Town of Athol

FIVE YEAR VEGETATION MANAGEMENT PLAN 2025-2029

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of Public Works
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1. INTRODUCTION

The Town of Athol's Vegetation Management Plan (VMP) is designed to establish a five-year program to control vegetation along facilities considered rights-of-way under 333 CMR 11.02. These include "…any roadway, or thoroughfare on which public passage is made and any corridor of land over which facilities such as bicycle paths are located." These include roads, curbing, sidewalks, medians/traffic islands and bicycle paths ("public ways"). By keeping records, the town has been able to manage these areas more efficiently, which has reduced the amount of maintenance required. In compliance with 333 CMR 11.00, Athol is implementing an Integrated Vegetation Management (IVM) program that incorporates regulatory and industry standards that account for safety, environmental concerns and effective target vegetation control. Described in detail below, cultural, physical, mechanical, and chemical (herbicide) practices and principles are the four components of this plan.

Incorporated in 1762, the Town of Athol has a total area of 33.4 square miles with a population of approximately 11,000 residents. As a town with a mixture of rural and dense population areas ranging from a traditional downtown shopping district and residential neighborhoods to wooded, agricultural and recreational open spaces, Athol's public ways consist of business, downtown, residential and rural street systems, state numbered routes that are under the maintenance of the town and recreational trails in our open spaces.

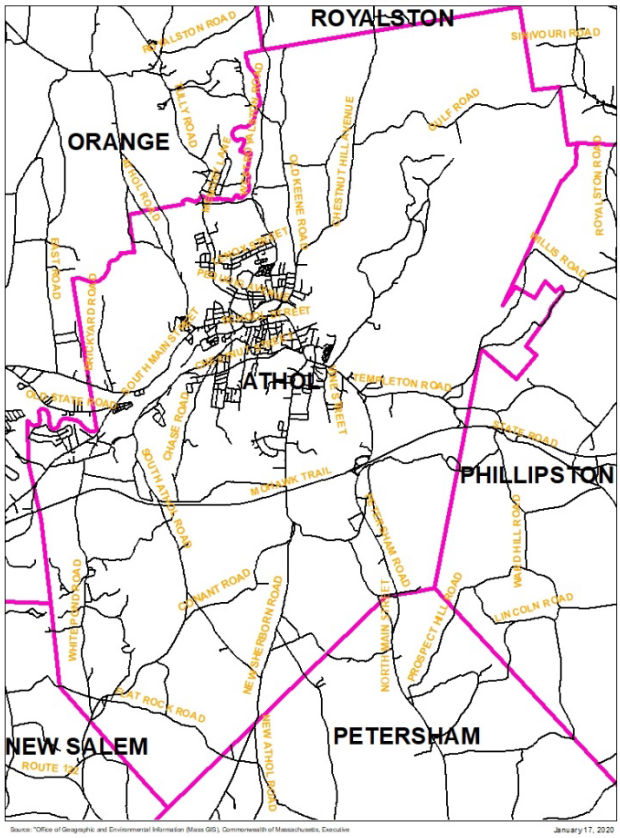

Figure 1: Athol

2. GENERAL STATEMENT OF GOALS AND OBJECTIVES

Vegetation management along public ways is necessary to control vegetation that poses a public nuisance and creates traffic and pedestrian hazards. The operational goal of this VMP is to ensure vegetation management practices along public ways are conducted in an effective and environmentally responsible manner.

Athol is continuing its IVM program that adheres to the parameters set in 333 CMR 11.00. This will be accomplished by following an adaptation of the American National Standards Institute (ANSI)/International Society of Arboriculture (ISA) definition of IVM *(ANSI A300 (Part 7-2018) Tree, Shrub, and Other Woody Plant Management – Standard Practices (Integrated Vegetation Management)*. The purpose of these "ANSI A300 standards are intended for the development of work practices, written specifications, best practices, regulations and other measures of performance" (1.2). As stated in the IVM standard "the reason for IVM is to create, promote, and conserve sustainable plant communities that are compatible with the intended use of the site, and manage incompatible plants that may conflicted with the intended use of the site." (70.2).

Adhering to this standard, the individual objectives of this VMP are:

- To maintain safe public ways;
- To ensure that all vegetation management operations are conducted in a safe, effective, regulatory compliant manner;
- To work towards achieving a long-term, low maintenance vegetation management program;
- To allow for unplanned tasks for which precautions are taken to utilize the correct treatment methods;
- To use certified, licensed and qualified vegetation management crews;
- To have a Department of Public Works (DPW) representative available to respond quickly to interactions with the public and/or government agencies;
- To perform an annual assessment of treatment methods, cost effectiveness, environmental effects, public safety and regulatory compliance;
- To maintain the flexibility necessary to accommodate unique situations and the need for more appropriate techniques as they arise within the regulatory framework of 333 CMR 11.00 (in accordance with new regulations and/or scientific advances).

Athol's VMP is a public document designed to be the principal source of information for state and municipal officials, and other interested parties about Athol's adherence to the regulatory standards set forth in 333 CMR 11.00. It also provides guidance to the qualified and licensed/certified individuals who perform the vegetation management treatment program.

3. IDENTIFICATION OF TARGET VEGETATION

Achieving a long-term, low maintenance vegetation management program requires the ability to identify incompatible plant species and to understand why they are targets. Incompatible vegetation along public ways poses a public nuisance and/or a safety risk to pedestrians or vehicles and interferes with the safe movement of goods and services and/or damages infrastructure.

Vegetation Posing a Risk to Safety

Vegetation that obstructs visibility or impedes movement along public ways poses a risk to public safety. M.G.L. Chapter 87, Section 5 authorizes tree wardens to control "all public shade trees, shrubs, and growths" along public ways. This includes woody plants, grasses, herbaceous species, and public nuisance vegetation as listed below. For example, any vegetation such as grape vines or tree branches that might obscure street signs.

Public Nuisance Vegetation

Public nuisance vegetation includes but is not limited to plant species growing along public ways that pose a health, safety, or environmental hazard. Poisonous, invasive, and other nuisance plants, pose a risk to safety and health because of heavy thorns, dense foliage and/or impenetrable stems; examples include, multi-flora rose, common and glossy buckthorn, Japanese knotweed, blackberries, barberry, and autumn olive.

Herbaceous Growth

In most instances, grass is a desirable plant species. Along the shoulders of roads, grass growth is often encouraged and maintained through mechanical mowing. However, in some instances, grasses and other herbaceous plants are targets in areas where they cause a safety risk or damage the integrity of the public ways. These instances include, but are not limited to, cracks in asphalt, along guiderails, within paved traffic islands, medians, on and between sidewalks and the adjacent curbing. Herbaceous and other broadleaf vegetation can also impair the stability of grassy areas by outcompeting the desirable grass species.

4. PUBLIC WAY INTEGRATED VEGETATION MANAGEMENT

> "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."*

The ANSI A300 standards (hereafter ANSI A300) defines IVM as:

"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" (80.7). At this level, IVM is a guide for all individuals involved in ROW or public ways vegetation management including, but not limited to town officials, the public, abutters and field staff. In other words, all levels are involved in the process.

The latest standard includes eight components to be used in a continuous circular decision-making process:

- Determine reasons for IVM
- Secure rights to use land (town public ways)
- Engage Stakeholders (town officials, abutters, the public, field staff, etc.)
- Establish objectives and plans (VMP)
- Determine tolerance levels and action thresholds
- Evaluation of site(s)
- Develop work specifications and write prescriptions
- Complete work
- Perform quality reviews and adjust program

The individual components of an IVM driven vegetation management program only work with the others. They are all part of both the decision and the treatment phases of IVM. Section 1.2.1 specifically allows for the use of excerpts from the standards but also calls for additional information and clarifications for all documents that include work specifications. In other words, the process of using IVM is the same for all IVM programs but the individual components and the items thereunder, are tailored to the types of rights-of-way being treated, location, the organization(s) or entities involved, and the incompatible vegetation. As a result, individually tailored IVM programs are well suited to deal with important items such as site sensitivity, the presence of endangered species, invasive species, safety, the public, the effectiveness of the program, etc.

ANSI 300A expands the classic definition of IVM to include the above pre-program decision-making steps from the management stage combination of methodologies and treatment cycles that depend on monitoring for long term control (last four steps in ANSI A300). Both approaches are part of a complete IVM program; the ANSI A300 encompasses both. To comply with 333 CMR 11.00 the Integrated Pest Management approach in this VMP applies cultural, physical, mechanical and chemical (herbicide) methods under a systematically structured IVM

*_333 CMR 11.00 Right of Way Management:_ Section 1.

program to control incompatible vegetation and where appropriate encourage compatible vegetation. Where all four methods come together in Figure 2 is long-term IVM, with a stress on "Management." Where all four methods come together is where they minimize the disadvantages and maximize the benefits of each. The integration of all four creates a well-balanced program that minimizes the negative impact on non-target organisms while controlling incompatible vegetation.

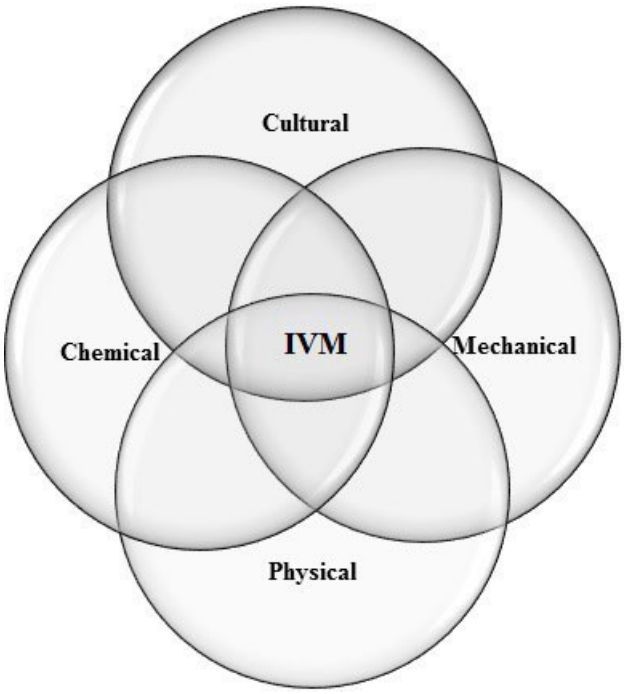

Figure 2: Public Way Integrated Vegetation Management

The cultural component of IVM may be the hardest component to pin down due to the many variations in how individuals and industries use the word "cultural" (including the right-of-way vegetation management industry that hold many strong opinions on the use of the word "cultural"). The ANSI A300 definition of "cultural method" is "Compatible land uses that preclude the growth of incompatible vegetation…." (80.5). the standard also uses the term "cultural resources" under section 74.1: "IVM management plans shall be established, and shall take into account: existing biological, ecological, cultural resources, economic factors, and applicable laws and regulation."

The ANSI A300 definitions of "cultural method" and "cultural resources" are a good starting point for understanding the cultural part of this VMP. "Cultural" means understanding the existing uses, requirements, and aesthetics of the landscape managed by the DPW. It is, therefore, part of the decision-making process as well as a passive treatment "method." Where the compatible use of the landscape—lawns, well maintained shrubs, farms, etc.—prevents incompatible vegetation from growing on the site, no direct treatment methods by the Town of Athol are required and are maintained by the landowner. Since this can change over the years, with a change of ownership and use of the land, these areas must remain in the decision-making process. Athol's "cultural" component, therefore, is understanding the cultural use

(used by humans) of the landscape as it informs where, when and how treatment methods are, or are not, applied to areas considered the responsibility of the DPW.

What does this mean at the time of treatment? In some places, plantings supported by the town or landowner(s) are appropriate and help control incompatible plants. Sometimes, while these helps reduce incompatible plant growth, they also need help from other IVM treatment methods for their upkeep. On the other hand, inappropriate plantings may cause safety concerns at intersections or reduce visibility due to encroachment.

Other areas such as roadways and sidewalks require vegetation free conditions. Grass and weeds on sidewalks and pavement, aside from being unsightly and creating tripping hazards, also damage and destroy concrete and pavement. A well designed IVM program recognizes and manages for instances in which these factors prescribe the treatment methods. In all cases, effective treatment methods are adapted or limited to suit the management situation.

One of the methods in Athol's program is physical controls which are actually a cultural method. They are the upkeep of general maintenance tasks that help prevent the establishment of vegetation. These include sealing cracks, general right-of-way repairs (i.e., repaving, installing new sidewalk, crack sealing, etc.), cleaning ditches and sweeping streets (see Section 5).

Mechanical controls will be discussed in detail in Section 6, but in brief, they include lawn mowing, brush mowing, selective pruning and hand cutting to remove or reduce target vegetation. For example, in many locations grass and herbaceous plants growing along the edge of the road with no man-made obstructions (e.g., guiderail, curbs). These areas may be effectively controlled by the use of lawn mowers, trimmers or other mechanical means.

The chemical control component of this IVM program is the use of herbicides to control incompatible vegetation that cannot or has not been controlled effectively or safely by either physical or mechanical methods alone (see Section 6). When appropriate, herbicide use will be minimized by timing applications to maximize control, by avoiding fixed application schedules and by using the most selective methods practical on a site-by-site basis. The main chemical controls are basal, cut stump treatments, and foliar applications which may include preemergence and postemergence herbicides.

Returning to the broader definition of IVM, to maximize the use and minimize the overuse of each method, an overarching component of Athol's IVM program is the continued monitoring of current and potential treatment areas. This allows the town to adapt the treatments to the conditions.

How does all of this work together? Using Oriental Bittersweet as an example: Oriental Bittersweet is an aggressive, fast-growing invasive vine that resprouts. It is overwhelming and is killing compatible trees and shrubs along the public ways in Massachusetts. In some areas, where it is out of control, there is little that can be done that can be considered a selective, or ideal IVM treatment. These areas require aggressive, and expensive measures to eventually recover their ecological integrity. In monitored areas, however, where the infestation has been

controlled, is still manageable, or the vines are small, a combination of mechanical and selective chemical treatment methods such as cutting the vines and treating the stumps can minimize the impact of both methods while effectively managing the vine.

In summary, the benefit of IVM is the ability to choose the most appropriate treatment method or combination of methods for each situation. This is only possible by using the cultural component of IVM in the process of deciding the direct methods of physical, mechanical, and chemical treatments. This is achieved through careful monitoring, landscape awareness, education, experience, and record keeping.

5. IVM PROTOCOL

The protocol for implementing the IVM program is as follows:

Monitoring*:* All public ways will be surveyed prior to any scheduled treatment program. Monitoring will be conducted by foot or by vehicle. Monitoring of areas may also result from public requests. Monitoring is a year-round protocol.

Maintenance: Roads will be cleaned using a street sweeper. Cracks in the asphalt and sidewalks and other defects will be repaired, and ditches will be cleaned.

Direct Vegetation Control Methods: The decision to use one or a combination of IVM techniques will take into consideration the cultural uses of the landscape. The direct IVM management tactics selected will control nuisance vegetation in the most environmentally responsible and efficient manner:

A. Mechanical Controls

1. Hand cutting
2. Mowing
3. Selective pruning

B. Chemical Controls

1. Postemergence Foliar applications
2. Preemergence applications
3. Cut stump treatments
4. Basal applications

Record Keeping: A log of surveyed areas will be kept for future planning and reference purposes. Areas maintained either through physical repair, mechanical or chemical control will be recorded by the DPW for at least 3 years.

6. VEGETATION MANAGEMENT CONTROL METHODS AND RATIONALE FOR USE

As the two IVM components directly used to control vegetation, the following section is a description of mechanical and chemical treatment methods. The method(s) chosen for a given vegetation problem are based on achieving a long-term, low-maintenance vegetation management program.

Mechanical Methods:

1. **Hand Cutting** involves cutting target species using hand saws, chainsaws 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 is used to remove hazard trees and to protect environmentally sensitive sites including sites where herbicide use is prohibited by regulation, including the removal of target vegetation greater than twelve feet tall. Hand cutting is also used on sites where terrain, target species size or sensitivity renders mowing impossible or impractical. Hand cutting may be used at any time of the year.

2. **Mowing** is the mechanical cutting of target vegetation using machines including push mowers or riding-mowers (lawn mowers), offset flail mowers, brush mowers, edgers and/or trimmers. Equipment selection is based on site, terrain, and target vegetation size. Mowing is used in most areas where terrain and target stem size permit efficient use of the equipment and in areas where herbicide use is prohibited by regulation. Mowing is the principal vegetation control measure on the shoulders of roads and grassy islands. Mowing may be used at any time of the year except when deep snow precludes operations.

3. **Selective Pruning** is the mechanical pruning of the tops or encroaching limbs of tall vegetation that 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.

4. **Removal of Trees and Brush** is the mechanical removal of hazard trees and shrubs which may cause a hazard to the public or sightline issues. The removals are completed using chainsaws in areas where a small number of removals need to be done, and large and/or specialized equipment would be utilized when a larger number of removals are required.

Chemical Methods (Herbicide Applications)

The following chemical methods utilize the lowest label rate for the target being controlled.

1. **Foliar Treatments** is the application of herbicides diluted with water to the leaves, stems, needles or blades of target vegetation. The equipment consists of a 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 (when leaves begin dropping).

    a. **Hand-held and backpack sprayers:** Foliar treatments are typically done using backpack, handheld 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** use truck, tractor and/or ATV mounted equipment that deliver 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. **Preemergence Treatments:** the use of preemergence herbicides using the same equipment described in the foliar treatments above. Preemergence applications are used at sites that require season long "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 plant 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, handheld 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 for 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 extremely 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.

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

7. JUSTIFICATION OF HERBICIDE USE AND SUMMARY OF CONTROL STRATEGIES

By following the IVM protocol listed in Section 5, physical and mechanical treatment methods manage many plants that interfere with foot and road traffic, visibility, and safety. Chemical controls are, however, necessary in management situations where topography, access, growth rate, certain species-specific factors, applicator safety, or environmental/social concerns limit the potential for control by physical or mechanical methods.

Athol will only use herbicides on the Massachusetts Department of Agriculture's (MDAR) *Sensitive Area Materials List.* The general characteristics of these herbicides are low toxicity to humans and other animal species; short term soil persistence; biodegradation of active ingredients; and low mobility. The specific herbicide formulations and mixtures will be listed in the Yearly Operational Plans (YOPs). The manufacturers' labels and Herbicide Fact Sheets approved by the MDAR will be included in the appendices of the YOPs.

Chemical controls are often the preferred method or only method to control plants that pose a health hazard for the technician in the field, either directly or due to their location. Poison ivy, for example, is extremely hazardous to handle; it is not managed either safely or effectively by mechanical means and can pose a serious threat to anyone who inhales the smoke if it is burned. Likewise, attempting to control curbside plants and weeds by pulling them or trimming them can put a technician in danger from traffic and is ineffective for long term control.

In situations where woody vegetation needs to be controlled, both mechanical and chemical treatments are useful methods; often in combination.

Herbicide applications, however, are used where mechanical control is not feasible due to location, and/or stem density of grasses and herbaceous growth. Although grass is more often a desirable vegetative cover along public ways, in select locations, it is both difficult and sometimes dangerous to remove by mechanical treatment methods. These areas include, but are not limited to, cracks in asphalt, along guiderails, paved traffic islands, sidewalks, and curbing. In these instances, grass is incompatible with the use and considered target vegetation.

Herbicide applications are the most cost effective treatment method to control nuisance vegetation and once established they are particularly difficult to control. Maintaining public ways by mechanical techniques can help control target vegetation by preventing its establishment, however, once established, hand-cutting this vegetation is less effective and more of a risk to the applicator.

Invasive plant species are difficult to control by mechanical means only. They are best treated by an IVM program that includes herbicides. This does not mean that mechanical methods are not an effective part of an IVM approach to treating invasive plant species. This is the advantage of IVM. For example, brush mowing dense colonies of invasive plants such as Japanese knotweed in the early summer makes the plant much easier to treat with herbicides in the early fall during its ideal treatment window. Mowing the plant keeps it short at the time of treatment allowing for easy walking through the area and allowing the applicator to effectively direct the herbicide onto the foliage of the Japanese knotweed.

Japanese knotweed is good example for the use of chemical controls. Japanese knotweed propagates primarily underground by rhizomes. Even a half inch rhizome floating down a river, or moved in topsoil will start an infestation. In other words, digging up and removing the soil both spreads the plant and does not guarantee its removal from the site. As a result, herbicides are the most effective way to stop its spread.

Poisonous plant species, such as poison ivy, are best controlled by herbicides. Poison ivy—low when young, tall vines when mature—is impossible to control through cultivation, hand pulling or roadside mowing operations. These climbing vines grow over stone walls, tree trunks and guiderails, making mechanical control out of the question for safety and economic reasons. In some locations, the judicious use of herbicides may also help develop herbaceous communities that out-compete poison ivy.

Woody vegetation over twelve feet in height and vines that cause safety issues for pedestrian or vehicles can and will be treated mechanically by pruning or ground cutting using hand tools or chainsaws. Sometimes, the stumps of woody vegetation will be physically removed, depending upon the species of plant and its proximity to other vegetation. Stumps may also be treated with an herbicide (CST) to prevent re-sprouting.

Small woody plants, under twelve feet in height growing along the road shoulder in an accessible location will usually be mowed or cut and treated with herbicides (CST). However, low volume foliar applications may be applied where woody plants or vines grow over obstacles, cannot be hand cut and chipped, are resistant to control by mechanical means or where the target vegetation grows very rapidly.

Herbicides are a vital component of Athol's IVM program as there are areas where they are the best choice to control vegetation effectively, safely and with less frequency because of their ability to control the whole plant including the roots. For example, some larger weeds growing in sidewalks hold a potential for causing trips or falls and on a larger scale can damage infrastructure through their root systems.

In summary, not only will Athol monitor its vegetation it will also monitor its IVM program. Records are kept regarding which treatments are applied to which sites. This information will be regularly reassessed so treatment prescriptions may be altered as the conditions at the various sites change over time. The plan will also maintain the flexibility necessary to accommodate unique situations and the need for more appropriate techniques as the industry changes. Athol's IVM has been difficult to monitor over the previous 5 year period of the VMP due to lack of preemergence herbicides on the sensitive materials list and has had to rely on postemergence herbicides. The use of the postemergence herbicides does not control the weed seeds in the soil. The resulting effect has been more weeds present within these treatment sites.

8. DEFINITION, IDENTIFICATION AND TREATMENT OF SENSITIVE AREAS

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

Surface Waters:

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

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 1: CONTROL STRATEGIES FOR SENSITIVE AREAS

Table Compiled by Jeffrey M. Taylor, Vegetation Control Service, Inc.

Sensitive Area	No-Spray or Limited Spray Areas (feet)	Control Method	Time Limits Between Treatment(s)
Public Ground Water Supplies	400'	Mechanical Only	None
Primary Recharge Area	Designated buffer zone or 1/2-mile radius	Mechanical, Approved Herbicides*	24 months
Public Surface Water Supplies (Class A & Class B)	100'	Mechanical Only	None
	100'-400'	Approved Herbicides	24 months
Tributary to Class A Water Source, within 400' upstream of water source	100'	Mechanical Only	None
	100'-400'	Approved Herbicides	24 months
Tributary to Class A Water Source, greater than 400' upstream of water source	10'	Mechanical Only	None
	10'-200'	Approved Herbicides	24 months
Class B Drinking Water Intake, within 400' upstream of intake	100'	Mechanical Only	None
	100'-200'	Approved Herbicides	24 months
Private Drinking Water Supplies	50'	Mechanical Only	None
	50'-100'	Approved Herbicides	24 months
Surface Waters	10'	Mechanical Only	None
	10'-100'	Approved Herbicides	12 months
Rivers	10' from the mean annual high-water line	Mechanical Only	None
	10'-200'	Approved Herbicides	12 months
Wetlands	10'	Mechanical Only	None
	100' or with approved Wetlands Determination 10'-100' [per 310 CMR 0.05(3)(a) & 310 CMR 0.03(6)(b)][#]	Low-pressure Foliar, CST, Basal, Approved Herbicides	24 months
Inhabited Areas	100'	Approved Herbicides	12 months
Agricultural Area (Crops, Fruits, Pastures)	100'	Approved 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 approval	
Priority Habitat	No treatment outside the 4-foot paved road exemption without approval of the Natural Heritage Endangered Species Program of the Massachusetts Division of Fisheries and Wildlife (NHESP)		

*Massachusetts approved herbicides for sensitive sites

Identification Methods

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.

The individuals assigned the task of identifying and treating sensitive areas in the field will use the appropriate sources and methods from the following list:

- 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; therefore, they 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.

Priority Habitat of State-Listed Species

321 CMR 10.14(8) Massachusetts Endangered Species Act Regulations, Part II, exempts road maintenance from the permit process under the following condition:

> [321 CMR 10.14(8)] the maintenance, repair or replacement, but not widening, of existing paved roads, shoulder repair that does not exceed four feet from an existing travel lane, paved driveways, and paved parking areas, but not including parking areas on barrier beaches, coastal beaches, coastal dunes, or salt marshes, as defined by the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40 and 310 CMR 10.00), and not including actions that are likely to result in changes in storm water drainage….

If Athol needs to treat areas along paved roadways outside of the 4-foot limit or spot treat poison ivy in known Priority Habitats, a copy of the YOP will be sent for approval to the NHESP.

9. OPERATIONAL GUIDELINES RELATIVE TO HERBICIDE USE

Regulatory Restrictions

- Follow the restrictions of all applicable state and federal regulations;
- Follow the guidelines and requirements in this VMP and the YOP's;
- Pesticide applicators must hold a valid pesticide license from the MDAR;
- All application crews must be supervised by an individual with a Category 40 pesticide license;
- Pesticide applicators will keep the appropriate records according to state and federal regulations that at a minimum include:
    - Date, name and address of vegetation management contractor(s)
    - Identification of site or work area
    - List of crew members
    - Type of equipment and hours used, both mechanical and chemical
    - Method of application and description of target vegetation
    - Amount, concentration, product name of herbicide(s), adjuvants and dilutants (EPA registration numbers must be on file)
    - Weather conditions
    - Notation of any unusual conditions or incidents, including public inquiries;
- Foliar treatments will not be made to target vegetation that exceeds twelve feet in height.

Rain

- No herbicide applications will be conducted during periods of moderate or heavy rainfall.
- Foliar and preemergence applications are effective in light mist, however measurable rainfall that creates leaf runoff will wash the herbicide off target vegetation, therefore, if foliar and preemergence applications are interrupted by unexpected rainfall, the treatment will not resume until the rain ends and active leaf runoff ceases.
- No CST or basal applications during measurable precipitation events.
- CST or basal applications interrupted by measurable rainfall will not resume until precipitation has ceased.

Wind

Excessive wind can create drifting during foliar and preemergence applications and significant herbicide drift can cause damage to desirable vegetation on or off the public ways. CST and basal applications, on the other hand, are much less affected by wind because they are applied in such a proximity to the ground.

To minimize off-target drift, during foliar and preemergence applications, the applicator will comply with the following restrictions:

- During periods of wind strong enough to bend the tops of the main stems of trees on the public ways, the applicator will constantly observe the application to prevent movement of the herbicide beyond the target area. The application will stop immediately if the

applicator observes herbicide moving off target, until the wind subsides enough to permit further applications.

- All herbicide mixes will contain drift-retardant agents per the drift retardant agent label. In moderate wind conditions, as per label recommendations, more drift retardant may be added, at the discretion of the applicator, to control herbicide drift.

Equipment Calibration

- Foliar and preemergence application equipment will be calibrated at the beginning of the season, and as necessary during the season with changes to chemical mixes, treatment types, spray wands/tips, prior to touch-up application treatment(s), and in accordance with manufacturer's recommendations.
- Foliar application equipment will be calibrated to maintain pressures not exceeding sixty psi at the nozzle.
- Cut stump treatment squirt bottle applicators or hand pump sprayers will be adjusted to deliver the herbicide solution to the target zone.

General Guidelines

- All mixing and loading of herbicides will be conducted at the DPW's or contractor's central facility.
- Proper Personal Protective Equipment (PPE) will be worn according to the Product Label(s)
- Mix only the estimated amount of herbicide necessary to carry out the vegetation control application, based on monitoring results to ensure that there will be no waste and minimize potential problems.
- The vehicles carrying out the spray operations will be equipped with appropriate spill kits including a bag of adsorbent material, activated charcoal, leak-proof containers, a broom and a shovel in case of minor spills.
- A clipboard log of the herbicides on the vehicle will be kept on the vehicle.
- Herbicide labels, fact sheets, the VMP, current YOP and *Herbicide Spill Check List* (Appendix 6) will be on-site.

10. ALTERNATIVE LAND USE PROVISIONS

At this time, Athol does not offer Alternative Land Use provisions under 333 CMR 11.05(2)(i), except where abutters maintain their own vegetation. Since the treatment areas are located either in downtown or suburban neighborhoods, there is no need for alternative land use provisions. For example, a common practice of abutters to roadways is to mow and maintain road shoulders. In this instance, the monitoring program would reveal that the area does not warrant vegetation control.

11. REMEDIAL PLAN TO ADDRESS SPILLS AND RELATED ACCIDENTS

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 6: *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 absorption clay or other absorbative 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 leakproof 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 Bureau.

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 an 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 6
- 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	Main Office: (888) 304-1133 Central Region: (508) 792-7650	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
Massachusetts State Police, Athol Barracks	(978) 249-2694	Framingham, after hours number
Chemtrec	(800) 424-9300	
Clean Harbors	(800) OIL-TANK	
Pesticide Hotline	(800) 858-7378	PST: 6:30 am-4:30 pm, web: www.NPIC.orst.edu

Table 5: Town of Athol Department of Public work contact in case of a spill or accident:

Athol Fire/ Police Department	911
Athol Health Agent	978-721-8450
Athol Public Works	978-721-8448

12: THE QUALIFICATIONS OF THE INDIVIDUALS SUPERVISING, DEVELOPING, AND SUBMITTING THE VMP

A. Individual Supervising the VMP:

Dick Kilhart
Superintendent
Department of Public Works
584 Main Street
Athol, MA 01331
(978) 249-4542

B. Individuals who wrote and developed the VMP:

Andrew S. Powers
Vegetation Management Specialist
Vegetation Control Service, Inc.
2342 Main Street
Athol, Massachusetts 01331

Mr. Powers' qualifications extend from his work experience in the field of herbicide application, crew management, and permitting and consulting:

Mr. Powers' holds B.S. in Forest Management from the University of New Hampshire. He has worked full time since 1998 for Vegetation Control Service, Inc., a consulting, and service company that provides vegetation management programs for utilities, government agencies, municipalities, private business and landowners throughout New England and New York. He currently holds supervisory level pesticide certifications in all New England states and is an ISA Certified Arborist. His experience includes both field and administrative experience in rights-of-way and industrial weed control programs. Since 2010, he has written or co-authored Vegetation Management Plans for utilities and municipalities both in Massachusetts and throughout New England.

APPENDIX 1:

333 CMR 11.00 RIGHTS OF WAY MANAGEMENT REGULATIONS

APPENDIX 2:

MGL 132B MASSACHUSETTS PESTICIDE CONTROL ACT

APPENDIX 3:

CHAPTER 85 OF THE ACTS OF 2000, SECTION 10

APPENDIX 4:
TREATMENT NOTIFICATION PROCESS PER 333 CMR 11.06-11.07

Appendix 4: TREATMENT NOTIFICATION PROCESS PER 333 CMR 11.06-11.07

A VMP serves as a guiding document for Athol's IVM program. In the process of planning herbicide applications for any given year within the five-year period of the VMP, Athol will also fulfill the requirements in 333 CMR 11.06, *Yearly Operational Plan (YOP)* and 11.07, *Public Notification* (See Appendix 1). No herbicide applications may occur without these additional actions, completed in the appropriate mandated periods.

Following the requirements in 333 CMR 11.06, a YOP describes and locates the herbicide application program for the current year, including details of potential areas of retreatment ("touch-up") from the past year. The YOP will be submitted to the appropriate agencies and officials, along with a copy of the Environmental Monitor Notice (EMN), sent via certified return receipt or within the town, hand delivered with a sign off sheet, allowing for the 45-day review period before receiving approval from the MDAR, Pesticide Bureau. The 45-day review countdown starts upon receipt of the YOP by the appropriate agencies and officials. The YOP may be sent out in hard copy or posted online. If posted online, a written notice must be sent out via certified return receipt (or hand delivered…) along with the EMN, with notice that a hard copy will be made available upon request.

Following the requirements in 333 CMR 11.07, additional notice must be sent to the appropriate agencies and officials, at least 21 days before herbicide applications may begin, containing additional details about the program including the approximate treatment dates. This notice may run concurrently with the 45-day review period and be sent in the same envelope. It must also be sent via certified return receipt or be hand delivered within the town. Additionally, at least 48 hours before herbicide applications commence, a 4x5 notice must be published in the local section of a paper of local/regional circulation.

The agencies and officials included in the notification and/or review process include

Commonwealth of Massachusetts Agencies:

1. MDAR, Pesticide Division (YOP, 21 Day Notice, EMN, Ad-copy).

If applicable the YOP is sent to:

1. Natural Heritage Endangered Species Program of the Massachusetts Division of Fisheries and Wildlife (NHESP)
2. Massachusetts Water Resource Authority
3. Department of Conservation and Recreation (DCR).

Town Officials that receive the YOP, 21 Day Notice and EMN:

1. Chief Elected Official
2. Conservation Commission
3. Board of Health
4. Municipal Public Water Supplier.

Other:

1. A YOP is a public document and must be made accessible either online or in hard copy to anyone who requests access. A copy of the YOP is available online on the Town of Athol – Public Works Page (Public Works Town of Athol MA) and on the MDAR Rights of Way Vegetation Management site (Rights of Way Vegetation Management - Mass.gov)
2. DEP defined Public Water Suppliers are sent a one-page letter under 333 CMR 11.06 detailing how they can request information on the program

APPENDIX 5:
HERBICIDE SPILL CHECKLIST

HERBICIDE SPILL CHECK LIST

SPILLS (Spills of reportable quantity of material): FOLLOW STEPS 1-10
NON-REPORTABLE SPILLS: FOLLOW STEPS 1, 2, 3, 4, 7, 8, 9, 10, & 11 as appropriate and contact the Athol representative.

Order	ACTION		Done (√)
1	Use all PPE as directed by product label or 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:		
	Massachusetts MDAR, Pesticide Board	(617) 626-1700	
	Massachusetts Department of Environmental Protection, Emergency Response Section	Main Office: (888) 304-1133	
		Central Region: (508) 792-7650	
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	
	Athol Representative: Dick Kilhart	(978) 721-8448	
	Product manufacturer(s)		
	1	1	
	2	2	
	3	3	
	Chemtrec	(800) 424-9300	
	additional emergency personnel		
	If there is any doubt as to who should be notified, contact State Police, Athol Barracks	(978) 249-2694	
7	Remain at the scene to provide information and assistance to responding emergency clean-up crews		
8	Refer to the various sources of information related to handling and cleanup of spilled product		
9	If possible, complete the process of “soaking up” with absorbent materials		
10	Sweep or shovel contaminated products and soil into leak proof containers for proper disposal at approved location		
11	Spread activated charcoal over spill area to inactivate any residual herbicide		