GREAT RIVER HYDRO, LLC
MASSACHUSETTS
VEGETATION MANAGEMENT PLAN
2026 to 2030

Submitted by:
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Prepared By:
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Section 1: INTRODUCTION

To remain in compliance with all applicable federal and state regulations, Great River Hydro, LLC (hereafter Great River Hydro) submits this five-year Vegetation Management Plan (VMP) as required by the Commonwealth of Massachusetts' Right-of-Way Vegetation Management Regulation, 333 CMR 11.00. This is the sixth VMP submitted for these sites since 2001 (after they were sold by New England Electric).

Currently Great River Hydro's Massachusetts' Right-of-way (ROW) system consists of water power generation canals and their related structures located in Buckland, Florida and Monroe (See Appendix I). The Federal Energy Regulatory Commission (FERC) requires Great River Hydro to maintain the appropriate vegetation conditions that enable visual inspections of its generation structures including earthen and stone rip-rap embankments, underground water conduits and related access roads.

Great River Hydro treats these sites every three years to encourage the establishment of desirable ecological communities of low growing compatible vegetation while eliminating incompatible vegetation that interferes with the safe operation of their ROW system. It encompasses an Integrated Vegetation Management (IVM) program (a combination of mechanical, chemical and biological methods), that depends upon periodic review and revision with the development of regulations and new methods that are proven to be practical, environmentally responsible and cost effective. These ROWs have been treated on this three year cycle for decades, which has minimized the use of all IVM methods including the amount of applied herbicides.

Great River Hydro also relies on contractors who demonstrate the ability to identify plant species and who understand IVM techniques and policies. These professional field personnel must comply with the specifications set forth in this VMP and with all applicable state and federal regulations. Great River Hydro representative(s) will also monitor them.

Illustrations 1 & 2: Views of the Canals and Associated Structures

Section 2: GOAL AND OBJECTIVES

Great River Hydro's VMP outlines and explains the standards of vegetation control expected from the implementation of an IVM program within the parameters of 333 CMR 11.00. It provides guidance for both Great River Hydro and contract field personnel regarding appropriate vegetation control methodologies and philosophies. It also serves as an educational and communication link for state and municipal officials, and the public-at-large.

GOAL

- To continue an established IVM program that is legal, safe, environmentally sound, economically feasible and which has the flexibility to accommodate unique situations including the need to use more appropriate techniques as they arise in accordance with regulations and scientific advances.

OBJECTIVES

- To maintain safe, reliable hydro-electric facilities;
- To control incompatible vegetation that impedes the monitoring and inspection of infrastructure;
- To control incompatible vegetation that interferes with access to the ROW system for maintenance or emergencies;
- To encourage the establishment of wildlife habitat that do not interfere with the primary function of the hydro-electric structures;
- To manage and contain the spread of invasive plant species,
- To promote positive public relations with abutting property owners, state and municipal officials, contractors, and the public.

Section 3: IDENTIFICATION OF TARGET VEGETATION

All vegetation must be removed that grows tall or thick enough to interfere with the safe, efficient and legal operation of the ROW system and related structures/facilities. The vegetation acceptable at each structure depends upon its function. Therefore, while vegetation free conditions are necessary along the stone rip rap of the power generation canals, grasses and herbaceous growth are encouraged—and necessary for stabilization—on the earthen dike walls along with some very low growing woody vegetation.

Dense, woody vegetation impedes the ability to inspect the conditions of the canal banks and can interfere with both foot and vehicle access. Tall growing woody vegetation can also compromise the integrity of earthen dike structures as wind and storm blown trees can uproot and dislodge large volumes of earth and weaken these water impounding structures. Tree species are, therefore, the primary target vegetation, followed by woody shrubs, vines, and invasive and poisonous plants.

These species include, but are not limited to:

- Tree species such as Aspen, Beech, Birch, Cherry, Maples, Oak and Pines
- Shrubs such as Mountain Laurel, Speckled Alder, Staghorn Sumac, Maple-Leaf Viburnum, Blackberry, and Witch Hazel
- Woody vines such as Bittersweet, Wild Grapes and Virginia Creeper
- Noxious and Invasive Plants such as Poison Ivy, Multiflora Rose, Autumn Olive, Barberry, Honeysuckle, and Japanese Knotweed.

Except where vegetation free conditions are required, non-target vegetation includes grasses, herbaceous growth and very low-growing woody vegetation. These early successional ecological communities promote a wildlife friendly environment that competes with incompatible target vegetation.

Where applicable, desirable low growing vegetation includes, but is not limited to:

- Grasses
- Herbaceous plants such as ferns and wildflowers
- Very low growing woody plants such as Huckleberry, Low Bush Blueberry and Sweet Fern.

INVASIVE PLANT SPECIES

Invasive plant species are of concern along ROW corridors where they can spread rapidly and move into adjacent landscapes. According to the Massachusetts Invasive Plant Advisory Group (MIPAG), invasive plant species are "…non-native species that have spread into native or minimally managed plant systems in Massachusetts, causing economic or environmental harm by developing self-sustaining populations and becoming dominant and/or disruptive to those systems." Vegetation management contractors have the resources to properly identify and make a positive impact on containing, controlling and slowing the spread of invasive plant species when they first appear and in the early stages before they become established. In an effort to promote responsible land stewardship, Great River Hydro also works in concert with federal, state, public and private land use agencies in an effort to curtail the spread of invasive species.

IDENTIFICATION METHODS

To ensure the accurate identification of incompatible and compatible vegetation, all vegetation management contractors are required to supply professional personnel familiar with the vegetation typically found growing on these sites. They must also have a working knowledge of invasive plant species and the resources available to identify them.

Section 4: INTENDED METHODS OF VEGETATION MANAGEMENT AND RATIONALE FOR USE

Great River Hydro's VMP reflects Great River Hydro's continued intent to prevent any unreasonable adverse effects to the environment and to the safety and health of non-target organisms while supporting Great River Hydro's primary mission to provide hydro-electric generation on a regular and dependable basis.

The current industry definition of IVM in the *ANSI A300 (Part 7), Tree, Shrub, and Other Woody Plant Management –Standard Practices (Integrated Vegetation Management)* available in January 2019 is "A system of managing plant communities in which compatible and incompatible vegetation are identified, action thresholds are considered, treatment methods are evaluated, and selected treatments are implemented to achieve specific objectives."[1]

Following these standards, Great River Hydro is well established IVM program combines mechanical (including manual), chemical and biological (previously natural) methods that support the ability of early successional ecological communities to regulate themselves. The resulting biological control of incompatible vegetation is achieved through inhibiting the germination and growth of tree seedlings through competition (for light, moisture, nutrients), depredation of wildlife (browsing/feeding) and other ecosystem processes.[2]

This comprehensive IVM program takes into account geologic, geographic, climactic, environmental and regulatory factors in determining the best approach to controlling vegetation. Soil type, moisture levels, elevation and land use patterns determine species composition, density and growth rate. Taking the aforementioned factors into consideration, along with the long history of treating these sites using IVM, selecting the best control method depends on the time of year, and the type and location of special sites including sensitive areas in relation to the treated hydro-electric structures.

The strategy outlined, therefore, will advance the consistent and safe operation of these ROWs while all vegetation management activities are carried out in strict compliance with the regulations of authorized federal and state agencies. No herbicide applications will be permitted on the ROWs without an approved VMP, Yearly Operational Plans (YOP), completed public notification and submittal of the YOP/VMP to the Natural Heritage and Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries and Wildlife for treatments in State-listed Species Habitat, the Estimated Habitats of Rare Wildlife and the Priority Habitat for State-listed Species under 321 CMR 10.00: Massachusetts Endangered Species Act.

When implemented under the direct supervision of trained, experienced IVM professionals, the direct management techniques of mechanical and chemical methods encourage the development of biological methods. All three components are dependent upon the others and the conditions at the specific sites being treated in a continuous cycle that employs the unique advantages of each. When used in concert, they control incompatible vegetation while simultaneously encouraging the development of desirable communities of compatible plant species (where applicable).

With the exception of most conifer species, cut woody vegetation resprouts creating a stem density greater than the original site conditions. Subsequent cutting cycles further increase the dense areas of woody vegetation escalating the need for management. This dense woody vegetation competes with and dominates low growing, desirable vegetation.

Systemic herbicides prevent resprouts through effective root system control. The use of herbicides under this IVM program has reduced the frequency and intensity of subsequent treatment cycles. Not all areas are treated with herbicides. Easement and sensitive area restrictions control the areas of a ROW that can be managed with herbicides. Mechanical methods, therefore, are the only options for such sites despite the disadvantages of resprouts. At other sites, mechanical and chemical methods are also used effectively in concert. For example, cut stump treatments (described below) are used to control resprouts after hand cutting.

Except in areas requiring vegetation-free conditions—such as stone rip rap—biological methods complete the foundation of a well-constructed IVM program. As incompatible plants are controlled or eliminated, low-growing compatible plants fill the resulting void to take

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[1] *A300 (Part 7), Tree, Shrub, and Other Woody Plant Management –Standard Practices (Integrated Vegetation Management)*

[2] Yahner. "Wildlife Response to More than 50 years of Vegetation Maintenance on a Pennsylvania U.S., Right-of-Way": 123.

advantage of the available sunlight, moisture and nutrients. This results in primarily herbaceous plant communities, such as ferns, grasses and wild flowers, that compete with the germination and survival of incompatible species, such as woody vines and trees.

As is currently the case at Great River Hydro's hydro-electric structures, after multiple treatment cycles, these low-growing plant communities have decreased the dependence on chemical and mechanical methods. In the 1970's, managing the vegetation on the canal banks took six men two weeks to treat. Now, continuing the use of primarily selective foliar methods, the treatment schedule is usually completed over three days every third year, and the amount of herbicide utilized is at minimal amounts due to the reduced amount of incompatible plants.

The stability of the low-growing plant communities is augmented because they are naturally occurring plant species adapted to their specific environment. The plants have a much better opportunity for survival, especially during adverse growing conditions, as compared to planted non-native vegetation due to incompatible site-species relationship.

With the expansion of invasive plant species, herbicides have become an even more important tool in the support of native early ecological successional communities. Mechanical methods are an important tool in the control of invasive plant species, however, under most situations herbicides, or a combination of mechanical and herbicide applications, are proven to be the most effective means to control these aggressive plant species.

INTENDED MECHANICAL CONTROL METHODS

1. **Hand Cutting:** cutting target species using hand saws, chain saws and brush saws. Target species are cut as close to the ground as practical: the ideal stump height is three inches or less (when possible). Hand cutting may be used at any time of year.

   Hand cutting is used to remove hazard trees and to protect environmentally sensitive sites including sites where herbicide use is prohibited by regulation; to remove incompatible vegetation greater than twelve feet tall, and where terrain, target species size or sensitivity renders mowing impossible or impractical.

2. **Mowing:** the mechanical cutting of target vegetation using machines including push mowers, riding-mowers, offset flail mowers, and brush mowers. Equipment selection is based on site, terrain, and target vegetation size.

   Mowing may be the preferred method, especially on sites where extremely tall and dense target vegetation makes hand cutting inefficient and expensive; on non-restricted sites, it may be followed by an herbicide treatment to the resprouts, and in cases of extensive invasive plant species infestations.

3. **Selective Pruning**: the mechanical pruning of the tops or encroaching limbs of tall vegetation which may cause a hazard or hamper access. The equipment includes aerial lifts mounted on trucks or tractors. If terrain or obstructions prevent equipment access, selective pruning may also be achieved using climbing crews. Selective pruning may be done at any time of the year and may provide a viable alternative to the removal of vegetation. All side trimming activities are to be performed in accordance with proper arboricultural practices and in compliance with all applicable regulations.

   This method is useful in maintaining the edge definition of ROW corridors, protecting structures. and provides for easier inspections during aerial patrols.

INTENDED CHEMICAL (HERBICIDE) CONTROL METHODS

All herbicide applications are completed in full accordance with the manufacturer's label, state and local regulations, and performed by properly licensed applicators.

1. **Foliar Treatments:** the application of herbicides diluted in water, to the leaves, stems, needles or blades of target vegetation. The equipment consists of backpack and vehicle mounted sprayers; both use low pressure at the nozzle per 333 CMR 11.02. Foliar applications take place when leaves are fully developed in the spring until early fall and the beginning of leaf abscission—i.e., when leaves begin dropping.
   a. **Hand-held and backpack sprayers:** backpack, hand held canister sprayers or squirt bottles. This technique is excellent for spot treatments, such as localized

Poison Ivy infestations. It is not as effective as other methods on high density target vegetation.

b. **Vehicle mounted sprayers:** truck, tractor and/or ATV mounted equipment that delivers the herbicide solution through nozzles attached to a hose or boom-mounted apparatus. This technique is used along roadways that have good access and where obstructions, terrain or site sensitivity do not exclude the equipment.

2. **Pre-emergent Treatments:** the use of pre-emergent herbicides using the same equipment described in the foliar treatments above. Pre-emergent applications are used where season long vegetation control requires "vegetation-free conditions" such as along curbing, sidewalks, under guiderails/guardrails and on paved traffic islands. This method is used from the early spring to early fall.

3. **Cut Stump Treatment (CST):** the mechanical cutting of target species followed by an herbicide treatment to the phloem and cambium tissue of the stumps. CST treatments prevent re-sprouts, thereby reducing the need to re-treat the same vegetation. The CST mixture is diluted in water, basal oil or a non-freezing agent and is ideally made to freshly cut stumps. Application equipment includes low-volume, backpack or hand-held sprayers, hand held squirt bottles, paintbrushes, or sponge applicators. This method is used where maximum control is desirable; to reduce the visual impact of vegetation management treatments, and/or to reduce the potential of adverse impacts to desirable vegetation because of its selectivity. CST may be used at any time of the year provided snow depths do not prevent cutting the stumps below three inches in height. It is best to avoid during the season of high sap flow, or in moderate to heavy rains. It is not practical in moderate to heavy stem densities.

4. **Low Volume Basal Treatment:** the selective application of an herbicide, diluted in specially formulated oil, to wet the entire lower twelve to eighteen inches of the target plant stems. Using a hand-held or backpack sprayer, the oil enables the herbicide solution to penetrate the bark tissue and translocate within the plant. Low volume basal treatments are highly selective and used when vegetation density is low and in areas where extreme selectivity is necessary. It can be used any time of year except when snow is too deep, in extremely wet weather and/or during spring sap flow.

5. **Plant Growth Regulators/Broadleaf Control (PGR):** the selective application of chemicals to slow down the growth of grasses and control broadleaf plant species. The broadleaf aspect of PGR is used where broadleaf plants are out competing desirable grasses without damaging grass species. It is used in the same period as foliar treatments, using the same equipment.

Final Note: Anti-drift Adjuvants are added to the mix or solution in foliage and pre-emergent applications to help reduce the potential exposure to non-target organisms. They reduce the break-up of sprays into fine droplets which increases selectivity and deposition onto target plants.

Section 5: JUSTIFICATION OF HERBICIDE USE

When used in conjunction, the chemical and mechanical components of an IVM program support the establishment of low-growing ecological communities of early-successional plant species. Chemical methods are, therefore, an integral part of an IVM program and the selective and judicious use of herbicides is critical in the effective management of Great River Hydro's ROWs. At Great River Hydro, the selective use of herbicides over decades has resulted in the stabilization of a minimal amount of herbicide applied each treatment cycle and the ability to treat these structures every three years. As a result, there is no longer a visible reduction in the amount of herbicides applied each cycle because the amount is already exceptionally low.

As discussed above, without chemical methods, the stumps of cut vegetation remain alive allowing adventitious buds to produce resprouts. Nourished by established root systems, these aggressive multiple stems resprouts are capable of growing several feet per year. Repeated cycles of mechanical only controls, therefore, increase the density of target stems and intensify the labor necessary for acceptable control.

When relying on mechanical methods alone, dense areas of target vegetation become costly and dangerous to hand-cut. When the landscape allows, these areas are best controlled by mowing. Large mowing equipment, however, has its own negative impact on non-target plant communities whose establishment is crucial to developing successful biological methods. The scarification of the soil surface creates a potential seedbed for fast growing, pioneering target species such as poplars, cherries, birches and invasive plant species. This can increase the frequency of the maintenance cycle and destroy the dominance of early successional ecological communities. Similarly, sensitive areas, such as wetlands and residential areas may be adversely impacted when crossed by mechanical maintenance equipment.

To support its IVM program, therefore, Great River Hydro uses herbicides because they:

1. are specifically designed to control resprouts while minimizing the amount of manpower and equipment necessary and their repeated impact on the environment;
2. increase the length of time between treatment cycles by reducing the recurrence and density of target vegetation;
3. are one of the most efficient, practical method(s) of maintaining noxious vegetation including poisonous plants and invasive plant species;
4. can be used on extremely steep, rocky terrain where mechanical methods are difficult and dangerous;
5. are the only method that achieves season-long vegetation-free conditions (where appropriate and necessary);
6. promote more efficient and generally safer working conditions for inspection and maintenance crews, including foot and vehicle access;
7. offer varied degrees of selectivity and favor—or release—certain types of plants; broadleaf vegetation can be controlled with little or no impact to grasses, and all herbicides can be applied selectively by utilizing the appropriate application technique;
8. are effective year round by choosing the appropriate herbicide and application technique;
9. are generally cost effective and less expensive than mechanical methods, especially for long-term vegetation management;
10. leave compatible early successional ecological communities intact because of the ability to select incompatible vegetation;
11. promote wildlife habitat by encouraging plant species diversity;[3]
12. are much less destructive than mowing to nesting sites and the vegetation cover necessary for food and concealment by wildlife, when used selectively;

[3]Richard H. Yahner "State Game Lands 33 Research and Demonstration Project—57 years of Continuous Study on the Shawville to Lewiston 230-kV line of First Energy (Penelec). 2009: 9; Yahner. "2009 Annual Report to Cooperators. Green Lane Research and Demonstration Project: 23 Years of Continuous Study." (2009): 8; Yahner. "Wildlife Response to More than 50 years of Vegetation Maintenance on a Pennsylvania U.S., Right-of-Way." Journal of Arboriculture 30(2) (March 2004).

13. result in lower target species' densities that require less maintenance when applied over a number of years in repeated cycles.

Great River Hydro schedules herbicide treatment cycles on its ROWs on a three year cycle to sustain acceptable vegetation control at minimal application rates without jeopardizing the function of the ROW system. If necessary, due to slower than anticipated vegetative growth, budgetary constraints, or other unforeseen restricting circumstances, Great River Hydro may extend the treatment cycle to four or more years, if conditions warrant, Great River Hydro may from time to time shorten the treatment cycle; for example, in the case of an unexpected invasive plant species infestation, or a heavy seed year for tree species.

Herbicides, particularly when applied selectively by low-volume methods, dry quickly on the plant surface, thereby significantly restricting the greatest potential for dermal exposure. The use of anti-drift adjuvants in all foliage applications, which can be adjusted to accommodate changes in wind velocity, further limits the likelihood of unintentional exposure to non-target organisms.

Applications are also not made in situations when there is a reasonable expectation that herbicides will drift from the target, during measurable precipitation or under circumstances that might unreasonably jeopardize the health and safety of non-target organisms. Herbicides are applied according to the restrictions in 333 CMR 11.04 (see Appendix II).

Section 6: IDENTIFICATION OF SENSITIVE AREAS AND PROPOSED CONTROL STRATEGIES

The definition of sensitive areas regulated by 333 CMR 11.04 is as follows:

> …any areas within Rights-of-Way, including No-Spray and Limited-Spray Areas, in which public health, environmental or agricultural concerns warrant special protection to further minimize risks of unreasonable adverse effects.

Protecting these environmentally sensitive areas is accomplished by defining specific sensitive areas and establishing treatment restrictions within these borders based on the relative sensitivity of each site and the requirement to minimize any unreasonable adverse impacts within that area.

Sensitive areas regulated by 333 CMR 11.00 include the following:

Water Supplies:

- Zone I's
- Zone II's
- Private Wells
- Class A Surface Water Sources
- Tributaries to a Class A Surface Water Source
- Class B Drinking Water Intakes
- IWPA's(Interim Wellhead Protection Areas)

Surface Waters:

- Wetlands
- Water over Wetlands
- The Mean Annual High-Water Line of a River
- The Outer Boundary of a Riverfront Area
- Certified Vernal Pool

Cultural Sites:

- Agricultural Areas
- Inhabited Areas

Wildlife Areas:

- Certified Vernal Pool Habitat
- Priority Habitat

These sensitive areas consist of no-spray areas in which herbicide use is prohibited, and limited spray areas where herbicide use is permitted under certain conditions. Treatment in the limited spray areas requires the use of herbicides from the *Sensitive Area Materials List*, available at www.mass.gov. Treatment crews will also follow the application restrictions in 333 CMR 11.04, including applications at no more than the minimum labeled herbicide application rate for the control of target species.

TABLE I: CONTROL STRATEGIES FOR SENSITIVE AREAS

Sensitive Area		No-Spray and Limited Spray Areas (feet)	Control Method	Restriction Code
Public Ground Water Supplies		400'	Mechanical Only	None
Primary Recharge Area		Designated buffer zone or 1/2 mile radius	Mechanical, Recommended Herbicides*	24 months
Public Surface Water Supplies (Class A & Class B)		100'	Mechanical Only	None
		100'-400'	Recommended Herbicides	24 months
Tributary to Class A Water Source, within 400' upstream of water source		100'	Mechanical Only	None
		100'-400'	Recommended Herbicides	24 months
Tributary to Class A Water Source, greater than 400' upstream of water source		10'	Mechanical Only	None
		10'-200'	Recommended Herbicides	24 months
Class B Drinking Water Intake, within 400' upstream of intake		100'	Mechanical Only	None
		100'-200'	Recommended Herbicides	24 months
Private Drinking Water Supplies		50'	Mechanical Only	None
		50'-100'	Recommended Herbicides	24 months
Surface Waters		10'	Mechanical Only	None
		10'-100'	Recommended Herbicides	12 months
Rivers		10' from mean annual high water line	Mechanical Only	None
		10'-200'	Recommended Herbicides	12 months
Wetlands		100' (treatment in wetlands permitted up to 10' of standing water)*+	Low-pressure Foliar, CST, Basal Recommended Herbicides	12 months
Inhabited Areas		100'	Recommended Herbicides	12 months
Agricultural Area (Crops, Fruits, Pastures)		100'	Recommended Herbicides	12 months
Certified Vernal Pools		10'	Mechanical Only when water is present	None
Certified Vernal Pool Habitat		10'-outer boundary of habitat	No treatment without written approval per 321 CMR 10.14(12)	
Priority Habitat		No treatment without written approval per 321 CMR 10.14(12)		

Restrictions "24 Months": A minimum of twenty-four months shall elapse between applications
"12 Months": A minimum of twelve months shall elapse between applications
*Massachusetts recommended herbicides for sensitive sites
+Per the *DFA Decision Concerning the Wetlands Impact Study* for utilities per 333 CMR 11.04(4)(c)(2).

IDENTIFICATION OF SENSITIVE AREAS

Two simple descriptions guide the complex identification of the sensitive areas defined in 333 CMR 11.04: *Readily identifiable in the field* and *not readily identifiable in the field.* Readily identifiable in the field areas will be treated, identified and where appropriate, marked according to all applicable restrictions listed in 333 CMR 11.00. Not readily identifiable in the field areas will likewise be marked and treated when appropriate, but they are identified by the use of data marked on maps and collected in the YOP and notification processes before the time of treatment.

1. Sensitive areas usually identifiable in the field, include but are not limited to surface water, some private and public water supplies, inhabited agricultural areas and wetlands when using sensitive area approved herbicides
2. Sensitive areas not usually identifiable in the field, including, but are not limited to designated public surface water supplies, public ground water supplies, some private drinking supplies, certified vernal pools, Priority Habitat of State-listed Species and wetlands when not using sensitive area approved herbicides.

As appropriate, therefore, sensitive areas will be identified by either Great River Hydro personnel, trained and experienced vegetation management contractor personnel, and/or by individuals trained in the identification of sensitive areas.

The following resources help in the identification of sensitive areas:

Town maps, records and institutional knowledge;

- Massachusetts Department of Environmental Protection water supply maps available through MassGIS (http://www.mass.gov/mgis/);
- Water Department, Massachusetts Department of Agriculture (MDAR), and Athol Board of Health information and identified private wells along the ROWs;
- Correspondence, meetings and input—from the chief elected official, board of health, conservation commission, public water suppliers and the public—within the forty-five- day YOP and twenty-one day municipal right-of-way notification letter review and comment periods and the 48 hour newspaper notification (under 333 CMR 11.06 & 11.07 and Chapter 85 of the Acts of 2000);
- An individual who verifies, identifies and, where appropriate, marks sensitive areas and any additional areas that may require special precautions;
- USGS topographical maps;
- Information from MassGIS;
- When necessary, confidential information from the Natural Heritage Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries and Wildlife:
- A copy of the YOP and VMP.

The YOPs will contain maps with the most current data available at the time of printing. The maps are a resource and a tool for both the public and the applicators. Maps contain the data needed to identify, mark and treat sensitive areas appropriately.

Sensitive areas are located on the maps using a combination of the base USGS topographic maps and the most current data available through MassGIS such as public water supplies and certified vernal pools, along with municipal and private data for items such as private wells. At the time of treatment, additional sensitive area information that is collected through the review and notification processes (333 CMR 11.06-11.07) will be added to the information utilized by the applicators.

Sensitive areas will be identified and marked in the field by trained and experienced town and contractor staff members.

CONTROL STRATEGIES FOR SENSITIVE AREAS

Mandated sensitive areas will be treated following the restrictions in applicable state and federal regulations.

Wetlands

Pursuant to 333 CMR 11.04 (4) (c) (2), based upon the results of two ROW wetland impact studies, MDAR in consultation with the Department of Environmental Protection and the VMP Advisory Panel, made a determination for listed utilities, that herbicides, under the guidance of an IVM program and other conditions as set forth in the determination, have less impact on wetlands than mechanical only techniques. Therefore, in accordance with the conditions of the Department's determination, Great River Hydro will selectively apply herbicides to wetland sites, except within ten feet of standing and flowing water and to conifers which will be cut (see Appendix III).

Public and Private Water Supplies

Appropriate sources and references will be consulted to determine the location of public and private water supplies. Great River Hydro's YOP maps will include all known public and private water supplies at the time of printing using the sources listed above, and the mapping information used by contract treatment crews will be updated as necessary during the treatment cycle.

To aid in the public and private water supply identification process, under 333 CMR 11.01(3), Great River Hydro requests that during the notification processes under 333 CMR 11.06-11.07 and during the treatment cycle, that public and municipal agencies share information on new or unidentified public and private water supplies.

Identified private drinking supplies within one hundred feet of a ROW are included in our permanent records and maps, and landowners are encouraged to post signs on the edge of the ROW to help identify private water supplies (the no-spray treatment area is fifty feet from a private well).

A point person will patrol the ROW in advance of herbicide applications to verify sensitive areas and buffers are appropriately measured, flagged and recorded on pipeline alignment sheets for permanent record.

Massachusetts Endangered Species Act

Great River Hydro recognizes the importance of the Massachusetts Endangered Species Act, M.G.L.C. 131 A, and its significance to ROW vegetation management. Great River Hydro will comply with all applicable portions of this Act and the regulations promulgated thereunder. Great River Hydro will also follow the rules and prohibitions directed at human activities which Take Species or alter their Significant Habitat.

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 condition:

> 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 this exemption, Great River Hydro will submit this VMP and its YOPs to the NHESP.

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 Great River Hydro under strict confidentiality agreements.[4] Using this data and best management practices, Great River Hydro 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 pertinent Priority Habitats in the field, Great River Hydro 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.

[4] A map layer of Priority Habitat is available to the general public at MassGIS, but it is neither specific to the areas of concern for herbicide applications nor does it have detailed data on the species of concern; the exact location and details of their habitat is kept confidential for their protection.

Section 7: OPERATIONAL GUIDELINES FOR APPLICATORS RELATIVE TO HERBICIDE USE

Great River Hydro sets forth the following set of operational guidelines for their vegetation management programs:

1. Great River Hydro relies on independent contractors for vegetation management applications and requires, in a contractual agreement, that contractors comply with all applicable federal and state laws and regulations. These include, but are not limited to, applicable OSHA, FIFRA and DOT regulations, 333 CMR 1-15.00 including Rights-of-Way Management, Chapter 132B, Chapter 85 of the Acts of 2000 (see Appendix IV) and 321 CMR 10.00 as managed by NHESP.
2. Both the Contractor and Great River Hydro are responsible to ensure that vegetation management activities are conducted in a professional, safe, efficient manner, with special attention directed towards minimal environmental impact. The following individual is responsible for monitoring, supervising and coordinating vegetation management programs:

   Timothy Harty, Environmental Specialist
   Great River Hydro Northeast, LLC, Walpole Office
   2 Killeen Street
   North Walpole, NH 03609

3. The contractor must provide qualified, licensed and certified personnel to apply herbicides. "Qualified" means those personnel who have been trained to recognize and identify incompatible and compatible vegetation and are knowledgeable in the safe and proper use of both mechanical and chemical vegetation management techniques. All personnel applying herbicides in Massachusetts must be licensed in the Commonwealth and must work under the on-site supervision of a certified applicator.
4. All contract personnel will follow all manufacturers' label instructions regarding Personal Protective Equipment (PPE).
5. Vegetation management crews will exercise care to ensure that low-growing compatible vegetation and other non-target organisms are not unreasonably affected by the application of herbicides.
6. Herbicides will only be applied in a safe and judicious manner.
7. Herbicides will be handled and applied only in accordance with the manufacturers' labeled instructions.
8. Contractors will strictly adhere to all mandated safety precautions directed towards the public, the applicator and the environment.
9. Applicators will at all times exercise good judgment and common-sense during herbicide applications and will immediately cease operations if adverse conditions or other circumstances warrant.
10. Herbicides will NOT be applied during the following adverse weather conditions:
    a. During high wind velocity, per 333 CMR 11.03
    b. Foliar applications during periods of dense fog, or moderate to heavy rainfall
    c. Foliar applications of volatile herbicides during periods of high temperatures (90 plus degrees Fahrenheit) and low humidity
    d. CST or Basal application when deep snow (i.e., 6" plus or ice frozen on stem or ground to stump) prevents adequate coverage of target plants to facilitate acceptable control
    e. Basal applications when the stems are excessively wet from moisture (i.e., dew, fog, rain).
9. All conifers over six feet tall will be controlled by cutting. Where appropriate, all pitch-pine stumps will be treated with an herbicide to prevent resprouting.
10. The contractors' foreman or senior crew member, must complete daily vegetation management reports that include:
    a. Date, name and address of vegetation management contractor(s)
    b. Identification of site or work area

c. List of crew members

d. Type of equipment and hours used, both mechanical and chemical

e. Method of application and description of target vegetation

f. Amount, concentration, product name of herbicide(s), adjuvants, and dilutants (EPA registration numbers must be on file)

g. Weather conditions (three times over the course of an 8 hour day)

h. Notation of any unusual conditions or incidents, including public inquiries

i. Recording and/or verification of sensitive areas on ROW maps.

12. All equipment used for vegetation management programs must be maintained in good working condition and should be of adequate design and ability to produce the professional quality of work required by Great River Hydro.

13. Instead of dictating the exact equipment models and calibration methods, Great River Hydro recognizes the vast variety and performance of herbicide application equipment and simply requires that the contractor provides the most appropriate application equipment, calibrated to effectively and legally control target vegetation.

14. Vegetation management programs must result in a 95% control of all target species. If less than the desired control is achieved, then the contractor may be held responsible to re-treat or remove the remaining vegetation to Great River Hydro's satisfaction.

15. Land owners will be treated with courtesy and respect at all times. Permission must be obtained for ingress and egress if entering the ROW from private land. Care and common sense shall be exercised when moving vehicles and equipment. All bar-ways and gates shall be immediately closed, and care must be exercised to prevent the rutting or destruction of roadways, fields or any other form of access. No litter of any kind will be left on the ROW or adjoining land.

16. When addressing inquiries or complaints from a concerned person, the foreman of the ROW crew will explain the program in a polite and professional manner. If the individual demands that the vegetation maintenance cease, then the foreman should remove the crew and equipment off the property, and contact Great River Hydro's representative who should be advised of the situation as soon as possible. The crew will not return to that location until given clearance by Great River Hydro.

17. When addressing serious complaints about herbicide usage from a landowner, or other concerned person, notice will be sent to the appropriate authorities at the MDAR regarding the incident/concern.

Section 8: ALTERNATE LAND USE PROVISIONS

At this time, Great River Hydro does not offer any "Landowner Maintenance Agreements" or "Alternative Land Use Programs" as these hydro-electric structures are located on land owned and operated by Great River Hydro.

Section 9: IDENTIFICATION AND QUALIFICATIONS OF INDIVIDUALS DEVELOPING AND SUBMITTING PLAN

The individuals responsible for developing this plan:

Wendy L. Priestley, Ph.D.

Vegetation Control Service, Inc.

2342 Main Street

Athol, Massachusetts, 01331.

tel: (978) 249-5348.

Dr. Priestley's qualifications extend from her education, work experience, and practical experience in the field of herbicide application, crew management and VMP consulting:

She graduated with a B.A. in History from Skidmore College with college and national honors including election to Phi Beta Kappa. She currently holds a Ph.D. in American Civilization from The George Washington University, Washington, DC.

She has worked since 1985 for Vegetation Control Service, Inc., a consulting and service company that provides vegetation management programs for utilities, municipalities, private business and landowners throughout New England. In this capacity, she is a certified pesticide applicator, and her experience includes field, administrative and consulting experience in Integrated Vegetation Management. She has written or co-authored numerous Vegetation Management Plans for utilities both in Massachusetts and throughout New England.

Recently she has participated on the committee developing the current *ANSI A300 (Part 7), Tree, Shrub, and Other Woody Plant Management –Standard Practices (Integrated Vegetation Management)*.

Section 10: REMEDIAL PLAN TO ADDRESS SPILLS AND RELATED ACCIDENTS

CLEAN-UP PROCEDURES:

This section is offered as a general procedural guide for responding to chemical spills or related accidents (related accidents include but are not limited to fire, poisoning and vehicle accidents). The following is, therefore, a guide to the items that will be available to the applicator on site in the event of a chemical spill or emergency.

Although education and attention will constantly be directed at accident and spill prevention, in the event of a spill, immediate action will be taken to contain the spill and protect the spill area (Appendix 5: *Herbicide Spill Check List* shall be available on-site to the applicator). Until it is clean, the spill area will be protected by placing barriers, flagging or crew members at strategic locations, as appropriate. If a fire is involved, care will be taken to avoid breathing fumes from any burning chemicals.

Minor spills will be remedied by soaking up the spill with adsorption clay or other adsorptive material and placed in leak proof containers, removed from the site and disposed of properly. Dry herbicides will be swept up or shoveled up directly into leak proof containers for proper disposal. When applicable, all contaminated soil will be placed in leak proof containers, removed from the site and disposed of properly. When applicable, activated charcoal will be incorporated into the soil at the spill location at a rate of several pounds per thousand square feet to inactivate any herbicide residue. Reportable spills will be reported to the MDAR Pesticide Division.

The Massachusetts Department of Environmental Protection will be contacted when there is a reportable quantity, regardless of major or minor spill status and in accordance with 310 CMR 40.0000, Massachusetts Contingency Plan.

Types of Chemical Spills that Require Action

Chemicals include, but are not limited to the following:

- Herbicides
- Bar and Chain Oil
- Motor and Hydraulic Oil/Fluids
- Diesel Fuel
- Gasoline
- Title 3 Hazmat Materials

Required Spill Response Equipment

As a minimum, the treatment crew will have available on the job site:

- YOP with Emergency Contact List
- PPE (Personal Protective Equipment) per Product Label
- SDS (Safety Data Sheet)
- Product Label
- Product Fact Sheets (when applicable)
- Appropriate adsorbent material
- Shovel
- Broom
- Flagging
- Leak Proof Container
- Heavy-duty Plastic Bags

Personal Contact

In the event of **Personal Contact** with hazardous chemicals:

- Wash affected area with plenty of soap and water
- Change clothing which has absorbed hazardous chemicals
- If necessary, contact a physician
- If necessary, contact the proper emergency services
- If necessary, follow the procedures for Major or Minor Spills as outlined in Appendix 5
- Avoid breathing the fumes of hazardous chemicals

Reference Tables (information subject to change as necessary)

Table 2: Herbicide Manufacturers

MANUFACTURER	TELEPHONE NUMBER	SPECIAL INSTRUCTIONS
Albaugh Inc.	(800) 247-8013	
BASF Corporation	(800) 832-4357	
Envu (formerly Bayer Environmental)	(800) 424-9300	
Corteva Agriscience	(800) 992-5994	
Nufarm	(877) 325-1840	Medical Emergencies
Zhejiang Tide Crop Science Co. Ltd.	(800) 424-9300	Medical Emergencies (Chemtrec)

Table 3: State Agencies

STATE AGENCY	TELEPHONE NUMBER	SPECIAL INSTRUCTIONS
Massachusetts Pesticide Program	(617) 626-1776	A.S.A.P. (within 48 hours)
Massachusetts Department of Environmental Protection, Emergency Response Section	24 Hour Emergency Line: (888) 304-1133 Western Region: (413) 784-1100	For emergencies involving reportable quantities of hazardous materials; required info: City/town, street address, site name (if applicable), material
Massachusetts Dept of Public Health, Bureau of Env.Health Assessment Toxicology Program	(617) 624-5757	
Massachusetts Poison Information Centers	(800) 222-1222	For medical emergencies involving suspected or known pesticide poisoning symptoms

Table 4: Emergency Services:

EMERGENCY SERVICE	TELEPHONE NUMBER	SPECIAL INSTRUCTIONS
Fire/ Police	911	
ChemTrec	(800) 262-8200	
Clean Harbors	(800) 645-8265	
Pesticide Hotline	(800) 858-7378	PST: 8:00 am-12:00 pm, web: www.NPIC.orst.edu

Table 5: Municipal Contacts:

The towns of Buckland and Monroe are part of the Cooperative Public Health Service. The representative for these towns is:

Randy Crochier, (413) 774-3167 Ext. 106

TOWN	TOWN HALL
Florida	(413) 662-2448
Monroe	(413) 424-5272
Buckland	(413) 625-6330

Great River Hydro's contact in the case of a spill or accident:

Timothy Harty
Great River Hydro Hydro Northeast, Inc.
Walpole Office
2 Killeen Street
North Walpole, NH 03609
(603) 445-6813

REPORTABLE SPILLS
(Spills of reportable quantity of material per CMR 310 40.0000)**:**
FOLLOW STEPS 1-11

NON-REPORTABLE SPILLS:
FOLLOW STEPS 1-4, 7-11 as appropriate & contact the Great River Hydro representative.

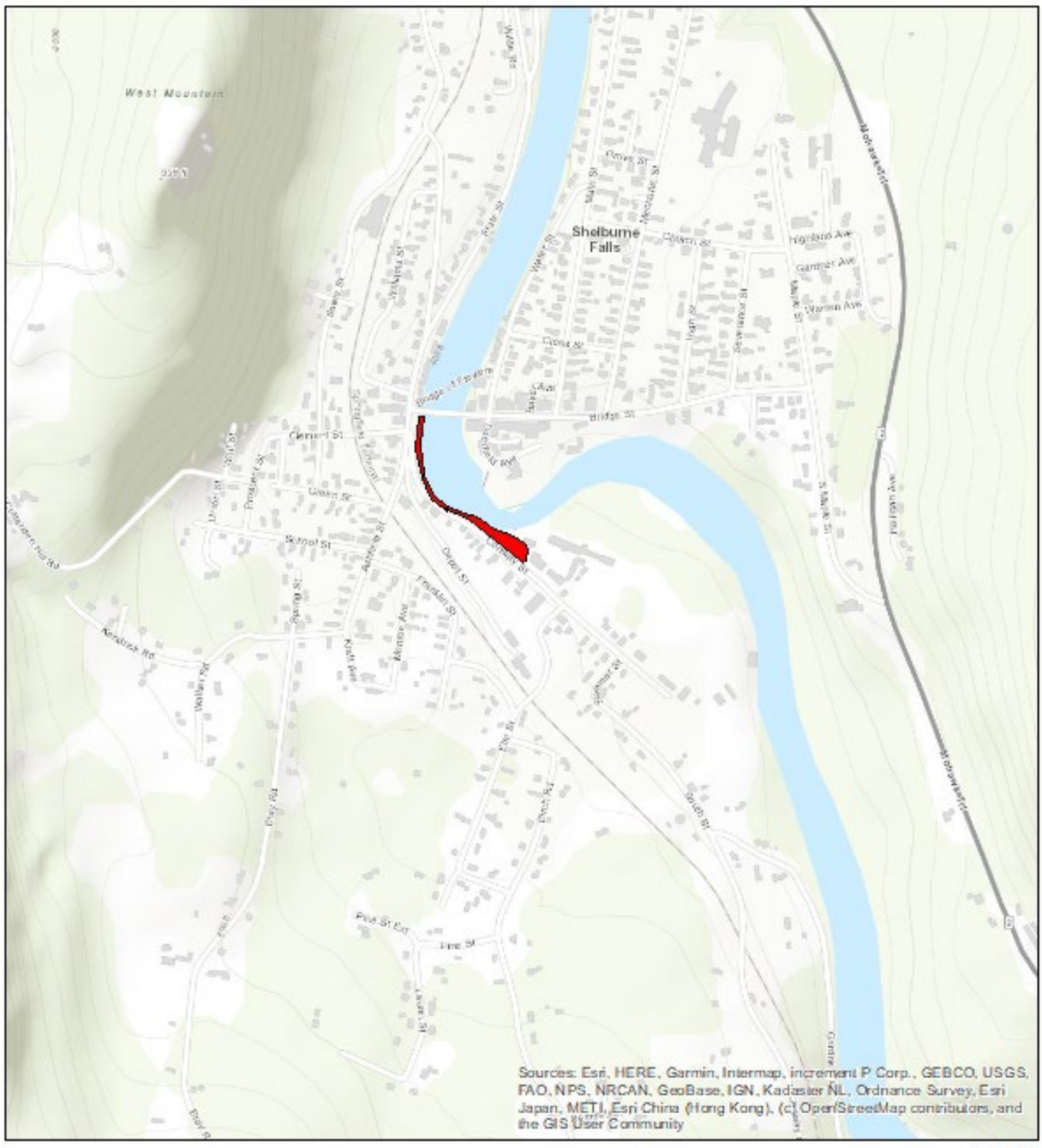
Table 6: Herbicide Spill Check List

REPORTABLE SPILLS (Spills of reportable quantity of material): FOLLOW STEPS 1-11

NON-REPORTABLE SPILLS: FOLLOW STEPS 1-4, 7-11 as appropriate & contact the Great River Hydro representative.

Order	ACTION		Done (√)
1	Use Personal Protective Equipment (PPE) as directed by product label or Safety Data Sheet (SDS)		
2	Cordon-off spill area to unauthorized people and traffic to reduce the spread and exposure of the spill		
3	Identify source of spill and apply corrective action, if possible stop or limit any additional amounts of spilled product.		
4	Contain spill and confine the spread by damming or diking with soil, clay or other absorbent materials.		
5	Report spills of "reportable quantity" to the Mass. DEP and MDAR:		
	MDAR, Pesticide Program	(617) 626-1700	
	Massachusetts Department of Environmental Protection, Emergency Response Section	1-888-304-1133	
6	If the spill cannot be contained or cleaned up properly, or if there is a threat of contamination to any bodies of water, contact any of the following applicable emergency response personnel:		
	local fire, police, rescue	911	
	Great River Hydro Representative: **Timothy Harty**	(603) 445-6813	
	Product manufacturer(s) 1 2 3		
	Product manufacturer(s) 1 2 3 Chemtrec		
	additional emergency personnel:		
	Remain at the scene to provide information and assistance to responding emergency clean-up crews		
7	Refer to the various sources of information related to handling and cleanup of spilled product		
8	If possible, complete the process of “soaking up” with appropriate absorbent materials		
9	Sweep or shovel contaminated products and soil into leak proof containers for proper disposal at approved location		
10	Spread activated charcoal over spill area to inactivate any residual herbicide		
11			

APPENDIX I:
MAPS



1:10,000

0 500 1,000 2,000 Feet

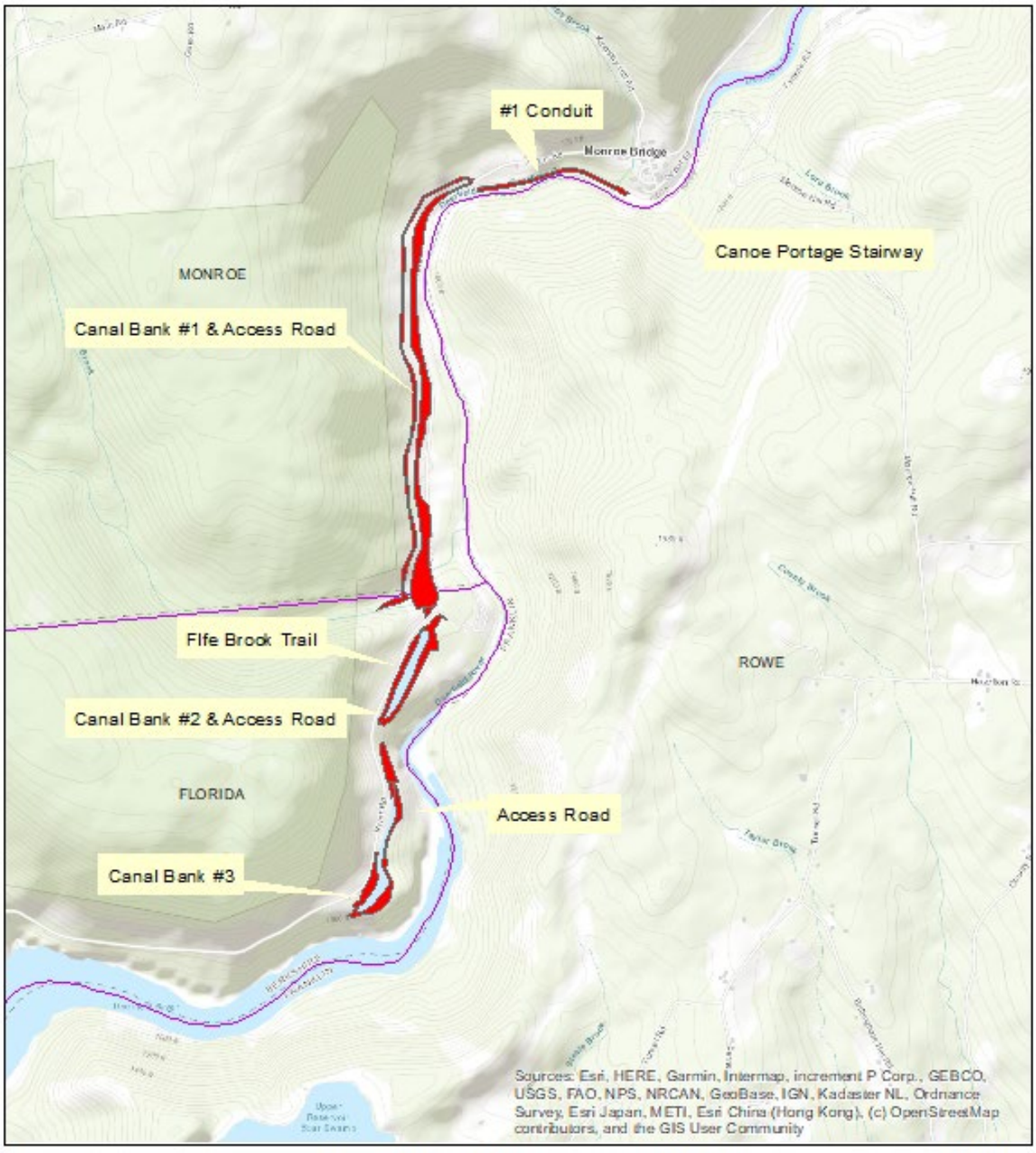
Legend

Great River Hydro 2026

No Public Wells

Great River Hydro 2026 YOP Buckland

N



0 1,250 2,500 5,000 Feet

1:24,000

Legend

No Public Wells

Great River Hydro 2026

Great River Hydro 2026 YOP Monroe & Florida

N

APPENDIX II:
333 CMR 11.00

333 CMR 11.00: RIGHTS OF WAY MANAGEMENT

Section

11.01: Purpose

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 rights-of-way on human health and the environment while allowing for the benefits to public safety provided by the selective use of herbicides. Specific goals of 333 CMR 11.00 are to:

(1) Ensure that an Integrated Pest Management (IPM) approach to vegetation management is utilized on all rights-of-way covered by 333 CMR 11.00.

(2) Establish standards, requirements and procedures necessary to prevent unreasonable risks to humans or the environment, taking into account the economic, social and environmental costs and benefits of the use of any pesticide.

(3) Ensure ample opportunity for public and municipal agency input on potential impacts of herbicide application to rights-of-way in environmentally sensitive areas.

(4) Establish a mechanism for public and municipal review of rights-of-way maintenance plans.

11.02: Definitions

For the purposes of 333 CMR 11.00, unless the context clearly requires otherwise, the following definitions shall apply:

Agricultural Area includes, but is not limited to, actively cultivated gardens, greenhouses, orchards, fields, pastures, and other areas under cultivation or agricultural management.

Applicant, any person representing any federal, state or local government or agency, utility, railroad or pipeline, that intends to maintain a right-of-way in the Commonwealth by application of herbicides.

Associated Surface Water Body, as identified on the most current available maps prepared by the Department of Environmental Protection, any body of water that is hydrologically connected to a Class A surface water source.

Ballast, the coarse gravel or crushed rock on which the ties, tracks and switching, signaling and communication devices of a railroad are laid.

Broadcast, any non-selective herbicide application technique which results in application to all vegetation within a target area.

Certified Vernal Pool, a confined basin depression, certified and mapped by NHESP pursuant to the provisions of 310 CMR 10.57(2)(a)5. and 6., which, at least in most years, holds water for a minimum of two continuous months during the spring and/or summer, and which is free of adult fish populations.

11.02: continued

Certified Vernal Pool Habitat, that vernal pool habitat which has been certified and mapped by NHESP pursuant to the provisions of 310 CMR 10.57(2)(a)5. and 6. or, in the event that such habitat has not been mapped, the area extending 100 feet horizontally outward from the boundary of any Certified Vernal Pool.

Class A Waters, waters which are designated as a source of public water supply, as defined in 314 CMR 4.05(3)(a).

Class B Drinking Water Intakes, intakes to Class B waters suitable as sources of public water supply with appropriate treatment, as defined at 314 CMR 4.05(3)(b) and as identified on the most current available maps prepared by the Department of Environmental Protection.

Department, the Department of Agricultural Resources.

FIFRA, the Federal Insecticide, Fungicide and Rodenticide Act, Public Law 92-516.

Foliar Treatment, any technique which applies herbicide to leaves of target vegetation.

Inhabited Area, any area where people generally live, work or gather, including, but not limited to, any residence, school, hospital, park or recreational facility.

Interim Wellhead Protection Area (IWPA), for public water systems using wells or well fields that lack a Department of Environmental Protection-approved Zone II, an interim wellhead protection area, as that term is defined in the Massachusetts drinking water regulations, 310 CMR 22.02, and as identified on the most current available maps prepared by the Department of Environmental Protection, shall apply. Generally, this is a ½- mile radius for sources whose approved pumping rate is 100,000 gallons per day or greater. For smaller sources, the radius in feet is determined by multiplying the approved pumping rate in gallons per minute by 32 and adding 400.

Limited Application Waiver, a waiver from the requirements of 333 CMR 11.05 and 11.06, granted at the Department's sole discretion pursuant to 333 CMR 11.03(14), when the reason for the application is emergency public health or safety or when the application is for one time only.

Limited Spray Area, any area that is both within a Right-of-Way and within:

(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 ten 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 ten 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; and
(i) a distance of 100 feet of any Agricultural or Inhabited Area.

Low Pressure, pressure under 60 pounds per square inch (psi).

Maps, United States Geological Survey maps of scale 1:25,000 or other maps, as determined by the Department, which are of such accuracy and scale to provide sufficient detail so that sensitive areas can be delineated.

NHESP, the Natural Heritage and Endangered Species Program within the Massachusetts Division of Fisheries and Wildlife.

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) ten 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;
(g) ten feet of any Wetlands or Water Over Wetlands;
(h) ten feet of the mean annual high-water line of any river; and
(i) ten feet of any Certified Vernal Pool.

Person, an individual, association, partnership, corporation, company, business organization, trust, estate, the Commonwealth or its political subdivisions, administrative agencies, public or quasi-public corporation or body, or any other legal entity or its legal representatives, agent or assignee, or a group of persons.

Person Aggrieved, any person who, because of an act or failure to act by the Department may suffer an injury in fact which is different either in kind or magnitude from that suffered by the general public and which is within the scope of the interests identified in 333 CMR 11.00. Such person must specify in writing sufficient facts to allow the Department to determine whether or not the person is in fact aggrieved.

Private Well, any private drinking water supply identified by the local Board of Health, the well owner or the Department of Agricultural Resources.

Private Well Registry, a registry of private wells located within 100 feet of a right-of-way which is maintained by the Department of Agricultural Resources. Homeowners must notify the Department by completing a registration form which is available directly from the Department or online at the Department website.

Public Water Supplier, as defined at 310 CMR 22.02(1), any person who owns or operates a public water supply system.

Public Ground Water Source, a source of water for a Public Water Supply System, as that term is defined in the Massachusetts drinking water regulations at 310 CMR 22.02.

Right(s)-of-way (ROW), any roadway, or thoroughfare on which public passage is made and any corridor of land over which facilities such as railroads, powerlines, pipelines, conduits, channels or communication lines or bicycle paths are located.

Rights-of-way Advisory Panel, a panel established to advise the Department on issues relating to 333 CMR 11.00 and to fulfill specific functions as detailed within 333 CMR 11.05 and 11.11.

River, a river as defined at 310 CMR 10.04 and as identified on the most current available maps prepared by the Department of Environmental Protection.

Riverfront Area, a riverfront area as defined at 310 CMR 10.58(2) and as identified on the most current available maps prepared by the Department of Environmental Protection. In general, this term shall mean the area between the mean annual high-water line of a perennially flowing river and a parallel line 200 feet away.

Selective Application, any application of herbicides, in such a manner that the delivery to the target vegetation is optimized and delivery to non-target vegetation and the environment is minimized.

Sensitive Areas, as defined in 333 CMR 11.04, any areas within Rights-of-Way, including No-Spray and Limited-Spray Areas, in which public health, environmental or agricultural concerns warrant special protection to further minimize risks of unreasonable adverse effects.

State-listed Species, any species on the Massachusetts list of Endangered, Threatened, and Special Concern Species as described in the Massachusetts Endangered Species Act (M.G.L c. 131A; 321 CMR 10.02).

State-listed Species Habitat, the Estimated Habitats of Rare Wildlife (310 CMR 10.59 and 10.37) and the Priority Habitats for State-listed Species (321 CMR 10.02) as shown on the most recent edition of the Massachusetts Natural Heritage Atlas prepared by NHESP.

Stem Treatment, any technique including, but not limited to, stump, basal, stem, injection, banding, frill, or girdle and any other technique which delivers herbicide at low pressure to the stump, base or stem of the target vegetation.

Surface Water Source, any lake, pond, reservoir, river, stream or impoundment designated as a public water supply in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00, as identified on the most current available maps prepared by the Department of Environmental Protection.

Target Vegetation, any plant species which has the potential to interfere with the operation and safety of the right-of-way.

Touch-up Application, any limited application of herbicides following an initial treatment, which is necessary to achieve the desired vegetation control.

Tributary, as identified on the most current available maps prepared by the Department of Environmental Protection, any body of running, or intermittently running, water which moves in a definite channel, naturally or artificially created, in the ground due to a hydraulic gradient, and which ultimately flows into a Class A surface water source, as defined in 314 CMR 4.05(3)(a).

Vegetation Management Plan (VMP), a long term management plan for the applicant's right-of-way system which describes the intended program for vegetation control over a five year period.

Vernal Pool, *see* Certified Vernal Pool.

Water Over Wetlands, the ocean or any estuary, lake or pond as defined at 310 CMR 10.04.

Wetlands, any of the following areas as defined in 310 CMR 10.02(1)(a), (b), (c) and (f):

(a)

Any bank,		the ocean
any freshwater wetland,		any estuary
any coastal wetland,		any creek
any beach,	bordering	any river
any dune,	on	any stream
any flat		any pond
any marsh,		or any lake
or any swamp;		

(b) Land under any of the water bodies listed in 333 CMR 11.02: Wetlands(a); and

(c) Land subject to tidal action.

Wetlands Determination, a written determination of the boundaries of Wetlands and boundaries of areas within 100 feet of Wetlands in accordance with the regulations of the Department of Environmental Protection (DEP) at 310 CMR 10.05(3)(a)1. and 2. 310 CMR 10.03(6)(b) requires applicants not eligible for a public utility exemption to submit these determinations with their VMPs if they will apply herbicides within 100 feet of wetlands and will not submit a Notice of Intent under M.G.L. c. 131, § 40, the Wetlands Protection Act. In order to obtain a Wetlands Determination, the applicant should submit a request to the conservation commission on maps of a scale that will enable the conservation commission or Department of Environmental Protection to find and delineate the boundaries of Wetlands and buffer zones within the vicinity of the right-of-way herbicide management area. To be considered "valid," the Wetlands Determination should be made no sooner than six months immediately prior to the submission of the Vegetation Management Plan. The Wetlands Determination shall cover the period of the Vegetation Management Plan only and shall expire at the end of the five year period of that Vegetation Management Plan.

Yearly Operational Plan (YOP), the yearly operational plan which describes the detailed vegetation management operation for the calendar year consistent with the terms of the long term Vegetation Management Plan.

Zone A, as identified on the most current available maps prepared by the Department of Environmental Protection, the protective land area for a Surface Water Source, Class A water source, Tributary, or Associated Surface Water Body defined in 310 CMR 22.02 as:

(a) the land area between the Class A surface water source and the upper boundary of the bank;
(b) the land area within a 400 foot lateral distance from the upper boundary of the bank of a Class A surface water source, as defined in 314 CMR 4.05(3)(a); and
(c) the land area within a 200 foot lateral distance from the upper boundary of the bank of a Tributary or Associated Surface Water Body.

Zone I, as identified on the most current available maps prepared by the Department of Environmental Protection and as defined at 310 CMR 22.02, the protective radius required around a public water supply well or wellfield. For public water system wells with approved yields of 100,000 gallons per day (gpd) or greater, the protective radius is 400 feet. Tubular wellfields require a 250 foot protective radius. Protective radii for all other public water system wells are determined by the following equation: Zone I radius in feet = (150 x log of pumping rate in gpd) –350.

Zone II, as identified on the most current available maps prepared by the Department of Environmental Protection and as defined at 310 CMR 22.02, the aquifer recharge area for a public water supply well or wellfield.

11.03: General Provisions

(1) No person shall use an herbicide for the purpose of clearing or maintaining a right-of-way unless appropriately certified by the Department, or licensed by the Department and working under the on-site supervision of an appropriately certified applicator.

(2) No person shall use an herbicide for the purpose of clearing or maintaining a right-of-way except in accordance with a Vegetation Management Plan (VMP) and a Yearly Operational Plan (YOP) as approved by the Department. The YOP shall be available at the work site at all times during herbicide applications and be made available to the Department and municipal officials including the Conservation Commission and Board of Health upon reasonable request.

(3) No person shall handle, mix or load an herbicide concentrate on a right-of- way within 100 feet of a sensitive area.

(4) The perimeter of any sensitive areas which are not readily identifiable on the ROW shall be identified with a clearly visible marker system, consistent with the VMP, prior to any herbicide application.

(5) No foliar application of herbicides shall be used to control vegetation greater than 12 feet in height except for side trimming.

(6) No herbicide shall be applied when the wind velocity is such that there is a high propensity to drift off target and/or during measurable precipitation, and no person shall apply herbicides in such a manner that results in drift into any No-spray Area.

(7) No person shall apply herbicides by aircraft for the purpose of clearing or maintaining a right-of-way.

(8) No touch-up applications shall be carried out except under the following conditions:
(a) Touch-up applications must occur within 12 months of the initial application.
(b) All applicable public notification procedures of M.G.L. c. 132B, § 6B, as outlined in 333 CMR 11.07(1) and (3), are followed.
(c) No more than 10% of the initially identified target vegetation on the applicant's right-of-way in any municipality may be treated and the total amount of herbicide applied in any one year shall not exceed the limits specified by the label or Yearly Operational Plan.
(d) The Department may impose such additional restrictions or conditions on the use of herbicides as it deems necessary to protect public health and the environment.

(9) The Department will maintain mailing lists of individuals and groups desiring to obtain notices on various aspects of the Program.

(10) No person shall apply any herbicide identified as a Potential Ground Water Contaminant pursuant to 333 CMR 12.00 to a right-of-way.

(11) No person shall use an herbicide for the purpose of clearing or maintaining a right-of-way unless that person has obtained the most current available map of public ground water sources from the Department of Environmental Protection.

(12) No person shall use an herbicide for the purpose of clearing or maintaining a right-of-way unless that person has done one or more of the following:
(a) obtained a current list of identified Private Wells within 100 feet of the right-of-way from the Board of Health, or
(b) obtained a current list of all private wells, within 100 feet of the right of way from the Department of Agricultural Resources private well registry; or
(c) followed an alternative Private Well identification method outlined in an approved YOP.

(13) The applicator shall provide any employee of any state agency, or authority as defined in M.G.L. c. 3, § 39, when such employee is, within a right-way, using pesticides, supervising the use of pesticides, or present during the use of pesticides, with personal protective equipment and clothing. Applicators should note that other federal or state laws or regulations pertaining to pesticide applications may require this personal protective equipment to include protections according to Material Safety Data Sheets (MSDS's), the product label, and any other supporting technical data supplied by the manufacturer.

(14) Notwithstanding the provisions of 333 CMR 11.03(2) or other provisions of 333 CMR 11.00, the Department may, at its sole discretion, issue Limited Application Waivers to applicants wishing to apply herbicides to clear or maintain rights-of-way without VMPs or YOPs, but only under the following conditions:
(a) The applicant must demonstrate either:
1. that the application will not occur more than once in a five-year period unless a VMP and a YOP are prepared and all other requirements of 333 CMR 11.00 are met; or
2. that the application is necessary to protect public health or safety.
(b) The applicant must still adhere to all public notification requirements established at 333 CMR 11.07(1) and (3).
(c) The applicant must provide the Department with a letter establishing the concurrence of the chief elected official or board of selectmen of the municipality where the application is to be made.

11.03: continued

(d) The applicant may only use herbicides on the Department's "Herbicides Recommended for Use in Sensitive Areas List."
(e) If the application could impact Wetlands, the Department recommends that the applicant send a copy of its application for a Limited Application Waiver to the Department of Environmental Protection's Division of Wetlands and Waterways no less than 21 days before the proposed application.
(f) It should be noted that, with certain exceptions for public utilities, wetlands regulations at 310 CMR 10.03(6)(b) currently require Wetlands Determinations prior to any application within 100 feet of a Wetland.

Limited Application Waivers shall be issued solely at the Department's discretion, and the Department may impose such additional restrictions or conditions on the use of herbicides as it deems necessary to protect public health and the environment.

11.04: Sensitive Area Restrictions

(1) General. In any sensitive area:
(a) No more than the minimum labeled rate of herbicide for the appropriate site, pest, and application method shall be applied.
(b) Herbicides shall only be applied selectively by low pressure, using foliar techniques or basal or cut-stump applications, or other method approved for use by the Department.
(c) No person shall apply herbicides for the purpose of clearing or maintaining a right-of-way in such a manner that results in drift to any area within ten feet of standing or flowing water in a wetland; or area within 400 feet of a public drinking water supply well; or area within 100 feet of any Class A surface water used as a public water supply; or area within 50 feet of a Private Well.
(d) Only herbicides specified by the Department as acceptable for use in sensitive areas pursuant to the Cooperative Agreement executed between the Department of Agricultural Resources and the Department of Environmental Protection on July 1 and 2, 1987, or future amendments thereto, shall be used in sensitive areas. Applicants proposing to use an herbicide which has been registered for use on rights-of-way but has not yet been evaluated pursuant to the provisions of the Cooperative Agreement may request that such herbicides be evaluated pursuant to said provisions. For an herbicide that has been evaluated pursuant to the provisions of the Cooperative Agreement, applicants proposing to use such herbicide in a manner inconsistent with the terms and conditions of use imposed in the guidelines may request a modification or waiver of such terms or conditions. A request for such modification or waiver shall provide a detailed rationale for use, with all relevant data including but not limited to environmental fate, efficacy and human health effects of the proposed herbicide. Such herbicides and/or uses shall be subject to the evaluation standards adopted by the Departments of Agricultural Resources and Environmental Protection in the Cooperative Agreement.
Commentary. Applicants not eligible for the public utilities exemption from the Wetlands Protection Act outlined at 310 CMR 10.03(6)(a), who wish to apply pesticides registered for use in Massachusetts to rights-of-way, may choose to apply herbicides determined to be suitable for use in sensitive areas in accordance with the provisions of the Cooperative Agreement mentioned above or, alternatively, such applicants may proceed pursuant to the provisions of 310 CMR 10.00 as authorized by M.G.L. c. 131, § 40.

(e) The Department may impose such additional restrictions or conditions on the use of herbicides within or adjacent to sensitive areas as it determines necessary to protect human health or the environment. Such changes may be proposed by a municipal agency or individual during the public comment period.
(f) In the event of a question or dispute as to which setback applies to a sensitive area, the most restrictive setback shall apply.

(2) Water Supplies.
(a) Public Ground Water Sources.
1. No herbicides shall be applied within a Zone I.
2. No herbicides shall be applied within a Zone II or IWPA unless:

a. A minimum of 24 months has elapsed since the last application to the site; and
b. Herbicides are applied selectively by low pressure, using foliar techniques or basal or cut-stump applications.

(b) Class A Public Surface Water Sources, Associated Surface Water Bodies, Tributaries and Class B Drinking Water Intakes.

1. No herbicides shall be applied within 100 feet of any Class A public surface water source.
2. No herbicides shall be applied within 100 feet of any tributary or associated surface water body located within the Zone A of a Class A public surface water source, or within ten feet of any tributary or associated surface water body located outside of the Zone A of the Class A public surface water source.
3. No herbicides shall be applied within a lateral distance of 100 feet for 400 feet upstream of any Class B Drinking Water Intake.
4. No herbicides shall be applied within a distance of between 100 feet from any Class A surface water source and the outer boundary of any Zone A, or within a distance of between ten feet and the outer boundary of the Zone A for any tributary or associated surface water body located outside of the Zone A of a Class A surface water source, or within a lateral distance of between 100 and 200 feet for 400 feet upstream of a Class B Drinking Water Intake, unless:
   a. A minimum of 24 months has elapsed since the last application to the site; and
   b. Herbicides are applied selectively by low pressure, using foliar techniques or basal or cut-stump applications.

(c) Private Wells.

1. No herbicides shall be applied within 50 feet of an identified Private Well.
2. No herbicides shall be applied within a distance of between 50 feet and 100 feet of an identified Private Well, unless:
   a. A minimum of 24 months has elapsed since the last application to the site; and
   b. Herbicides are applied selectively by low pressure, using foliar techniques or basal or cut-stump applications.

(3) State-listed Species Habitat.

(a) Any person proposing to apply an herbicide within any State-listed Species Habitat who does not have a current Yearly Operational Plan approved in writing by the Division of Fisheries and Wildlife pursuant to 321 CMR 10.14(12), shall submit all necessary materials required for review pursuant to 321 CMR 10.18.

(b) The management of vegetation within existing utility rights-of-way shall be exempt from the requirements of 321 CMR 10.18 through 10.23, provided that the management is carried out in accordance with a Yearly Operational Plan approved in writing by the Division of Fisheries and Wildlife, pursuant to 321 CMR 10.14(12).

(c) No person shall apply an herbicide within State-listed Species Habitat unless the application is approved by the Division of Fisheries and Wildlife pursuant to 333 CMR 11.04(3)(a) and (3)(b), and such approval is submitted to the Department.

(4) Wetlands, Waters Over Wetlands, Riverfront Areas, and Certified Vernal Pools.

(a) No herbicide shall be applied on or within ten feet of a Wetland or Water Over a Wetland, within ten feet of the mean annual high-water line of any River, or within ten feet of any Certified Vernal Pool.

(b) No herbicide shall be applied on or within a distance of between ten feet and 100 feet of any Wetland or Water Over a Wetland, within a distance of ten feet from the mean annual high-water line of any River and the outer boundary of any Riverfront Area, or within a distance of ten feet from any Certified Vernal Pool and the outer boundary of any Certified Vernal Pool Habitat unless:

1. A minimum of 12 months has elapsed since the last application to the site; and
2. Herbicides are applied selectively by low pressure, using foliar techniques or basal or cut-stump applications.

(c) Notwithstanding 333 CMR 11.04(4)(a) and (b), public utilities providing electric, gas, water, telephone, telegraph and other telecommunication services (and other applicants, if consistent with all relevant provisions of the Massachusetts Wetlands Protection Act and its regulations in effect at the time of application) may apply herbicides on or within ten feet of a Wetland in accordance with the following conditions:

11.04: continued

1. Submission of a study, the design of which is subject to prior approval by the Departments of Agricultural Resources and Environmental Protection, evaluating impacts of the proposed vegetation management program utilizing herbicides on or within ten feet of Wetlands, and comparing those impacts to those which would result if only non-chemical control methods were used in these areas. The study must detail vegetation management practices and use patterns specific to those used by the type of entity submitting the study; and

2. A finding by the Department, after consultation with the Rights-of-way Advisory Panel, that the proposed vegetation management program utilizing herbicides on or within ten feet of Wetlands will result in less impacts to the Wetlands than mechanical control.

3. Notwithstanding the above, no herbicides shall be applied on or within ten feet of any standing or flowing water in a Wetland.

(5) Inhabited and Agricultural Areas. No foliar herbicide shall be applied within 100 feet of any Inhabited Area or any Agricultural Area unless:

(a) A minimum of 12 months has elapsed since the last application to the site; and

(b) Herbicides are applied selectively by low pressure, using foliar techniques or basal or cut-stump applications.

11.05: Vegetation Management Plan (VMP)

(1) General.

(a) Unless otherwise specified by the Department, all VMPs should be submitted by the applicant no later than September 1st prior to the calendar year of the proposed first year of maintenance. All approved VMPs shall be effective for a five year period unless otherwise modified, or revoked by the Department.

(b) The VMP shall be presented on forms and/or format approved by the Department.

(2) Requirements. The VMP shall include, but not be limited to, the following:

(a) General statement of goals and objectives of the VMP.

(b) Identification of target vegetation.

(c) Intended methods of vegetation management and rationale for use, including vegetation control techniques, equipment proposed for use, timing of applications and alternative control procedures.

(d) Discussion of justification for proposed herbicide applications, including a description of the alternative control methods considered and the reasons that they were rejected.

(e) Methods, references and sources for identifying sensitive areas and control strategies proposed for sensitive areas. Applicants should note that the Department of Environmental Protection regulations at 310 CMR 10.03(6)(b) require Wetlands Determinations for applicants that are not eligible for a public utility exemption.

(f) Operational guidelines for applicators relative to herbicide use.

(g) Identification and qualifications of individuals developing and submitting a plan.

(h) A detailed description of the IPM Program, showing how it will minimize the amount and frequency of herbicide application.

(i) Description of alternative land use provisions or agreements that may be established with individuals, state, federal or municipal agencies that would minimize the need for herbicides, including the rationale for accepting or denying any reasonable request made by any individual.

(j) Description of a remedial plan to address spills and related accidents.

(k) For state agencies and authorities as defined in M.G.L. c. 3, § 39, a description of the applicant's policy to eliminate or, if necessary, reduce the use of pesticides for any vegetation management purpose along roadways, and a demonstration that, for the proposed application, the costs of non-chemical vegetation control significantly outweigh the benefits.

(3) Public Notice, Review and Comment.

(a) Upon receipt of the proposed VMP, the Department shall schedule and hold appropriate regional public hearings affording all interested parties the opportunity to comment, both at the hearings and in writing to the Department, on the proposed plan.

11.05: continued

(b) At least 21 days prior to the public hearings, the Department shall publish notice of the hearings in the Environmental Monitor and regionally located newspapers, and send notice to municipalities covered by the plan and to the appropriate mailing list. The notice will include locations where copies of the VMP can be reviewed.

(c) The public shall have no less than 45 days, starting from publication of the *Environmental Monitor* notice, to comment upon proposed VMPs, unless the Department extends the comment period for good cause.

(d) Wherever a chief elected official, Board of Health or Conservation Commission in a municipality covered by the proposed VMP requests a copy of the proposed plan, the applicant shall, at least 21 days prior to the end of the public comment period, respond to this request. The response must either include a copy of the proposed VMP, or an Internet address where the VMP may be viewed and a note that a hard copy will be provided promptly upon further request.

(4) Disposition of VMP.

(a) 25 copies of the proposed VMP shall be submitted to the Department. The Department shall distribute copies of the proposed VMP to each member of the Rights-of-way Advisory Panel. The Department may, at its sole discretion, allow electronic presentation of the VMP in *lieu* of some or all of the 25 copies that would otherwise be submitted pursuant to 333 CMR 11.05(4).

(b) Within 30 days of the end of the public comment period unless extended for good cause, the Rights-of-way Advisory Panel shall review the VMPs and recommend in writing to the Department approval, denial or modification of each VMP; if necessary, the Advisory Panel may request additional information from the applicant.

(c) Within 21 days of the end of the Rights-of-way Advisory Panel review period, unless extended by the Department for good cause, the Department will notify the applicant and the Advisory Panel in writing one of the following:

1. request for additional information or modification;
2. denial of VMP; or
3. approval of VMP.

(d) The VMP may be modified, withdrawn or amended by the applicant through a written request sent by certified mail to the Department.

(e) Resubmission of a denied VMP, updating of a VMP, or a significant amendment to an approved VMP shall be processed according to 333 CMR 11.05.

(f) The applicant must send a copy of the approved VMP, or an Internet address where the VMP may be viewed and a note that a hard copy will be provided promptly upon further request, to the chief elected official, Board of Health, and Conservation Commission in each municipality covered by the plan.

(5) Time for Action. Non-action by the Department on a VMP within the time specified in 333 CMR 11.05 does not constitute approval of the submitted plan. In the event that the Department fails to notify the applicant of a decision within the time specified in 333 CMR 11.05(4)and upon written request from the applicant, the Commissioner must issue a finding within ten days of receipt stating the reason for the delay and providing an estimated completion date.

11.06: Yearly Operational Plan (YOP)

(1) General.

(a) The applicant is responsible for the accuracy and completeness of all information submitted with the YOP. The YOP shall be consistent with the objectives of the VMP and shall describe the intended operational program for that calendar year.

(b) The YOP shall be presented on forms and in a format approved by the Department.

(2) Requirements. The YOP shall include but not be limited to the following:

(a) Maps locating the rights-of-way and sensitive areas not readily identifiable in the field;

(b) Herbicides proposed including Environmental Protection Agency (EPA) Registration numbers, application rates, carriers and adjuvants;

(c) Herbicide application techniques and alternative control procedures proposed.

(d) The name, address and phone number of the company which will perform any herbicide treatment;

(e) Identification of target vegetation;
(f) The name, address and phone number of the individual representing the YOP applicant;
(g) Description of methods used to flag or otherwise designate sensitive areas on the right-of-way;
(h) Herbicide Fact Sheets as approved by the Department; and
(i) Procedures and locations for handling, mixing and loading of herbicide concentrates.

(3) Public Notice, Review and Comment.
(a) Upon submittal of the YOP for approval, the Department will publish a notice in the *Environmental Monitor*. Said notice shall be provided by the applicant and shall include the information on the municipalities through which the rights-of-way pass, a brief description of the intended program, and the procedure for public review and comment. The Department shall send notification of the publication to the applicant and the appropriate mailing list.
(b) Upon submittal of the YOP to the Department, the applicant shall provide by certified mail under separate cover to the Board of Health, Conservation Commission, chief elected municipal official, and where applicable, the Massachusetts Water Resources Authority and Massachusetts Department of Conservation and Recreation, a copy of the proposed YOP (or an Internet address where the proposed YOP may be viewed and a note that a hard copy will be provided promptly upon request) and the *Environmental Monitor* notice for the municipality or municipalities in which the herbicide treatment is proposed. Community water suppliers shall receive electronic information or a one page notification by mail which provides details about where to receive more information. The applicant shall maintain copies of the packet sent to municipalities and certified mail receipts. The applicant shall make copies of the packet, certified mail receipts, and any further correspondence regarding hard copies of YOPs in *lieu* of Internet viewing, available to the Department upon request.
(c) The Department shall allow a 45-day comment period on proposed YOPs, unless extended for good cause, commencing with the publication of the notice in the *Environmental Monitor* and receipt of the proposed YOP and *Environmental Monitor* notice by each municipality.
(d) The Department may approve, deny or modify YOPs after the 45-day comment period has expired.

(4) Disposition of YOP.
(a) The applicant shall submit the YOP to the Department at least 90 days prior to the proposed commencement of application to allow completion of the comment and review period.
(b) The Department shall review the YOP to ensure that the YOP is consistent with the approved VMP. Any inconsistencies or deficiencies will be noted by the Department and returned with the YOP to the applicant.
(c) Where practical, the Department shall approve or deny the YOP within 90 days of receipt. The Department will provide notice of the decision to the applicant, municipal agencies and commentators in writing.
(d) The approved YOP in conjunction with the VMP shall govern the application of herbicide for a period not to exceed 12 months in accordance with other laws and regulations of the State and Federal governments and impose such conditions as necessary to minimize the risk of adverse effects on human health and the environment.

(5) Time for Action. Non-action by the Department on a YOP within the time specified in 333 CMR 11.06(4) does not constitute approval of the submitted plan. In the event that the Department fails to notify the applicant of a decision within the time specified and upon a written request from the applicant, the Commissioner must issue a finding within ten days of receipt stating the reason for the delay and providing an estimated completion date.

11.07 : Public Notification

(1) At least 21 days in advance of application of herbicide to a right-of-way in any city or town, the applicant shall notify the Department, the board of health, and the local public water supplier and, by registered mail, the Mayor, City Manager or Chairman of the Board of Selectman, and the conservation commission in the municipality where the right-of-way lies. The notice shall include the following information: the approximate dates on which such herbicide application shall commence and conclude, provided however, that said application shall not commence more than ten days before nor conclude more than ten days after said approximate dates; the method and locations of application; a Department-approved Herbicide Fact Sheet on the active ingredient(s) of the herbicide(s) used; the EPA registration number(s) for the herbicide(s) used; the name, title, business address and phone number of the certified commercial applicator or licensed applicator, or the contractor, employer or employees responsible for carrying out the application. Where specific information required for this notice is already contained in the current YOP that is on file with the local official, the applicant may incorporate the appropriate pages of the YOP by reference in its notice to that official, indicating that these pages are also directly available from the applicant upon request.

(2) This public notice may run concurrently with the public notice and comment period in 333 CMR 11.06(3), provided that the notice is distributed at least 21 days prior to the herbicide application, and that, prior to the herbicide application, the public notice and comment period has closed and the Department has granted YOP approval without modifications. When the Department's final approval requires modifications or application dates are selected after YOP approval, separate notice under 333 CMR 11.07(1) is required.

(3) At least 48 hours prior to the application referred to in 333 CMR 11.07(1), the applicant must publish a conspicuous notice in at least one newspaper of general circulation in the city or town where the right-of-way lies. The notice must appear in the local section of the newspaper and measure at least four by five inches in size. The notice shall contain the following information: the method and locations of pesticide application; the approximate dates on which the pesticide application shall commence and conclude, provided that the applications shall not commence more than ten days before nor conclude ten days after said approximate dates; a list of potential pesticides to be used; a description of the purpose of the application; and the name, title, business address and phone number of a designated contact person representing the applicant from whom any citizen may request further information. The notice should apply only to the calendar year in which the notice is published. Upon request the notice must be made available to the Department.

11.08 : Notice of Modification and Revocation

(1) The Department may suspend approval of any VMP or YOP, by written notice to the applicant and applicator, halting the application of herbicide to that right-of-way of the YOP. After 21 days if the applicant does not request a hearing, the Department may revoke or modify the VMP and YOP, if it finds:

(a) that the terms, conditions of restrictions thereof, are being violated or are inadequate to avoid unreasonable adverse effects on the environment or on human health; or

(b) that the applicant has made a false or misleading statement or has not provided information requested by the Department or Rights-of-way Advisory Panel; or

(c) that the applicant has violated any provision of the Massachusetts Pesticide Control Act or FIFRA, or any regulations, standards, orders or license issued under either.

(2) Upon notice of revocation or modification, the applicant may modify the YOP by written request to the Department. Applications to modify the YOP shall be submitted in the manner set forth in 333 CMR 11.06 and disposed of in the manner set forth in 333 CMR 11.06. The Department may waive all or part of the requirement if it determines that the proposed changes do not significantly change the terms of the approved YOP.

11.09 : Right-of-appeal

Any person aggrieved by the decision of the Department to approve, deny, modify or revoke a VMP or YOP may request an adjudicatory hearing. The request for a hearing must be received by the Department within 21 calendar days after receipt of the decision. The request should state clearly and concisely the facts of the proceeding, the reasons the decision is alleged to be inconsistent with 333 CMR 11.00 and the relief sought by the adjudicatory hearing. The adjudicatory hearing before the Pesticide Board shall be conducted in accordance with the informal rules of adjudicatory proceeding as set forth in M.G.L. c. 30A.

11.10: Penalties

Any person who violates any provision of 333 CMR 11.00 shall be subject to the criminal and civil penalties set forth in M.G.L. c. 132B, § 14.

11.11: Rights-of-way Advisory Panel

(1) A Rights-of-way Advisory Panel shall be established to advise the Department on issues relating to 333 CMR 11.00 and to fulfill specific functions as detailed within 333 CMR 11.00.

(2) The Department shall request that the following members participate on the Rights-of-way Advisory Panel: the Commissioners/Secretaries or his/her designee of the Department of Environmental Protection, the Department of Public Health, and the Executive Office of Transportation; and a representative, respectively, from each of the following, all to be appointed by the Department Commissioner: the Massachusetts Association of Conservation Commissions, the Massachusetts Association of Health Boards, the Massachusetts Department of Conservation and Recreation, and an Environmental Advocacy Organization Representative, a member of the University of Massachusetts Extension who is well versed in weed science and Integrated Pest Management of weeds, a representative of the Massachusetts Railroad Association, a representative of a utility company and a commercial pesticide applicator.

(3) Non-agency representatives shall remain on the panel for a term of five years. Any member absent from two or more consecutive meetings may be removed from the Advisory Panel at the discretion of the Commissioner of the Department, and a replacement requested from the representative agency, industry group, or association.

(4) The Advisory Panel shall meet at least once each year, and shall hold further meetings upon the request of the Department of Agricultural Resources or at the request of any two members of the Advisory Panel.

(5) All Advisory Panel members shall serve without compensation.

REGULATORY AUTHORITY

333 CMR 11.00: M.G.L. c. 132B.

APPENDIX III:
WETLANDS FINDINGS

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF FOOD AND AGRICULTURE
100 CAMBRIDGE ST., BOSTON, MA 02202 617-727-3000 FAX 727-7235

WILLIAM F. WELD
Governor

ARGEO PAUL CELLUCCI
Lt. Governor

TRUDY COXE
Secretary

JONATHAN L. HEALY
Commissioner

Decision Concerning
The Wetland Impact Study Conducted
Pursuant to 333 CMR 11.04(4)(c)(2)

PUBLIC UTILITY VEGETATION MANAGEMENT PROGRAM FINDING

Background

The Rights of Way Management (ROW) Regulations (333 CMR 11:00) promulgated in 1987 prohibit the use of herbicides to control vegetation along utility right of ways on or within ten (10) feet of a wetland unless the following conditions are met:

1. Submission of a study, the design of which is subject to prior review and approval of the Departments of Food and Agriculture and Environmental Protection, evaluating impacts of proposed vegetation management programs on wetlands; and
2. A finding by the Department, after consultation with the Advisory Committee, that the proposed vegetation management program will result in less impacts to the wetland than mechanical control.
3. Notwithstanding the above, no herbicides shall be applied on or within ten feet of any standing or flowing water in a wetland.

On April 28, 1988, The Departments of Food and Agriculture and Environmental Protection approved the scope of the study. In the fall of 1989, Environmental Consultants, Inc. submitted to the Department of Food and Agriculture the study entitled, "Study of the Impacts of Vegetation Management Techniques on Wetlands for Utility Rights-of Way in the Commonwealth of Massachusetts", dated June 1989. The Department consulted with the Vegetation Management Plan (VMP) Advisory panel at their November 15, 1989, December 7, 1989 and August 1, 1991 meetings.

The study provided some broad information of vegetation control along utility right of ways. The Department based its finding solely upon the narrow scope of whether the "proposed vegetation management program will result in less impacts to the wetland than mechanical control."

The following are the major evaluation points the Department considered in reaching its decision.

What are the Long-term and Short-term Impacts From Herbicide use and Mechanical Control?

Since wetlands are not a static, unchanging resource, there is some difficulty in determining the actual long-term impacts from the various vegetation control practices. The extent of wetland alterations must be the most important factor in determining impacts. With limited or selective removal of unwanted plant species in specific locations, it appears that long-term impacts are negligible. While mowing or foliar application can damage non-target species, neither control practice appears to result in adverse long-term impacts if they are carefully executed. Clear cutting, however, has a greater impact on wetlands since both wanted and nuisance species are removed.

Although there were some reservations about the sites that were chosen to determine the level of chemical residues, the study did show that there was not a buildup of background residues of herbicides applied from previous practices. However, there were some trace amounts of petroleum products - bar oil or hydraulic fluid found. The source of these petroleum products is unclear and may have been the result of public activities not related to vegetation management. Retrospective analyses for herbicide residues in previously treated wetland areas is not generally applicable since the herbicides used today are less persistent than those which were used previously. However, these analyses did indicate that the herbicides used in the past do not persist in the environment.

The study clearly demonstrated that adjacent non-controlled wetland areas did not differ significantly in composition and abundance of plant species from the controlled areas. The control practices did not appear to impact the entire wetland ecosystem, since a long-term comparison of wetland plant species composition between controlled and non-controlled sites did not differ significantly. Therefore, the long-term effects on the entire wetland ecosystem were considered negligible.

The determination of the short-term impacts to the wetland from the control practices was the most noted short-coming of the study. However, this was not part of the original scope. The VMP Advisory Panel felt, and the Department agreed, that a short-term environmental fate study would be needed.

The first study indicated that certain mechanical control practices can impact wetlands and disrupt the ecosystem to a greater extent than the judicious use of herbicides. While cutting may result in re sprouting of some unwanted vegetation in a manner unlikely to be encountered in unaltered wetland areas, unregulated mechanical vegetation control could result in the destruction of other non-target plant species.

What is the Impact to Non-target Wetland Plant Communities?

Basal and cut stump treatment with low mobility, short persistence herbicides that are judiciously applied usually do not impact adjacent plant species. Likewise careful selective mechanical cutting (versus mowing or clear cutting) also usually does not impact non-target wetland plants. The greatest potential risk to non-target wetland plants comes from mowing, clear-cutting, and high volume foliar applications. Low volume foliar applications in wetlands may also cause non-target impacts if application guidelines are not followed (e.g. no applications during high winds, or without using anti-drift agents, etc.).

Is There Enough Information on Which to Base a Finding?

As in most environmental assessments, a complete database is not available to answer all of the questions posed by the Department and the Vegetation Management Advisory Panel. Some of the questions posed were entirely valid, but were beyond the scope of the approved study.

The study did provide some clear evidence that selective mechanical and herbicide use does minimally alter wetlands by removing specific plant species. Mechanical mowing operations, however, can result in far greater short-term and potentially long-term impacts to wetlands since both wanted and un-wanted plant species are indiscriminately removed. Additionally, foliar herbicide applications may cause short-term impacts to non-target species.

The Department did not find any significant difference in wetland impacts between careful mechanical removal (selective hand cutting) of unwanted species

and, cut stump or basal treatment with herbicides.

There is no assurance that prohibiting the use of herbicides in wetlands will result in careful mechanical control. If herbicide use is prohibited in wetland areas, mechanical control in wetlands will be the only practice available to utilities. Financial pressures and other considerations may force Utilities to increase mowing and / or the use of more destructive non-chemical control practices due to a lack of alternative control techniques.

On August 29, 1991, the Department made a finding that the submitted study met the approved scope. However, although the study contained useful information, it was also determined that additional data needed to be gathered and analyzed because the study was inconclusive in a number of instances.

The Department issued a finding that a proposed vegetation program containing the specific elements listed does not pose an unreasonable adverse impact to wetlands. In addition, the Department required a study be conducted to provide important environmental fate data necessary for the long-term implementation of the rights of way program.

AUGUST 1991 FINDING

The Department of Food and Agriculture finds that a proposed vegetation program containing the following elements will not pose an unreasonable adverse impact to wetlands:

1. *The Integrated pest Management (IPM) system, as described in the Vegetation Management Plan and Yearly Operation Plan, is utilized in wetland areas. The IPM system must, at a minimum, place emphasis on encouraging low growth plant species to discourage unwanted vegetation and, minimizing the frequency and amount of herbicide use by only controlling specific non-conifer tree species which will impact transmission line operation and access to the right of way.*

2. *Herbicides may be applied by basal, cut stump or low volume foliar methods. Foliar applications must include the use of drift reduction agents. Foliar applications may only be conducted in situations where basal and cut stump treatments are not appropriate based on the size of the vegetation and potential for off-target drift. Foliar applications must not result*

in the off-target drift to non-target species.

3. *Herbicides are not applied to conifer species (pine, spruce, fir, cedar and hemlock).*

4. *Carriers for herbicides do not contain any of the following petroleum based products: jet fuel, kerosene or fuel oil. Carriers will be subjected to review by the Department of Food and Agriculture and DEP through 333 CMR 11.04(1)(d).*

5. *Herbicides must be recommended by the Department of Food and Agriculture and DEP through 333 CMR 11.04(1)(d).*

6. *Herbicides may only be applied by hand operated equipment containing no more than 5 gallons of diluent.*

7. *All other restrictions within sensitive areas remain in effect. In accordance with 333 CMR 11.04(1)(c), no person shall apply herbicides for the purposes of clearing or maintaining a right-of-way in such a manner that results in drift to any areas within 10 feet of standing or flowing water in a wetland or area within 400 feet of a public drinking water supply well; or area within 100 feet of any surface water used as a public water supply; or area within 50 feet of a private drinking water supply identified under 333 CMR 11.04(2)(c)(3).*

8. *Approved Vegetation Management Plans and Yearly Operation Plans must be amended as needed to reflect the conditions of this FINDING.*

9. *The Department further requires that environmental fate data be provided by the utilities that are applying herbicides to rights-of-way, which characterizes the movement of herbicides applied to wetland areas under these conditions. The Department further requires that all study protocols be reviewed by the Vegetation Advisory Panel and be approved by the Department of Food and Agriculture and the Department of Environmental Protection. Failure to submit the required information by the dates outlined in the schedule below will render this finding void.*

An approvable scope of the study developed and

submitted by January 1, 1992.

Field data submitted to DFA by October 1, 1992. Data must be consistent with the requirements of the approved scope.

Draft study report submitted to DFA by October 1, 1993.

Final Report submitted to DFA by March 1, 1994.

10. *The Department reserves the right to amend or withdraw its FINDING at anytime if it determines that the use of herbicides in wetland areas poses a greater impact than mechanical control or may pose an unreasonable adverse effect to humans or the environment.*

11. *This finding expires December 31, 1994.*

Therefore, herbicide use may be allowed to control certain vegetation along utility right of ways if the proposed vegetation program as described in the approved Vegetation Management Plan and Yearly Operational Plans contains the above elements.

On, April 27, 1992, the Departments of Food and Agriculture and Environmental Protection approved the scope of the *"Study of Fates of Herbicides in Wetlands on Electric Utility Rights of Way in the Massachusetts Over the Short Term"*. The final report was submitted to the Department of Food and Agriculture December 31, 1993. The Department began reviewing the report in consultation with the VMP Advisory panel.

At the end of 1994, the Department had not completed its review. Therefore, on December 22, 1994 the Department extended the current finding for one year (to December 31, 1995) or until such time it is able to make a final determination, whichever occurs first.

Fates of Herbicides Over the Short Term Study

The objective of this study was to determine the short term environmental fate and assess the impacts of selected herbicides applied by four common Right-of-Way management techniques. Additionally, the study evaluated which of the four Right-of-Way management techniques provides the most effective control of target vegetation and which techniques produced the least impact on the non-target plant community, and consequently the least alteration of wooded wetland community.

The study investigated the environmental fate of two herbicides, which are typically used to control vegetation on ROWs, and are included in the list recommended for use in sensitive areas. These herbicides were chosen, among other reasons, for their use patterns, size of area treated, and application rates. Accord, which contains the active ingredient glyphosate, is the primary herbicide used for cut stump treatment and is also used for foliar application. Garlon 4, which contains the active ingredient triclopyr, is the primary herbicide used for basal applications. Collectively these products represent the typical herbicides used to control vegetation on ROWs.

Results

A summary of the most important findings and conclusions of the study include:

* Based upon the samples collected immediately after application, at 1 week, 1 month, 3 months and 1 year:

  - The two herbicides, glyphosate and triclopyr degrade rapidly. Residues reach low quantities quickly, often less than detection limits, within a year.; and
  - There is essentially no movement either laterally or vertically from the treated sites by glyphosate. Triclopyr does not move laterally, but was noted to move vertically in small amounts.

* Drift cards indicate that the herbicides are neither splashed nor carried any distance by the wind. Glyphosate drift is not a significant problem resulting in slight effects on neighboring vegetation and are not detectable in the next year's growth. Sphagnum moss next to trunks treated basally with triclopyr were killed within three months in a 15 cm diameter circle immediately around the target tree, but the dead circle did not continue to enlarge.

* Filter paper recovered immediately after application of herbicide showed that all methods of application deposit herbicide on the ground. Treated bare soil samples showed as consistent a drop in herbicide concentrations and as little vertical movement as did samples beneath target trees.

* The use of the herbicides glyphosate and triclopyr at the strengths and application rates used does not pose a risk of accumulation in organically rich soils.

* Herbicide concentrations in soil continue to decline as time advances.

* Rainfall occurring more than a week after application does not appear to spread the herbicide nor does groundwater carry any substantial fraction of what has been applied to a particular site down into the soil or horizontally.

* Based upon the results of the study, an assessment of the environmental fate, and observations of both treatment effectiveness and non-target impacts, an effective and environmentally sensitive ranking from most effective and posing least potential environmental risks to least effective and posing the most environmental risk is suggested:

1. Most effective control and exclusive effect on target:
   low-volume foliar (with glyphosate).

2. Most consistent control with lethal effects on bordering vegetation:
   high-volume foliar (with glyphosate)

3. Total control with rings of dead vegetation around treated trunks:
   low-volume basal (with triclopyr)

4. Incomplete target control and leaving largest soil residues:
   cut-stump (with glyphosate)

It is important to note that the results of the second short term study suggest that the most efficacious application techniques and which pose the lowest environmental risk were not those recommended in the interim finding.

DEPARTMENT DETERMINATION

Based upon the results of the two ROW impact studies, the general information in the literature, and after consultations with the Vegetation Management Panel, the Department finds that the following proposed vegetation management program will result in less impacts to wetlands than exclusive use of mechanical control methods. Therefore, the Department finds that any vegetation management program that incorporates the conditions under which the study was conducted as well as taking into account the results of previous studies, will result in the least impacts to wetlands.

These conditions include:

1. An Integrated Pest Management (IPM) system, also known as Integrated Vegetation Management (IVM), as described in the Vegetation Management Plan and Yearly Operation Plan is utilized in wetland areas. The IPM system must, at a minimum, place emphasis on encouraging low growth plant species to discourage unwanted vegetation and, minimizing the frequency and amount of herbicide use by only controlling specific non-conifer tree species which will impact transmission line operation and access to the right of way.

2. Herbicides may be applied by low volume foliar, basal, or cut stump methods. Foliar applications must include the use of appropriate drift reduction agents, and must not result in the off-target drift to non-target species. Basal and cut-stump treatments may be conducted in those situations where the size of the vegetation, potential for off-target drift, or other considerations precludes the use of low-volume foliar applications. Cut stump and basal applications shall be restricted, when practicable, to periods when static ground water levels are low or otherwise when conditions are less susceptible to potential contamination.

3. Herbicides are not applied to conifer species (pine, spruce, fir, cedar and hemlock).

4. Carriers for herbicides do not contain any of the following petroleum based products: jet fuel, kerosene or fuel oil. Carriers will be subjected to review by the Department of Food and Agriculture and DEP through 333 CMR 11.04(1)(d).

5. Only herbicides recommended by the Departments of Food and Agriculture and Environmental Protection through 333 CMR 11.04(1)(d) may be used in sensitive areas.

6. Herbicides may only be applied by hand operated equipment containing no more than 5 gallons of diluent.

7. All other restrictions within sensitive areas remain in effect. In accordance with 333 CMR 11.04(1)(c), no person shall apply herbicides for the purposes of clearing or maintaining a right-of-way in such a manner that results in drift to any areas within 10 feet of standing or flowing water in a wetland or area within 400 feet of a public drinking water supply well; or area within 100 feet of any surface water used as a public water supply; or area within 50 feet of a private drinking water supply identified under 333 CMR 11.04(2)(c)(3).

8. A minimum of twelve months must elapse between herbicide treatments. Only touch-up applications may be performed between twelve and twenty four months.

9. Approved Vegetation Management Plans and Yearly Operation Plans must be amended as needed to reflect the conditions of this determination.

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Therefore, herbicide use may be allowed to control certain vegetation along utility right of ways if the proposed vegetation program as described in the approved Vegetation Management Plan and Yearly Operational Plans contains the above elements.

Jonathan Healy, Commissioner

10/12/95
Date

APPENDIX IV:
CHAPTER 85 of the ACTS OF 2000

CHAPTER 85 OF THE ACTS OF 2000

SECTION 10.

Said chapter 132B is hereby further amended by striking out section 6B, as appearing in the 1998 Official Edition, and inserting in place thereof the following section:

Section 6B.

a. No gas, electric, telephone or other utility company licensed to do business in the commonwealth, nor any agency of the commonwealth or any of its political subdivisions, nor any authority, as defined in section 39 of chapter 3, nor any private entity or their agent, shall spray, release, deposit or apply any pesticide to any land which it owns, or as to which it holds an easement or similar right and over which it maintains power, high tension or other lines, or to any roadway, railway, or other transportation layout, without first notifying the department and, by registered mail, the mayor, city manager or chair of the board of selectmen and the conservation commission in the city or town where such application is to occur 21 days before such spraying, release, deposit or application, and without first publishing conspicuous notice in at least one newspaper of general circulation in each city or town where such land lies at least 48 hours prior to such spraying, release, deposit or application. Such notice shall appear in the local section of the newspaper and measure at least four by five inches in size. The published notice shall include: the method and locations of pesticide spraying, release, deposit or application; the approximate dates on which spraying, release, deposit or application shall commence and conclude, but such spraying, release, deposit or application shall not commence more than ten days before nor conclude more than ten days after such approximate dates; a list of potential pesticides to be used; a description of the purpose of the spraying, release, deposit or application; and the name, title, business address and phone number of a designated contact person from whom any citizen may request further information.

b. The notice to the city or town where the affected land lies shall contain the following information: the method and locations of pesticide spraying, release, deposit or application; the approximate dates on which such spraying, release, deposit or application shall commence and conclude, but such spraying, release, deposit or application shall not commence more than ten days before nor conclude more than ten days after such approximate dates; the type of pesticide to be used and a copy of all information supplied by the manufacturers thereof relative to the pesticide; a department-approved fact sheet and United States Environmental Protection Agency registration number for each pesticide; the name, title, business address and phone number of the certified commercial applicator, certified private applicator or licensed applicator, or the contractor, employers or employees responsible for carrying out the pesticide spraying, release, deposit or application.

c. Notwithstanding any other provision of law, all agencies of the commonwealth and all authorities, as defined in section 39 of chapter 3, shall develop policies to eliminate or, if necessary, reduce the use of pesticides for any vegetation management purpose along any roadway.

d. Any employee of any state agency, or authority, as defined in section 39 of chapter 3, when spraying, releasing, depositing or applying pesticides, supervising the use of pesticides, or when present during the spraying, release, deposit or application of pesticides, shall be provided with personal protection equipment and clothing in conformance with all federal and state laws and regulations pertaining to pesticide applications. This shall include, but not necessarily be limited to, protections according to Material Safety Data Sheets (MSDS), the product label, and any other supportive technical data provided by the manufacturer.

APPENDIX V:
REFERENCES

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