



**2014 YEARLY OPERATIONAL PLAN FOR
Central, Eastern and Southeastern Massachusetts**



Submitted by:
NSTAR Electric & Gas

Prepared by:
 Vegetation Control Service, Inc.

Submitted:
FEBRUARY 25, 2014

SUMMARY

In compliance with the Massachusetts Department of Agricultural Resources' Rights-of-Way Regulations (333 CMR 11.00), this Yearly Operational Plan (YOP) informs municipalities of NSTAR Electric and Gas's intent to utilize state recommended herbicides on electric and gas rights-of-way (ROW) in 2014. ROWs treated in 2013 are included in this YOP in case they need a "touch-up" spot treatment.

The application of herbicides will be carried out within the specifications of our Integrated Vegetation Management program, outlined in our five year Vegetation Management Plan.

This YOP identifies target vegetation; the affected rights-of-way and towns; the herbicides, rates and methods of application; alternative control methods; the individual responsible for supervising the YOP, and the qualified contractors that will perform the application. It explains how sensitive areas; buffer zones and sites where herbicides are either restricted or not permitted are identified, appropriately marked, treated and protected. It addresses procedures for the mixing, handling and loading of herbicide concentrates. Finally, it includes Herbicide Fact Sheets and Labels, a list of emergency resources and telephone numbers, and maps marked with known Sensitive Areas.

The YOP process provides for a forty-five day public review and comment period, in conjunction with the twenty-one day municipal Rights-of-Way notification period. These review periods give communities an opportunity to provide information that will help identify additional areas that may require specific precautions or protection. Finally, notice will be published in general circulation newspapers at least 48 hours before the scheduled application.

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I. INTRODUCTION

In compliance with Commonwealth of Massachusetts' Rights-of-Way Vegetation Management Regulations (333 CMR 11.00) NSTAR Electric's Yearly Operational Plan (YOP) details our vegetation management program for 2014. This YOP is consistent with the terms and procedures set forth in NSTAR's 2013-2017 five-year Vegetation Management Plan (VMP) per 333 CMR 11.05; with the Massachusetts Pesticide Control Act (Chapter 132B); with all pertinent clauses in Chapter 85 of the Acts of 2000; with the Massachusetts Endangered Species Act (MESA; MGL c. 131 A) and regulations (321 CMR 10.00), and with all Federal and State acts and regulations that apply to right-of-way vegetation management.

NSTAR is an operating company of Northeast Utilities delivering electricity to approximately 1.1 million electric customers in 81 municipalities and natural gas to approximately 300,000 gas customers in 51 municipalities. Electricity and Natural Gas is transmitted over hundreds of miles of distribution and transmission rights-of-way (ROW) throughout the central, eastern, southeastern, and cape and islands regions of Massachusetts. To ensure safe reliable electric and gas service, NSTAR must keep these ROWs free from hazards and encroachments. In this effort, the vegetation on the ROW corridors must be maintained at an early stage of plant succession (herbaceous plants and shrubs).

Using the Integrated Vegetation Management Program (IVM) described in the VMP, NSTAR 's program is based on a 3-5 year selective herbicide application and where appropriate mechanical treatment cycle. This program allows for the safe delivery of reliable electric and gas service and supports a healthier more diverse habitat for wildlife that depends upon early successional landscapes (See VMP for further description of NSTAR's IVM program).

II. CHAPTER 132B AND 333 CMR 11.00

The purpose of this chapter is to conform the laws of the commonwealth to the Federal Insecticide, Fungicide, and Rodenticide Act, Public Law 92-516, as amended, and the regulations promulgated there under and to establish a regulatory process in the commonwealth. The exclusive authority in regulating the labeling, distribution, sale, storage, transportation, use and application, and disposal of pesticides in the commonwealth shall be determined by this chapter. (*MGL 132B, Section 1*)

Chapter 132b (Massachusetts Pesticide Control Act) was created to ensure a clear and uniform set of standards for the entire Commonwealth of Massachusetts ***in order to protect the public from the negative impacts that arise from fragmented, decentralized, sets of standards***. In this effort, the Commonwealth, through the Department of Agricultural Resources (DAR) retains the sole right to regulate the use of pesticides, including herbicides, throughout Massachusetts. DAR takes this responsibility extremely seriously and the regulations promulgated under Chapter 132b are stricter than Federal standards.

The purpose of 333 CMR 11.00 is to establish a statewide and uniform regulatory process which will minimize the uses of, and potential impacts from herbicides in right of way on human health and the environment while allowing for the benefits to public safety provided by the selective use of herbicides (*333 CMR 11.01*).

333 CMR 11.00 is the most comprehensive rights of way regulation in New England. It requires an Integrated Pest Management (in this case IVM) approach to right of way vegetation management; the establishment of standards and procedures to prevent unreasonable risks to humans or the environment, and a multi-layered system of public and municipal notification that requests input about environmentally and culturally sensitive areas. All of this is outlined in NSTAR's VMP, annual YOPs, *The Environmental Monitor* Notice, 21 day notification, Public Water Supplier notification and 48 hour newspaper notice which serve as guides for the public, state and municipal officials, vegetation management contractors and NSTAR personnel.

To ensure compliance with Chapter 132b and 333 CMR 11.00, DAR performs routine inspections of rights-of-way treatment crews, retains chemists, and perform further tests before approving a limited list of herbicides approved for use in Sensitive Areas (pursuant to 333 CMR 11.04 (1)(d)).

As detailed in the VMP and YOP, NSTAR's IVM program strictly adheres to all the requirements of Chapter 132b and 333 CMR 11.00. NSTAR only retains herbicide application treatment contractors that hold Massachusetts' certifications and licenses to apply pesticides, which require ongoing training to maintain. All Sensitive Areas (see section V) are treated appropriately using either mechanical treatment methods or Commonwealth of Massachusetts recommended herbicides for use in Sensitive Areas. In fact, NSTAR only uses these recommended herbicides on the entire length and cleared width of its ROW corridors.

Beyond the requirements of 333 CMR 11.00 and in compliance with Chapter 216 of the Acts of 2012, NSTAR also notifies "abutters" (houses and businesses that abut the rights-of-way being treated in that year) within view of the ROWS before treatments begin. Treatment contractors are required to leave door hangers or talk personally with abutters which allow the contractor to answer site specific questions, identify private wells and help explain the program.

III. LOCATION OF INTENDED TREATMENTS

In 2014 NSTAR plans on completing herbicide applications on 18 transmission, and distribution line ROWs as listed in Table I. Table II includes the 17 ROWs treated in 2013 which might need "touch-up" spot treatments. At least one of the ROWs scheduled for a 2014 IVM treatment pass through the 26 municipalities in Table III. Table IV is a list of the 28 towns through which at least one 2013 ROW passes that might need a "touch-up" spot treatment. Please note that some of these towns appear on both lists and the total number of municipalities is 40 (see Appendix I. Maps).

a. Integrated Vegetation Management Herbicide Treatments:

Table I. 2014 Rights-of-Way:

ROW Number	Line Name
25 KV Distribution Rights-of-Way	
206	R/W 205 - R/W 208, Marshfield
207	Duxbury-Brant Rock
208	Marshfield-Seaview
209	East Marion Sub - Tempest Knob Sub
213	Newfield-Cordage Tap
214	N Plymouth Sub - Cordage Tap
NB Bus Park	2-103-103 & 2-101-101
Transmission Rights-of-Way	
4B	Canton Tap
8-2	Station 342 Sudbury – Station 282 Waltham
9	R/W 5 - Sta.375 Dragon Court
10	Sta. 447 Walpole - Sta. 148 Needham
14	R/W 9 - I93 Reading T/L
15	Pilgrim - Snake Hill
141	Wing Lane - Arsene
241	Brook St. - West Pond
243	Kingston - Marshfield
244	Horse Pond Tap - Manomet
280	Bridgewater- Carver

Table II. List of Potential Touch-up Rights-of-Way from 2013 YOP:

ROW Number	Line Name
25 KV Distribution Rights-of-Way	
101	Fair Haven - Long Road, Fairhaven
201	R/W241 - Kingston Sub also includes spur to South Duxbury Sub
210	Wareham Sub - East Wareham Tap
212	Buzzards Bay Sub - Onset Sub
215	Marshfield-Brant Rock
Transmission Rights-of-Way	
5	Sta. 211 - Woburn - Grid Billerica
8-1	Sta. 240 Framingham - Sta. 342 Sudbury
140	Acushnet to Tremont
144	High Hill Sub to Fisher Rd Sub
145	Tremont to Canal
180	EHV- Canal to Pilgrim Tap
240	Tremont – Kingston
242	Kingston – Whitman

Gas Line Rights-of-Way	
1	Hat Line: Wilson Street, Hopkinton to Pond Street, Ashland
2	Andrews St: Andrews St. to brook behind Adesa Auto
3	Worcester Lateral: Upland St. to McKeon Rd.
4	M&M Line: Scoticut Neck Road, Fairhaven to Mattapoissett Road

Tables III & IV: List of Affected Herbicide Municipalities:

Table III. 2014 Herbicide municipalities:		
Acushnet#	Marion	Walpole
Bridgewater	Marshfield#	Waltham
Burlington#	Medfield	Wareham#
Canton	Middleborough#	Wayland#
Carver#	New Bedford	Weston
Dover	Plymouth#	Westwood
Duxbury#	Plympton#	Wilmington
Fairhaven#	Sharon	Woburn#
Kingston#	Sudbury#	

#also has a right(s)-of-way scheduled for a “touch-up” treatment

Table IV. Herbicide municipalities with 2013 Rights-of-Way that might need a “touch-up” treatment:		
Acushnet	Hanson	Plympton
Ashland	Hopkinton	Rochester
Burlington	Kingston	Sherborn
Carver	Marshfield	Sudbury
Dartmouth	Mattapoissett	Wareham
Duxbury	Middleborough	Wayland
East Bridgewater	Natick	Whitman
Fairhaven	Pembroke	Woburn
Framingham	Plymouth	Worcester
Freetown		

IV. IDENTIFICATION OF TARGET VEGETATION FOR HERBICIDE APPLICATIONS

Pursuant to the policy and intent set forth in NSTAR’s VMP, all vegetation must be removed that obscures the ROW corridors and grows tall enough to interfere with the safe, efficient and legal operation of an electrical power line. In the wire zone, trees and brush are targeted, and native, low growing plant communities that have a mature height less than three feet are established. In the border zone, incompatible trees and brush are targeted, and the growth of native trees and shrubs that have a mature height less than 15 feet is encouraged.

The primary target is all trees species within the cleared width of the ROW; except in Priority Habitats that are under the purview of the Natural Heritage and Endangered Species Program of the Department of Fish and Game (NHESP), which will be treated on a case by case basis.

Targets include, but are not limited to:

Alder	Cherry	Pine
Aspen	Hemlock	Maple
Beech	Hickory	Oak
Birch	Locust	Sassafras

There are more non-target vegetation species on an electric or gas ROW than targets. In fact, ROW's are one of the primary early successional plant communities remaining in New England. As a result, many plant and animal species use ROWs as their homes, feeding grounds or nurseries. Certain plant species, therefore, are generally encouraged on the ROW through the use of an IVM program:

- Most herbaceous growth is acceptable and encouraged
- Shrubs that mature less than 15 feet in height are only targets where due to their location or attributes they interfere with the function of the ROW.

Certain categories of non-tree species are targets under some circumstances, because of their location and/or their nature. Dense woody vegetation, shrubs and vines are targets where they are capable of interfering with the inspection and maintenance of the poles, wires, and along access roads, paths and gates which need to be kept clear, especially for emergencies.

NSTAR intends to control invasive, noxious and poisonous plant species at their facilities. Invasive plant species have become an increasing concern throughout Massachusetts in areas that include ROW corridors where they can spread rapidly and then move into the adjacent landscape. NSTAR plans to use herbicides to spot treat poisonous plants at sites under its ROWs identified as having a high risk of posing a health hazard. Noxious vegetation, likewise, poses a risk to the safety and health of all individuals working on or traversing a ROW and it can impede a rapid response in an emergency.

Examples of non-tree species generally considered targets, include, but are not limited to:

Autumn Olive	Hawthorne	Purple Loosestrife
Blackberry	Honeysuckle	Sumac (Staghorn and Poison)
Buckthorn	Japanese Knot Weed	Virginia Creeper
Common Reed	Multiflora Rose	Willow
Grapevines	Oriental Bittersweet	
Greenbriar	Poison Ivy	

V. DEFINITION, IDENTIFICATION AND TREATMENT OF SENSITIVE AREAS

Sensitive Areas are those areas within a ROW in which public health, environmental concerns or agricultural interests warrant special protection to minimize the risk of unreasonable adverse effects.

The map(s) in Appendix I are a resource and a tool for both the public and the vegetation management crews. They contain the data necessary to identify, mark and treat Sensitive Areas appropriately.

The map(s) include known Sensitive Areas available at the printing of this YOP. Some Sensitive Areas are included in the base USGS topographic maps. The most current data

available through MassGIS such as public water suppliers, certified vernal pools, etc. and any data that NSTAR has collected to date on areas such as private wells are added on top of the USGS data. At the time of treatment, any additional Sensitive Areas collected will be added to the maps utilized by our vegetation management contractors. Please note that Zone II's and limited spray areas are not mapped since in 2014 NSTAR will only use herbicides approved for use within this type of Sensitive Area in their IVM program.

There is one type of Sensitive Area not included on the maps that we are not authorized to publish: the locations of the Priority Habitats of state listed species as regulated by the Natural Heritage and Endangered Species Program (NHESP) of the Division of Fisheries & Wildlife. A map layer of Priority Habitats is available to the general public at www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/, but it is neither specific to areas of concern for herbicide applications nor does it include data on the individual species since the exact location and details of their habitat is protected. Please be assured that we follow all necessary precautions to stay in compliance with 321 CMR 10.00 and this YOP was approved by NHESP.

Prior to any herbicide application, Sensitive Areas will be identified and when necessary marked in the field by an experienced vegetation management treatment crew point person, by individuals trained in the identification of Sensitive Areas that require the use of GIS (geographic information systems) and GPS equipment, and/or by a NHESP approved botanist trained in the delineation of state-listed species.

Two simple descriptions guide the complex identification of the Sensitive Areas listed in 333 CMR 11.02: *Readily identifiable in the field* and *Not readily identifiable in the field*:

- A. *Readily identifiable in the field* areas will be treated and marked according to all applicable restrictions listed in 333 CMR 11.00 and NSTAR's 5-year VMP.
- B. *Not readily identifiable in the field* areas are identified by the use of the data marked on our maps and additional data collected in the YOP and notification processes before the time of treatment.

NSTAR and contractor personnel assigned the task of identifying Sensitive Areas in the field will use the following sources and methods:

- A. Massachusetts Department of Environmental Protection (DEP) water supply maps/GIS mapping layers available through MassGIS
- B. Massachusetts Department of Agricultural Resources (DAR) records of identified private wells along the ROW
- C. Correspondence and input from municipalities within the consecutive forty-five day YOP and twenty-one day municipal ROW notification review and comment periods and the 48 hour newspaper notification
- D. Correspondence and input from NSTAR's abutter notification procedure
- E. A point person who precedes the treatment crew verifying identified Sensitive Areas and any additional areas that may require special precautions.

The following section details some of the Sensitive Areas that require special attention, particularly those that are classified as either no spray or *not readily identifiable in the field*:

A. *Limited Spray Areas:*

Per 333 CMR 11.02, the following need to be identified in the field, require the use of herbicides on the *DAR Rights-of-Way Sensitive Area Materials List*, and time restrictions between herbicide applications (see Appendix II, Sensitive Area Table). Please note that for IVM herbicide applications, NSTAR uses only Sensitive Area approved herbicides on our entire ROW system:

- (a) any Zone II or IWPA
- (b) a distance of between 100 feet and 400 feet of any Class A Surface Water Source
- (c) a distance of between 10 and 200 feet of any tributary or associated surface water body where the tributary or associated surface water body runs outside the Zone A for the Class A surface water source
- (d) a lateral distance of between 100 and 200 feet for 400 feet upstream, on both sides of the river, of a Class B Drinking Water Intake
- (e) a distance of between 50 and 100 feet of any identified Private Well
- (f) a distance of between 10 and 100 feet of any Wetlands or Water Over Wetlands
- (g) a distance of between 10 feet from the mean annual high water line of any river and the outer boundary of the Riverfront Area
- (h) a distance of between ten feet from any Certified Vernal Pool and the outer boundary of any Certified Vernal Pool Habitat
- (i) a distance of 100 feet of any Agricultural or Inhabited Area.

Please Note that “(f)” is modified by the DAR (formerly Department of Food and Agriculture) *Decision*, dated October 12, 1995, concerning the wetland impact study conducted pursuant to 333 CMR 11.04(4)(c)(2). According to the *Decision*, NSTAR may use herbicides within wetlands except on or within 10 feet of standing or flowing water (item “g” in the *no-spray areas* below was removed from the no spray list for utilities because it does not apply for the same reason).

B. *No-Spray Areas:*

Again, quoting from 333 CMR 11.02 the following no-spray areas need to be identified:

No-Spray Area, any area that is both within a Right-of-Way and within:

- (a) any Zone I
- (b) 100 feet of any Class A Surface Water Source
- (c) 100 feet of any tributary or associated surface water body where the tributary or associated surface water body runs within 400 feet of a Class A surface water source
- (d) 10 feet of any tributary or associated surface water body where the tributary or associated surface water body is at a distance greater than 400 feet from a Class A surface water source
- (e) a lateral distance of 100 feet for 400 feet upstream, on both sides of the river, of a Class B Drinking Water Intake
- (f) 50 feet of any identified Private Well [within 100 feet of the ROW]
- ...
- (h) 10 feet of the mean annual high-water line of any river
- (i) 10 feet of any Certified Vernal Pool.

C. Identification and Treatment of Private Drinking Water Supplies

No herbicide treatments will take place within fifty feet of any identified private wells located within one hundred (100) feet of the ROW. NSTAR updates its private well records based on available data.

Municipalities should assist in the identification process and the DAR will be consulted again prior to the treatment in an attempt to keep the private drinking water supply information up-to-date.

Identified private drinking supplies within one hundred (100) feet of a ROW will be permanently recorded on appropriate maps.

D. State-Listed Species Habitat

NSTAR recognizes the importance of the Massachusetts Endangered Species Act, M.G.L.C. 131 A, and its significance to ROW vegetation management. NSTAR will comply with all applicable portions of this Act and the regulations promulgated thereunder. NSTAR will also follow the rules and prohibitions directed at human activities which Take Species or alter their Significant Habitat (as of this printing there are no designated Significant Habitat in Massachusetts).

321 CMR 10.14, Massachusetts Endangered Species Act Regulations, Part II Exemptions and 333 CMR 11.04(3)(a-c) exempts utility ROW vegetation management from the permit process under the following conditions:

(12) The management of vegetation within existing utility rights-of-way provided that the management is carried out in accordance with a vegetation management plan approved in writing by the Division prior to the commencement of work for which a review fee shall be charged, the amount of which shall be determined by the commissioner of administration under the provisions of M.G.L. c.7, § 3B...

To comply with exemption 10.14(12), NSTAR will submit this YOP to the NHESP for review.

The NHESP has delineated areas as Priority Habitat based on the "Best Scientific Evidence Available" to protect State-listed species from a "take." Under the approval process, details about the Priority Habitat of state-listed species that might be affected by our activities and management recommendations are shared with NSTAR under strict confidentiality agreements. Using this data and best management practices, NSTAR and contract personnel will follow the appropriate vegetation management treatment methods within these sensitive areas taking all practical means and measures to modify ROW vegetation management procedures to avoid damage to state-listed species and their habitat.

To identify Priority Habitats, NSTAR personnel, NHESP approved review botanists and vegetation management crews must use proper identification procedures. Contractors are, therefore, required to train their personnel to recognize the location of Priority Habitats using one of the following tools: paper maps, GPS coordinates and/or GIS systems.

VI. PROPOSED HERBICIDE TREATMENT METHODS

Under NSTAR's IVM program, combined with mechanical "prep-cutting," mowing and side-trimming activities, herbicide applications will be applied on foot using selective low pressure foliage treatments with backpack sprayers and cut stump or basal treatments. Experienced, Massachusetts licensed applicators will perform the selective herbicide treatments under the direct on site supervision of a certified applicator as required by Chapter 132B.

NSTAR's herbicide program is a selective program scheduled to sustain acceptable vegetation control at minimal application rates. Using backpack sprayers, very small amounts of herbicide are applied directly to the leaves, stumps or bark of the target vegetation. The average per acre rate of herbicide mix for NSTAR's foliar program is under 5 gallons per acre and the actual amount of applied active ingredient is in the pints per acre range. This per acre application rate will decrease even further as the number of target species decrease over the years, while the time between treatments will increase compared to mechanical only programs.

NSTAR also chooses herbicide formulations that are low in acute toxicity, do not bio-accumulate and, as applied, have a short half-life with low soil mobility (see VMP, Bibliography). Above and beyond the review by the Federal EPA, these herbicides are all carefully reviewed jointly by DAR and the Massachusetts Department of Environmental Protection for use in "limited spray" sensitive areas (including Zone IIs). NSTAR takes this one step further and only uses sensitive area approved herbicides on their entire right-of-way system.

A. Methods:

NSTAR and contract personnel will utilize the most appropriate technique for the vegetation species, height, density, site and mandated restrictions. These methods as described in detail in NSTAR's 5-year VMP are briefly reviewed below:

Low Volume Foliage Techniques utilize hand-operated pumps or motorized, backpack sprayers. The motorized, backpack sprayer produces an air current that delivers small amounts of herbicide mixture from a portable spray tank to the target vegetation. The low-pressure hand-pump sprayer uses a column of water. In both cases, the amount of herbicide solution applied only dampens or lightly wets the target vegetation.

Low-Volume Stem Basal: the selective application of herbicides to the lower 6"-8" of the plant stem. The herbicide concentration is applied with low-pressure, backpack sprayers with special wand attachments and positive shut-off nozzle tips with small orifices.

Cut Stump Surface Treatment (CST): the application of an herbicide mixture to the cut surface of a stump immediately following or during a cutting operation. Application equipment includes low-volume, backpack, hand-pump sprayers; hand held squirt bottles; paintbrushes, or sponge applicators.

B. Guidelines:

1. All Sensitive Area restrictions will be followed
2. Foliar and Basal treatments are used within the cleared width of the ROW for tree and shrub target species below 12 feet in height

3. CST treatments are used in conjunction with hand-cutting and in situations including but not limited to: trees and shrubs that cannot be foliar treated, at road buffers, and around structures such as poles and gates
4. Only mechanical treatment methods will be used in *no spray* Sensitive Areas, including but not limited to hand cutting, trimming and mowing.

C. Treatment of Wetlands

Herbicide applications in wetlands will be performed in accordance with 333 CMR 11.04 (4)(c)(2) relative to ROW management. Targets will be selectively treated with herbicides on the DAR's *Sensitive Area Material List* and will not be applied within ten (10) feet of standing or flowing water.

D. Treatment of State-Listed Priority Habitats

All vegetation management activities will be completed in compliance with the Massachusetts Endangered Species Act (MESA; MGL c. 131 A) and its regulations, 321 CMR 10.00.

VII. PROPOSED HERBICIDES, CARRIERS, ADJUVANTS AND RATES

Only the Commonwealth of Massachusetts recommended herbicides listed below for use in Sensitive Areas—pursuant to 333 CMR 11.04 (1)(d)—will be used on the entire length and cleared width of NSTAR's ROW corridor, in compliance with all labeled directions.

Table V. Tank Mix for Low Volume Foliage Applications:

Herbicides & Adjuvants	Active Ingredient	EPA Registration Number(s)	Mix Concentration (per 100 gals. water)	Estimated Application Rate Per Acre
Rodeo	Glyphosate	62719-324	3-5%	16-128 oz.
Krenite S	Fosamine Ammonium	42750-247	6-10%	32-128 oz.
Escort XP	Metsulfuron-Methyl	352-439	2-4 oz.	0.125-0.8 oz.
Arsenal, Arsenal Powerline or Polaris*	Imazapyr	241-346, 241-431 or 228-534	0.125%-0.5%	2-8 oz.
Induce, Clean Cut, or Aqua Fac or equivalent surfactant†	n.a.‡	n.a.	0.125%-1%	1-16 oz.
Point Blank, Stay Put Plus or equivalent drift retardant	n.a.	n.a.	0.125%-0.5%	1-2 oz.
Carrier: Water	n.a.	n.a.	n.a.	n.a.

* Imazapyr will not be applied on the same right-of-way in two consecutive years.

† Equivalent surfactants, drift retardants and basal oils will be used if those listed are no longer available or more effective alternatives become available.

‡ n.a.—not applicable

Table VI: Tank Mix for Poison Ivy, Vines, Noxious and Invasive Species

Herbicides & Adjuvants	Active Ingredient	EPA Registration Number(s)	Mix Concentration (per 100 gals. water)
Rodeo	Glyphosate	62719-324	2-5%
Garlon 4 Ultra	Triclopyr	62719-527	2-4%
Escort XP	Metsulfuron-Methyl	352-439	1.25-4 oz
Induce, Clean Cut, or equivalent surfactant	not applicable	n.a.	0.125%-1%
Point Blank, Stay Put Plus or equivalent drift retardant	n.a.	n.a.	4-16 oz.
Carrier: Water	n.a.	n.a.	n.a.

Table VII. Tank Mixes for Cut Surface Treatment (CST) Applications:

Herbicides & Adjuvants	Active Ingredient	EPA Registration Number(s)	Mix Concentration (per 100 gals. water)	Estimated Application Rate Per Acre
Rodeo	Glyphosate	62719-324	40% to 50%	Per density of target stems
Arsenal, Arsenal Powerline or Polaris	Imazapyr	241-346, 241-431 or 241-346-228	3%-5% (mixed with Rodeo)	Per density of target stems
Carriers: Water or Windshield Washing Fluid	n.a.	n.a.	n.a.	n.a.

Table VIII. Tank Mixes for Low-Volume Basal Applications:

Herbicides & Adjuvants	Active Ingredient	EPA Registration Number(s)	Mix Concentration (per 100 gals. water)	Estimated Application Rate Per Acre
Garlon 4 Ultra	Triclopyr	62719-527	20%-30%	0.5-3 pints
Carrier: Arborchem's low odor basal oil or equivalent	n.a.	n.a.	70%-80%	24-144 oz.

VIII. ALTERNATIVE MECHANICAL CONTROL TECHNIQUES

Areas not treated or prohibited from herbicide use, such as protective buffers for Sensitive Areas, will be maintained mechanically according to the specifications in the VMP. The following is a brief review of these methods:

Hand Cutting: the use of chain and brush saws to remove the stem and/or branches from the plant's root system; can be combined with CST except in no-chemical restricted areas.

Mowing: the cutting, severing or shattering of vegetation by large rotary or flail mowers.

Side Pruning: side pruning or removal of encroaching tops and/or branches of trees growing on or near the ROW's and access roads.

IX. COMPANIES THAT MAY PERFORM THE HERBICIDE TREATMENT

Vegetation Control Service, Inc.
2342 Main Street
Athol, MA 01331
(978) 249-5348

Lewis Tree Service, Inc
300 Lucius Gordon Drive
West Henrietta, NY 14586
(585) 436-3208

Lucas Tree
636 Riverside St.
Portland, ME 04104
(888) 845-7870

X. INDIVIDUAL RESPONSIBLE FOR SUPERVISING THE YOP

William Hayes, Senior Transmission Arborist
NSTAR Electric & Gas Corporation
Plng, Schdlg & Cntrct Svcs Dept
One NSTAR Way, SE-370
Westwood, MA 02090-9230
781-441-3932 (office)

XI. HERBICIDE FACT SHEETS

Herbicide Fact Sheets prepared and provided by the DAR, explain technical information relative to the herbicide concentrates proposed for use during the 2014 treatment cycle. These are included in Appendix III, along with the manufacturer's labels in Appendix IV.

XII. PROCEDURES FOR HANDLING, MIXING AND LOADING HERBICIDE CONCENTRATES

All herbicides will be handled, mixed and applied strictly according to *Label Instructions* and in compliance with all applicable federal and state laws and regulations. If possible, all herbicide mixing should be done at the contractor's facilities and extreme care shall be exercised during all mixing, handling and loading in order to prevent careless spills or splashes. No herbicide concentrates will be mixed, handled or loaded on a ROW within one hundred (100) feet of a Sensitive Area.

XIII. EMERGENCY RESOURCES

NSTAR contracts with independent, professional, certified herbicide applicators that are responsible for the containment, clean up and reporting of chemical spills or accidents. The following is a guide to the information sources that, according to various regulations, must be available to the treatment crew in the event of a chemical spill or emergency situation:

- A. Technical Reference Materials:
 - a. Product Label
 - b. Product Material Safety Data Sheet (MSDS)
 - c. Product Fact Sheet, if available

B. Table IX. Herbicide Manufacturers:

MANUFACTURER	TELEPHONE NUMBER	SPECIAL INSTRUCTIONS
Albaugh Inc.	800-247-8013	
BASF Corporation	800-832-4357	
Dow Agro Sciences	800-992-5994	
E.I. du Pont de Nemours and Company	800-441-3637	Medical Emergencies
Monsanto	314-694-4000	
Nufarm	877-325-1840	Medical Emergencies

C. Table X. State Agencies:

STATE AGENCY	TELEPHONE NUMBER	SPECIAL INSTRUCTIONS
Massachusetts Pesticide Bureau	(617) 626-1700	A.S.A.P. (within 48 hours)
Massachusetts Department of Environmental Protection, Emergency Response Section	Main Office: (888) 304-1133	For emergencies involving reportable quantities of hazardous materials; required info: City/town, street address, site name (if applicable), material
	Southeast Region: (508) 946-2700	
	Northeast Region: (978) 694-3200	
	Central Region: (508) 792-7650	
Massachusetts Dept of Public Health, Bureau of Env. Health Assessment Toxicology Program	(617) 624-5757	
Massachusetts Poison Information Centers	(800) 682-9211	For medical emergencies involving suspected or known pesticide poisoning symptoms

D. Table XI. Emergency Services:

EMERGENCY SERVICE	TELEPHONE NUMBER	SPECIAL INSTRUCTIONS
Massachusetts State Police, Central Office	617-566-4500 or 911	
Local Fire / Police Dept.	911	
ChemTrec	800-424-9300	
Clean Harbors	800-OIL-TANK	
Pesticide Hotline	800-858-7378	PST: 6:30 am – 4:30 pm, Web: www.NPIC.orst.edu

E. NSTAR's contact in the case of a spill or accident is:

System Control
 NSTAR Electric & Gas Corporation
 One NSTAR Way
 Westwood, MA 02090-9230
 (617)-541-7858

F. Table XII. Local Emergency Numbers:

Emergencies Services for All Municipalities: 911

Town	Board of Health	Town/City Hall	Town	Board of Health	Town/City Hall
Acushnet	508-998-0275	508-998-0200	Middleborough	508-946-2408	508-946-2405
Ashland	508-881-0100 x681	508-881-0100 x611	Natick	508-647-6460	508-647-6400
Bourne	508-862-4644	508-862-4610	New Bedford	508-991-6199	508-979-1400
Bridgewater	508-697-0903	508-697-0919	Oak Bluffs	508-693-3554 x116	508-693-3554
Burlington	781-270-1955	781-270-1600	Pembroke	781-293-2718	781-293-3844
Canton	781-821-5021	781-821-5000	Plymouth	508-747-1620 x118	508-747-1620 x106
Carver	508-866-3420	508-866-3400	Plympton	781-585-7000	781-585-2700
Chatham	508-945-5165	508-945-5100	Rochester	508-763-3871 x15	508-763-3871 x10
Dartmouth	508-910-1804	508-910-1813	Sandwich	508-888-4200	508-888-5144
Dennis	508-760-6158	508-394-8300	Sharon	781-784-1510	781-784-1515
Dover	508-785-0032 x232	508-785-0032	Sherborn	508-651-7852	508-651-7850
Duxbury	781-934-1105	781-934-1100	Sudbury	978-443-2209x1379	978-639-3381
East Bridgewater	508-378-1612	508-378-1601	Tisbury	508-696-4290	508-696-4200
Edgartown	508-627-6120	508-627-6110	Truro	508-349-7004 x32	508-349-5505
Fairhaven	508-979-4022	508-979-4023	Walpole	508-660-7320	508-660-7300
Falmouth	508-495-7485	508-548-7611	Waltham	781-314-3305	781-314-3100
Framingham	508-532-5470	508-532-5400	Wareham	508-291-3100 x3197	508-291-3100
Freetown	508-644-2202	508-644-2203	Wayland	508-358-3617	508-358-7755
Hanson	781-293-3138 x122	781-293-2131 x100	Wellfleet	508-349-0308	508-349-0300
Harwich	508-430-7509	508-430-7513	Weston	781-586-5030	781-586-5020
Hopkinton	508-497-9725	508-497-9700	Westwood	781-320-1027	781-326-6450
Kingston	781-585-0503	781-585-0500	Whitman	781-618-9755	781-618-9701
Marion	508-748-3530	508-748-3500	Wilmington	978-658-4298	978-658-3311
Marshfield	781-834-5558	781-834-5563	Woburn	781-932-4407	781-932-4400
Mattapoisett	508-758-4100 x8	508-758-4100	Worcester	508-799-8531	508-929-1300
Medfield	508-906-3006	508-906-3010	Yarmouth	508-398-2231 x1241	508-398-2231