Street Address			Phone
Town	State	Zipcode	Tax Map #

Type of Notification

☐ Personal, face to face	☐ Door Hanger	☐ Left IVM Information
☐ Mailed Letter, Standard Mail		☐ Mailed Registered Letter, Return Receipt

Contact Notes and /or Follow Up Contacts

Date		Time	

Notes:

Notification Form Jan 7.doc

Appendix 6
Herbicide Mixes

National Grid Upstate New York Herbicide Mixes - 2016

Application Type	Chemical Code	Rate	EPA #	End Use	Custom Blend Concentrate	15 Gal makes	Max Rate Gal/Acre	Notes
Cut Stump/Basal	D*	Pathfinder II	62719-176	Packaged Product		RTU		
Cut Stump/Basal	U*	20% Garlon 4 Ultra 3% Stalker 77% Hy-Grade EC Basal Oil	62719-40 241-398	20% Garlon 4 Ultra 3% Stalker 77% Hy-Grade EC Basal Oil	20% Garlon 4 Ultra 3% Stalker 77% Hy-Grade EC Basal Oil	RTU		
Cut Stump(Wetland)	C*	50% Rodeo 50% Water	62719-324	50% Rodeo 50% Water				NO Custom Blend
Hydraulic Stem Foliar (HSF)	F*	1 qt Tordon K 2 qt Garlon 4 Ultra 0.5 gal surfactant (Per 100 Gal Water)	62719-17 62179-527	0.25% Tordon K 0.50% Garlon 4 Ultra 0.5% Surfactant				
Hydraulic Stem Foliar (HSF)	Nt*	0.5 gal Garlon 3A 0.25 gal Tordon K 2 oz Escort XP 0.5 gal surfactant (Per 100 Gal Water)	SLN NY-110005 62719-17 352-439	0.5% Garlon 3A .25% Tordon K 2 oz Escort XP 0.5% surfactant	33.33% Garlon 3A 16.67% Tordon K 180 oz Escort XP 33.33% surfactant (per pallet)	1000		
Hydraulic Foliar (HF)	Ta	1.5 gal Krenite 12 oz Arsenal Powerline or Polaris 2 oz Escort XP 0.25 gal surfactant (Per 100 Gal Water)	42750-247 241-431/228-534 352-439	1.5% Krenite .09% Arsenal 2 oz Escort XP 0.25% surfactant	75% Krenite 4.5% Arsenal Powerline 135 oz Escort XP 12.5% surfactant (per pallet)	750		
Hydraulic Foliar (HF)	Qt* (Test Mix Only)	1 gal Krenite 12 oz Arsenal Powerline or Polaris 9 oz Method 240SL 2 oz Escort XP 0.5 gal surfactant (Per 100 Gal Water)	42750-247 241-431/228-534 352-786 352-439	1% Krenite .09% Arsenal Powerline .07% Method 2 oz Escort XP 0.5% surfactant	50% Krenite 4.5% Arsenal Powerline 3.5% Method 240 SL 135 oz Escort XP 25% surfactant (per pallet)	750	200	
Hydraulic Foliar (HF Wetland)	Y*	2 gal Rodeo (Per 100 Gal Water)	62719-324	2% Rodeo 0.5% surfactant				NO Custom Blend
Low Volume Backpack Foliar (LSF)	M*	3.75 gal Rodeo 1 qt Arsenal Powerline or Polaris (Per 100 Gal Water)	62719-324 241-431/228-534	53.8% Rodeo 0.5% Arsenal Powerline	NA	NA		NO Custom Blend
Low Volume Backpack Foliar (LSF)	H	5 gal Krenite 1 qt Arsenal Powerline or Polaris 4 oz Escort XP 1 gal surfactant (Per 100 Gal Water)	42750-247 241-431/228-534 352-439	5% Krenite 0.25% Arsenal Powerline 4 oz Escort XP 1% surfactant	66.67% Krenite 3.33% Arsenal Powerline 72 oz Escort XP 13.3% surfactant (per pallet)	200		
Low Volume Backpack Foliar (LSF)	Pt*	3 gal Krenite 51 oz Method 240SL 32 oz Arsenal Powerline or Polaris 4 oz Escort XP 1 gal surfactant (Per 100 Gal Water)	42750-247 352-786 241-431/228-534 352-439	3% Krenite 0.4% Method 240 SL 0.25% Arsenal Powerline 4 oz Escort XP 1% surfactant	60% Krenite 8% Method 240 SL 5% Arsenal Powerline 108 oz Escort XP 20% surfactant (per pallet)	300		
Low Volume Backpack Foliar (LSF)	V*	5 gal Rodeo Escort (Per 100 Gal Water)	62719-324 352-439	5% Rodeo 4 oz Escort XP	NA	NA		NO Custom Blend
Low Volume Backpack Foliar (LSF-Wetland)	K*	5 gal Rodeo (Per 100 Gal Water)	62719-324	5% Rodeo 1% surfactant				NO Custom Blend
Stubble-Treatment	BB*	1/2 gal Tordon K/acre 16 oz Arsenal Powerline or Polaris/acre 16 oz Surfactant/acre	62719-17 241-431/228-534	1/2 gal Tordon K/acre 16 oz Arsenal Powerline or Polaris/acre 16 oz Surfactant/acre	50% Tordon K 12.5% Arsenal or Polaris 12.5% Surfactant	N/A	1 gallon of concentrate per acre	
Test Plots	Z							

** This mix contains "RESTRICTED USE" Label(s)*

Dtd: 4/28/16

National Grid New England Herbicide Mixes - 2015

Code	Trade Name	EPA #	Active Ingredient	Mixture	Treatment
M#	Rodeo	62719-324	Glyphosate	3%-5%	Selective Foliar
	Arsenal Powerline	241-431	Imazapyr	0.125%-0.5%	(LSF)
S	Krenite S	352-395	Fosamine Ammonium	5%-10%	Selective Foliar
	Arsenal Powerline	241-431	Imazapyr	0.125%-0.5%	(LSF)
	Polaris *	228-534	Imazapyr	0.125%-0.5%	
H	Krenite S	352-395	Fosamine Ammonium	5%-10%	Selective Foliar
	Arsenal Powerline	241-431	Imazapyr	0.125%-.05%	(LSF)
	Escort XP	352-429	Metsulfuron Methyl	2-4 oz per 100 gal tank mix	
	Patriot EPA **	228-391	Metsulfuron Methyl	2-4 oz per 100 gal tank mix	
V	Escort XP	352-439	Metsulfuron Methyl	2-4 oz per 100 gal tank mix	Selective Foliar
	Rodeo	62719-324	Glyphosate	3%-5%	(LSF)
	Patriot EPA **	228-391	Metsulfuron Methyl	2-4 oz per 100 gal tank mix	
C#	Rodeo	62719-324	Glyphosate	40-50% in water	Stump (CST)
J	Arsenal Powerline	241-431	Imazapyr	3%-5%	Stump (CST)
	Polaris *	228-534	Imazapyr	0.125%-0.5%	
Q#	Garlon 4 Ultra	62719-40	Triclopyr	5%-30% in oil	Basal

Notes: # Primary Herbicide Mix
*Polaris is an alternative to Arsenal Powerline
**Patriot EPA is an alternative to Escort XP

2015 NE Soil Sterilant **Materials and rates of application**
General Treatment: (Contractor may propose a mix for approval)

Mix I: (Primary mix for most sites)		**Mix II**: (Where runoff is a concern)
Plateau @ 12 oz./acre		Pendulum Aquacap @ 1 gal per 100 gal mix
Milestone VM @ 7 oz./acre		Rodeo @ 1 qt per 100 gal mix
Landmark XP @ 3 oz./acre		Spray at 100 gls/acre rate
Grounded @ 1 pint/acre		Rodeo can be removed if no vegetation is present.

Appendix 7
New England Transmission Forestry Contractor Final Inspection Form

ROW#:
FORESTER:
IVM OR SIDELINE:

New England Transmission Forestry Contractor Final Inspection Form

Company Name:
General Foreman Name:
Area Manager Name:

(Check the item below that applies):

____ I have fully inspected the ROW listed above and consent that the entire right-of-way meets National Grid's Specifications.

____ I have fully inspected the ROW listed above and consent that the right-of-way meets National Grid's Specification requirements, except for the following locations:

Str # to Str #	Reason for not meeting specification requirements:

I am verifying that I have field reviewed the above ROW and understand that there could be a financial implication to my company if the above information is incorrect and will affect future work with National Grid.

Signatures Required:

General Foreman Signature Date

Area Manager Signature Date

FOR NATIONAL GRID OFFICE USE ONLY:
Date Received by National Grid Forester:

Appendix 8
Inventories

The Transmission Right-of-Way Inventory

1. Inventory Method

The National Grid Foresters shall ensure a detailed site-by-site inventory is completed for each electric line right-of-way scheduled for regular maintenance either prior to or at the time of actual treatment. Currently, the Forester completes the inventories in advance of actual treatment, but in the future, treatment crews may be able to accurately report equivalent field inventory data at the time of treatment, using advanced information technology and handheld geo-referenced systems. Since gas rights-of-way are generally maintained by mowing, inventories for these rights-of-way are not necessary.

2. Purpose of the Site-by-Site Inventory

A site is an area within the right-of-way that consists of a common land use pattern or characteristic, or that requires a unique and different treatment method from adjacent areas. Each site may be as large or small as a land use or treatment method requires. The smallest reportable site shall be a tenth of an acre.

The purpose of the inventory is to thoroughly assess site-by-site field conditions, accurately document desirable and undesirable vegetation conditions, insure the assignment of the appropriate prescriptive treatment methods, and record herbicide use requirements. The inventory also identifies special landowner concerns or sensitive site conditions.

3. Inventory Records

The inventory data is presently collected using handheld data envy systems to record site-specific data. Data collected through the inventory process is then transferred to the master program and summarized for a variety of reports that are used within the maintenance program.

The items documented in the site-by-site inventory include:

a) Location: The inventory shall describe the site in relation to the adjacent structures, assigning a unique management site number to each site. A management area shall be an area of similar vegetation components that warrant a common management technique.

b) Land use: The inventory shall identify the right-of-way and/or adjacent land use categories for each site, together with the site sensitivities that influence the management technique that is selected. In the event of multiple uses or sensitivities, the category having the greatest influence on the maintenance method chosen should be assigned. The special note area can be used to further describe and define sensitivities.

The land use codes have remained unchanged from the beginning of the program, which has allowed for consistent review and performance assessment over the last 23 years. The land use code for a particular site is a combination of numbers assigned to represent the land use activity, height, and density class of undesirables requiring treatment and the density of the retained shrub community.

The land use categories are:

Land use (in the thousands position)
- 1000 – Streams
- 2000 - Wetlands
- 3000 - Road Crossings
- 4000 – Commercial/Industrial
- 5000 - Residential
- 6000 – Active Cropland
- 7000 - Active Pasture
- 8000 - Brush Lands
- 9000 – Woodlands

Height - Undesirable, taller growing species (in the hundreds position)
- 000 - no height
- 100 - small (less than 6 ft.)
- 200 - medium (6 to 12 ft.)
- 300 - tall (over 12 ft.)

Density - Undesirables (in the tens position)
- 00 - no density
- 10 - very light (generally less than 100 stems acre)
- 20 - light (up to 30% canopy cover, and 100 to 1,500 stems/acre)
- 30 - medium (30 - 65% cover, and 1,500 to 5,000 stems/acre)
- 40 - heavy (greater than 65% cover, and over 5,000 stems/acre)

Density - Compatible shrubs (in the ones position)
- 0 - none
- 1 - light (less than 30% woody shrub canopy)
- 2 - medium (30 - 65% canopy cover)
- 3 - heavy (greater than 65% canopy closure)

c) Plant community: The inventory shall include identifying and reporting the height and density of undesirable taller growing species, together with the density of the predominate desirable woody shrub species. The species lists in Appendix 9 shall be used as a guide to identify woody tree and shrub species and their compatibility within each site. Within the Limits of any easement, property owner concerns, or environmental constraints, the long-term objective should remain the eventual removal of any species capable of invading the wire security zone, while retaining and fostering smaller compatible species already present within the site.

The following Land Use Categories are employed in Forestry GIS.

Land Use In Forestry GIS	
Access Road	Off Right-of-way access road
Brush Land	Land covered by brush
Campsite	Managed camping area
Christmas Trees	Managed conifer trees for agriculture
Commercial/Industrial	Land used for Commercial/Industrial
Cropland	Cropland in active cultivation
Field	Open mowed fields; hay or crop
Golf Course	Managed golf course
Hedgerow	Border between managed fields
Nursery	Managed trees for agriculture
Orchard	Managed fruit trees
Organic Farm	Certified organic farm
Owner No Herbicide	No herbicide; per landowner agreement
Parking Lot	Paved or gravel lot with no vegetation
Pasture	Animal pasture
Pond/Lake	Water body; not wetland or river
Private Well	Private water supply; encased or open spring
Protected Watershed	Watershed areas with restrictions
Public Surface Water	Public water sources: reservoirs and tributaries
Public Well	Managed well for public water supplies
Railroad	Active railway
Residential	Residence with maintained lawn and/or trees
River Crossing	River crossings with maintained buffers
Road Crossing	Roads with or without maintained buffers
Road Crossings	Multiple roads within one site
Roadside	Road parallels transmission line
School	Public/private school where herbicide restrictions exist
Special	Any area that requires special treatment/no listed land use applies
State Park/Forest	Managed/regulated park or forest
Streams	Stream crossing; may be seasonal
Substation Perimeter	Area around substation that requires vegetation management
Wetlands	Regulated wetlands
Woodlands	Area that may remain wooded

Appendix 9
Border Zone/Wire Zone Vegetation Lists

EXHIBIT A:

Undesirable Tall Growing Species

The following is a list of tall growing tree species that are considered undesirable in most right-of-way situations and should be removed from the right-of-way floor wherever practicable, to the extent permitted by landowner constraints and easement conditions. The primary objective of the Transmission Right-of-Way Management Program is to effectively remove and control the re-growth and reinvasion of these species.

In sites, due to terrain, conductor height, or other right-of-way variable, where a normally undesirable tall growing species will never reach the ATVM clearance distances, such tree may be retained on the right-of-way during routine maintenance as long as there is no undesirable affect or risk to access, construction, reliability or public safety. Such locations will be determined through a combination of field measurements, profile mapping or other technology and will also be routinely reviewed and verified during each inventory cycle.

Species	Code	Species	Code
Ash	ASH	Cucumber Tree	CUC
Mountain	MAS	Elm	ELM
Balsam Fir	BAF	Hemlock	HEM
Basswood	BAS	Hickory	HIC
Beech	BEE	Hophornbeam	HOP
Birch	BIR	Maple	MAP
Cherry		Oak	OAK
Black	BCH	Pine	PIN
Choke	CCH	Poplar/Aspen	POP
Domestic	DCH	Red Mulberry	MUL
Pin (Fire)	PCH	Sassafras	SAS
Black Gum/Tupelo	BGU	Spruce	SPR
Black Locust	BLO	Tamarack/Larch	TAM
Black Walnut	BWA	Tree-of-Heaven	THE
Butternut	BUT	Tulip/Yellow Poplar	TUL
Catalpa	CAT	Willow	WIL
Cedar	CED	Other	OTH
Chestnut	CHE		

EXHIBIT B:

Small to Medium Trees

The following is a list of small to medium trees that may be compatible along the edges of the right-of-way, except on narrower sub-transmission rights-of-way. They should be removed within the wire zone except where the mature height would not invade the Minimum Clearance Distance, or local conditions do not warrant removal. Any plant on the right-of-way that invades the Minimum Clearance Distance may be removed. These smaller tree species may be preferred for retention in buffer areas and other sensitive sites rather than taller growing tree species.

Species	**Code**	**Species**	**Code**
Apple	APP	American Hornbeam	
Autumn Olive	AUT	"Ironwood"	HOR
Buckthorn	BUC	Hawthorne	HAW
Common Buckthorn		Mountain Maple	MOM
European Buckthorn		Pear	PER
Dogwood		Russian Olive	RUS
Alternate Leaf	ADG	Shadbush/Serviceberry	SHD
Flowering	FDG	Shrub Willow	WIL
Cedars	CED	Speckled Alder	ALD
Witch Hazel	WIH	Staghorn Sumac	SUM

EXHIBIT C:

Woody Shrubs

The following is a list of shrub species commonly found on rights-of-way across the service territory. While they are nearly always compatible in the border zone, several may grow tall enough to enter Minimum Clearance Distance.

Species	Code	Species	Code
American Barberry	BAR	Privet	PRI
Chokeberry		Gooseberry	RIB
Black Chokeberry	BCB	Rose	
Red Chokeberry	RCB	Domestic	DOR
Blueberry		Multiflora	MUR
Low	BLU	Rubus	RUB
Highbush	HBL	Blackberry	"
Button Bush	BTN	Raspberry	"
Dewberry	DEW	Silverberry	
Dogwood	DOG	American	SIL
Red Osier	"	Sumac	SUM
Stiff (similar to Red Osier)	"	Smooth	"
Grey	"	Winged	"
Silky	"	Common Spicebush	SPB
Roundleaf	"	Spirea	SPI
Elderberry	ELD	Sweetfern	"
Hazelnut	HAZ	Steeple Bush	"
American Hazelnut	"	Sweetfern	SWF
Beaked Hazelnut	"	Viburnum	VIB
Honeysuckle	HON	Arrowwood	ARR
Huckleberry	HUC	Highbush Cranberry	HCR
Juniper	GRJ	Mapleleaf	MVB
Dwarf	"	Nannyberry	NAN
Ground/Trailing	"	Northern Wild Raisin	RAI
Mountain Holly	MOH	Hobblebush	HOB
Mountain Laurel	MOL	Winterberry Holly	WIN
New Jersey Tea	NJT	American Yew	AMY
Northern Prickly Ash	NPA		
Shrub Oak	SOK	Climbing Vines	
		Bittersweet	CLB
		Grape	GRA

Note that some of these species can be classified as either exotic or invasive. In addition, some of these species are noxious plants – particularly Multiflora Rose and Poison Sumac. In most situations management objectives within and adjacent to the right-of-way may warrant the removal or reduction of these species. Future discussions with State and Federal agencies to address invasive and exotic species on a landscape scale may require modifications of the current treatment course of action for some species.

Appendix 10
Conductor Clearances

(Effective October 1, 2016 per FAC 003-4)

6.0 Clearance Distances

National Grid specifies clearance distances to be achieved at the time of vegetation management work and minimum clearances to be maintained at all times. Clearance distances established by National Grid below conform to the following regulatory standards and industry guidelines:

- North American Electrical Reliability Council (NERC) Vegetation Management Standard FAC-003-4;
- National Electric Safety Code (NESC) Rule 218; and
- Applicable State vegetation management standards or regulations.

6.1 National Grid At Time of Vegetation Management Clearance Distances

When performing ROW vegetation management, the following At Time of Vegetation Management (ATVM) Clearance Distances, by voltage, shall be achieved. Note: ATVM Clearances apply to incompatible species only. (See Definitions in Section 3.0).

At Time of Vegetation Management Clearance Distances (ATVM)		
Voltage[1]	**Vertical (feet)**	**Horizontal (feet)[2]**
23 to 46kV	12	12 – 38
69kV	14	14 – 42
115kV	18	18 - 50
230kV	22	22 – 50
345kV	26	26 – 50
450kV DC	28	28 - 50

1 Includes some Distribution Voltages below 23kV in New England

2 For span lengths greater than 500 feet, contractors need to achieve a horizontal ATVM clearance distance at the higher end of the range. Each range incorporates span lengths, an increase in voltage increases span length, and therefore increases clearance distance.

ATVM Clearance Distances are greater than the Minimum Clearance Distances. In establishing these clearance distances, National Grid considered site-specific conditions such as operating voltage, IVM techniques, fire risks, tree and conductor movement, species types and growth rates, species failure characteristics, local climate rainfall patterns, line terrain and elevation, location of vegetation within the span, worker approach distance requirements and the expected time frame (the maintenance cycle) before vegetation management will be repeated at the site.

6.2 National Grid Minimum Vegetation Clearance Distances (NGMVCD)

Notwithstanding the ATVM Clearance Distances above, the National Grid Vegetation Clearance Distances (formerly Clearance 2) specified below shall be maintained at all times. NGMVCD shall be maintained at all times in order to prevent flashover between vegetation and conductors. The transient overvoltage factor is known for most of the 12kV through 345kV voltages, however, National Grid has chosen to base the NGMVCD on Tables in Annex D of the IEEE Standard 516-2009, a more conservative approach. For the 450kV DC voltage, Table 10.3 of the EPRI HVDC Reference Book is cited for the NGMVCD.

National Grid Minimum Vegetation Clearance Distances (NGMVCD)	
Voltage	**Radial Clearance (feet)**
12 to 46kV	1
69kV	2
115kV	4
230kV	6
345kV	10
450kV DC	12

6.3 Minimum Vegetation Clearance Distance (MVCD)

Transmission Standard FAC-003-4 for Vegetation Management requires a minimum clearance for voltages operated at or above 200kV or any line operated below 200kV designated by the Planning coordinator as an Interconnection Reliability Operating Limit (IROL) The table below depicts a clearance distance that is representative of the most conservative minimum for elevations above sea level for the service territory (up to 3000 feet) The comprehensive table is located in the FAC-003-4 Standard and must be used for regulatory reporting purposes.

Minimum Vegetation Clearance Distances (MVCD) for US Operations	
Voltage	**Radial Clearance (feet)**
115kV IROL	~~1.61~~ 2.0
230kV	~~3.36~~ 4.3
345kV	~~3.52~~ 4.5
450kV DC	~~6.63~~ 8.81

6.4 Optimum Right-of-Way Width

The above ATVM clearance requirements are based on the optimal ROW width developed for various voltage classes. The ROW width is defined as the linear distance from the center line transmission to the ROW edge. The ROW edge is typically provided for by easements or fee owned ROW purchased at

the time of initial transmission line construction. A majority of transmission lines on National Grid's system have widths that are optimal; the remainder does not. This is why the ATVM horizontal distances were specified as a range. The optimum ROW widths specified below are those distances shown over 50 years of operational experience to render the combined benefits of good access, public safety, ease of construction and enhanced reliability. They may be used for guidance or planning purposes for maintenance, construction or regulatory compliance.

Optimum Right-of-Way Width	
Voltage	**Optimum Width from Centerline of Circuit (feet)**
12-46 kV	37.5
69 kV	37.5
115 kV	50
230 kV	60
345 kV	75

6.5 Exceptions to Clearance Distances:

6.5.1 ATVM Clearances

Legal restrictions and environmental and social concerns may prevent National Grid from achieving ATVM Clearance Distances at various sites across the transmission system. For NERC regulated circuits, National Grid shall map these sites within the VIPER (**V**egetation **I**nspection **P**lanning **E**valuation and **R**eporting) system. All such sites will be inspected as needed and mitigation procedures taken to assure compliance with NGMVCD and MVCD.

6.5.2 Optimal Widths

6.5.2.1 New Construction

When new transmission lines are constructed, the optimal ROW width is the target width sought during ROW acquisition. Width may vary as a result of construction type, terrain and acquisition feasibility.

6.5.2.2 Excess Fee Owned Right of Way

Where fee ownership extends beyond optimal width, other factors may determine a width, such as:

- Historic vegetation management records
- Construction Plans

Appendix 11
Imminent Threat Procedure

Handling Imminent Vegetation Threat to Transmission Circuit Operation

Is line voltage above 200 kV or 115 kV that is designated at an IROL? (NERC Regulated Lines)

No? …. Unsure? Notify National Grid Division Forester (or designee) and await further instructions.

Yes? Immediately notify Division Forestry Supervisor or designee of the threat. They must execute the following procedure:

Declaration of an Imminent Threat

Is vegetation approaching or threatening to approach the MVCD to the conductor (as a fall-in or grow-in)? Would this threat need to be removed within 24 hours?
YOU MUST REPORT IMMEDIATELY!!

Communication

Without unnecessary delay, call the Transmission Control Center to report the threat.

Contact	Location	Telephone Number
NE Transmission Control Center	Northboro, MA	(800) 423-6029 Or (800)-382-7260
NY Transmission Control Center	N. Syracuse, NY	(315) 460-2110

Provide the following:
1) enough information about the threat so the Transmission Control Center can decide on the appropriate operating action.
2) contact information for yourself and your Division Forestry Supervisor.

Mitigation Measures

Stay clear of danger and wait for instructions from the Transmission Control Center and Division Forestry Supervisor. Assist where directed.

Documentation

a) Date and Timeline of all steps taken (observation, reporting, mitigation, etc.)
b) Line name/# and structure #s
c) Explanation of threat with surrounding circumstances
d) How the mitigation decision was developed, including discussions with the system operator
e) How the imminent threat was mitigated (actions by system operator and Forestry Supervisor)
f) Photographs, if possible