

TOWN OF ATHOL
FIVE YEAR VEGETATION MANAGEMENT PLAN
2010-2014



Submitted by:
Town of Athol Department of Public Works

Prepared by:
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3/4/2010

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1. INTRODUCTION

The purpose of this Vegetation Management Plan (VMP) is to establish a five-year plan to control vegetation along roads, highways and trails (“public ways”) in the Town of Athol in compliance with Rights of Way Management regulations, 333 CMR 11.00 (See Appendix 1). This VMP implements an Integrated Vegetation Management (IVM) program that considers and utilizes all methods of vegetation control as appropriate. Herbicides will be utilized where safety, effective target vegetation control or environmental concerns indicate the appropriateness of the choice. Athol’s VMP also takes into account other applicable state and federal laws that regulate the management of public roadways and trails.

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 relatively 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.

2. GENERAL STATEMENT OF GOALS AND OBJECTIVES

Vegetation management along public ways is necessary to control unwanted vegetation that poses a public nuisance and creates traffic and pedestrian hazards. The operational goal of this VMP is to ensure that vegetation management practices along public ways are conducted in an effective and environmentally sound manner. To accomplish this goal, managers will apply the protocol described in Athol's integrated vegetation management (IVM) program (Section 4). The primary goal of the IVM program is identifying target vegetation, ensuring appropriate vegetation control through the use of environmentally sensitive control techniques, and implementing an annual monitoring protocol.

The purpose of this VMP is to provide a basic source of information for state and municipal officials and any interested parties. It will also provide technical guidance to qualified and appropriately licensed and certified individuals who will physically carry out the vegetation management treatment program.

For clarity, the following is a list of individual goals and objectives:

- To maintain safe public ways
- To ensure that all vegetation management operations are conducted in a safe, effective manner in accordance with federal and state laws, regulations, and permit conditions
- To achieve a long term, low maintenance vegetation management program
- To use physical maintenance activities to reduce the need for intensive vegetation control
- To use mechanical control techniques on vegetation that cannot, should not, or are more effectively managed without herbicides
- To use herbicide treatments when necessary to achieve vegetation management goals
- To remove trees or limbs adjacent to the public ways that present an immediate hazardous condition to the public
- To cut or mow to protect environmentally *sensitive areas*
- To allow for unplanned tasks for which all precautions are taken to utilize the correct treatment methods
- To use appropriately certified and qualified individuals to implement our vegetation management program
- To have a Department of Public Works (DPW) representative respond quickly to any questions or complaints from the public and/or government agencies that relate to right-of-way vegetation management
- To perform an annual review of the program to assess treatment and 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 (in accordance with new regulations and/or scientific advances).

3. IDENTIFICATION OF TARGET VEGETATION

Target Vegetation:

Vegetation that poses a public nuisance and/or poses a risk to pedestrian or vehicle safety.

To understand the necessity for the control of vegetation along public ways, it is important to identify which plant species are target vegetation and understand why they are targets. Overall, target vegetation along public ways is limited, to vegetation that poses a public nuisance and/or poses a safety risk to pedestrian or vehicular safety and that interferes with the safe movement of goods and services through the public right-of-way.

Nuisance Grass and Herbaceous Growth

In most instances grass is a desirable plant species. Along the shoulders of roads, grass growth is encouraged and maintained through mechanical mowing. However, in some instances, grasses and other herbaceous plants can be identified as targets in areas where they cause a safety risk. These areas include, but are not limited to, cracks in asphalt, along guardrails, within paved traffic islands, or on and between sidewalks and the adjacent curbing. Herbaceous and other broadleaf vegetation can also harm the stability of grassy areas by out-competing the desirable grass species.

Public Nuisance Vegetation

Public nuisance vegetation includes, but is not limited to poisonous and noxious plant species growing along public ways that pose a health hazard.

* Noxious vegetation, which includes invasive plants, poses a risk to safety and health because of heavy thorns, dense foliage and/or impenetrable stems; examples include but are not limited to, Multi-floral Rose, Common and Glossy Buckthorn, and Blackberries. Although not the only target species of concern, Poison Ivy comprises the overwhelming majority of poisonous plant communities along public ways that require control.

Vegetation Posing a Risk to Safety

Vegetation that hampers visibility or impedes movement along public ways often poses a risk to public safety. M.G.L. Chapter 87, Section 5 authorizes tree wardens to have control of “all public shade trees, shrubs, and growths” along public ways. This includes woody plant species and invasive plant species. A short list of examples includes all tree species considered “street trees,” all shrubs, vines and more specifically, invasive species, such as Autumn Olive, Japanese Knotweed, Bittersweet and Multi-floral Rose.

* “NOXIOUS WEED.—The term “noxious weed” means any plant or plant product that can directly or indirectly injure or cause damage to crops (including nursery stock or plant products), livestock, poultry, or other interests of agriculture, irrigation, navigation, the natural resources of the United States, the public health, or the environment.” (PUBLIC LAW 106–224—JUNE 20, 2000, TITLE IV—PLANT PROTECTION ACT).

4. PUBLIC WAY INTEGRATED VEGETATION MANAGEMENT

Public Way Integrated Vegetation Management:

A combination of direct physical, mechanical and chemical controls that manages vegetation and takes into consideration the cultural use of the landscape.

An Integrated Vegetation Management program on public ways is a combination of cultural, physical, mechanical, and chemical management techniques that control undesirable vegetation in an ecologically sound manner. This program is designed to maximize control of undesirable vegetation while minimizing any potential impact to the environment.

The cultural components of this IVM program are a combination of monitoring, record keeping, plantings and the cultural use of the landscape for economic, agricultural, social and recreational purposes. Monitoring and record keeping are administrative components and when successfully managed, result in economic, social and recreational benefits. The second part of the cultural component is recognizing and managing instances in which landscape uses prescribe the IVM techniques and effective control methods are adapted or limited to suit the management situation. Examples of such landscape uses include recreational, inhabited or agricultural areas. These areas do not preclude the use of chemical and mechanical controls, instead these landscapes may limit or alter the application of these control methods. For example, residential lawn care may remove the need to manage roadside vegetation, but target or nuisance vegetation may still obstruct signs and guide rails, and street trees may still need to be trimmed when they become a hazard. Planting of desirable vegetation can limit the opportunity for the establishment of undesirable vegetation.

The physical control components of this IVM program are the 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, etc.), use of ground cover where appropriate, cleaning ditches and sweeping streets.

The mechanical control components of this IVM program include the direct use of mowing, selective pruning and hand cutting to remove or reduce noxious or hazardous vegetation.

The chemical control component of this IVM program is the use of herbicides to control undesirable vegetation that cannot be controlled by either physical or mechanical methods alone. When appropriate, herbicide use will be minimized by timing applications to maximize control, and by avoiding fixed application schedules. The main chemical controls are cut stump treatments and low pressure foliar treatments which may include pre-emergent herbicides in the foliar mix. Two additional treatment methods that Athol considers as possible treatment methods in limited situations, are basal applications and a combination turf retardant/broadleaf weed control application. These would primarily be considered for areas such as—but not limited to—embankments or around obstructions that are difficult to mow and are therefore being colonized by target vegetation including invasive, noxious and poisonous plant species.

In summary, the benefit of Integrated Vegetation Management is the ability to choose the most appropriate treatment method or combination of methods for each situation. For example, the cultural component of this IVM program takes into consideration the role of public ways as recreational use zones. The role of open space is critical to residents as it offers increasingly rare opportunities for outdoor recreation, influences quality of life indicators, and helps foster a strong overall sense of place. Taking this cultural use of the landscape into account, noxious or poisonous plants adjacent to trails and other public ways will be controlled by using the most appropriate chemical control methods. As the safest and most effective control method in this instance, applying chemical controls to plants species such as Poison Ivy minimizes potentially harmful encounters for both the public and vegetation control personnel.

5. IVM PROTOCOL:

Taking into consideration all four components of Public Way IVM, 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.

Maintenance: Roads will be cleaned using a street sweeper. Cracking asphalt and sidewalks and other right-of-way defects will be repaired. Where appropriate, the use of ground cover will be encouraged to assist in the prevention of undesirable target vegetation growth.

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.

Control Methods: The decision to use one or a combination of vegetation control techniques will depend upon the site-specific situation. The management tactics selected will control nuisance vegetation in the most environmentally responsible and efficient manner:

A. Physical Controls

1. Sealing cracks
2. General right-of-way repairs
3. Use of ground cover where appropriate
4. Cleaning ditches
5. Street sweeping

B. Mechanical Controls

1. Selective pruning
2. Hand Cutting
3. Mowing

C. Chemical Controls

1. Cut stump treatments
2. Low pressure foliar treatments
3. Basal treatments
4. Pre-emergent treatments
5. Turf retardants/broadleaf weed control.

6. VEGETATION MANAGEMENT CONTROL METHODS AND RATIONALE FOR USE

The following section is a description of the direct vegetation management control methods involved in the mechanical and chemical components of Athol's IVM program as the physical and cultural components are either regular road maintenance tasks or part of the rationale for management decisions prior to treatments.

The mechanical and chemical method(s) chosen for a given vegetation problem will attempt to achieve a long term, low maintenance vegetation management program, scheduled on either an immediate necessity basis, or as appropriate to achieve an ecologically sound program.

Mechanical Methods:

1. **Hand Cutting:** the mechanical cutting of target species using hand saws, chain saws and brush saws. Target species are cut as close to the ground as practical with stump heights usually not exceeding three inches. Hand cutting is used to remove hazard trees, protect environmentally sensitive sites and remove target vegetation greater than twelve feet tall where herbicide use is prohibited by regulation. 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:** the mechanical cutting of target vegetation using machines including homeowner type push mowers, large ride-mowers, an offset flail mower, brush mowers, edgers and/or trimmers. Selection of specific equipment is based on terrain, target vegetation size and equipment availability. 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 principle 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:** the mechanical pruning of the tops or encroaching limbs of tall trees which may cause a hazard or hamper access to the public way. This trimming will be accomplished using aerial lifts mounted on trucks or tractors or, if terrain or obstructions prevent equipment access, by climbing crews. Selective pruning may be done at any time of the year and may provide a viable alternative to the removal of trees.

Chemical (Herbicide Applications) Methods

1. **Foliar Treatments:** the selective application of herbicides diluted in water, to the foliage of target vegetation. Two types of equipment for foliar treatments are used: Low volume and high volume. Both treatments use low pressure, below 60 psi at the nozzle, for applications. 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 off the trees.

- a. **Low volume foliar treatments** use a hand pump or motorized sprayer or squirt bottles. The herbicide solution is applied to lightly wet the target plant, not to the point of run-off. This technique is excellent for spot treatments, such as localized Poison Ivy infestations. It is not effective on tall, high density target vegetation.
 - b. **High volume foliar treatments** use truck or tractor mounted application equipment that delivers the herbicide solution through nozzles attached to a hose or boom-mounted equipment. The herbicide solution is sprayed to thoroughly wet the target vegetation using a water based herbicide mixture from a tank and pump on the application vehicle. 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 and on paved traffic islands. Usually, pre-emergent treatments are used in conjunction with foliar applications, unless the goal is to prevent the growth of vegetation in the spring, to reduce the amount of applied herbicides and applications. This method is used from the early spring to early fall.
3. **Anti-drift Adjuvants** are added to the mix or solution in all foliage and pre-emergent applications because they help reduce the potential exposure to non-target organisms, reduce the break-up of sprays into fine droplets and increase selectivity and herbicide deposition onto target plants.
4. **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 or a non-freezing agent and is ideally made to freshly cut stumps. Application equipment includes low-volume, backpack, hand-pump 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.
5. **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 main stem of target plants. Using a hand pump backpack unit, 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. For public way treatments it is primarily an

option for invasive species control. It can be used any time of year except when snow is too deep, in extremely wet weather and/or during spring sap flow.

6. **Plant Growth Regulators/Broadleaf Control (PGR):** the selective application of herbicides to slow down the growth of grasses and remove broadleaf plant species. The principal use of this treatment method in Athol is to control broadleaf plant species—many of which are invasive or nuisance plants—where they are out-competing desirable grasses despite regular mowing on sites such as road side embankments. PGR treatments have the advantage of controlling the target broadleaf species without damaging the desirable grass species. They are used in the same time frame as foliar treatments, using the same types of equipment.

7. JUSTIFICATION OF HERBICIDE USE AND SUMMARY OF CONTROL STRATEGIES

Vegetation management along public ways is necessary to control unwanted vegetation that poses a public nuisance, obstructs views and creates a traffic or pedestrian hazard. If following the IVM protocol listed in Section 6, physical and mechanical treatment methods control most plants that interfere with traffic, visibility and safety. Chemical controls are 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.

Chemical controls are often the preferred method or only method of control for plants which pose a health hazard for the technician in the field, either directly or as a function of location. Poison Ivy, for example, is extremely hazardous to handle, biologically resistant to mechanical removal and can pose a serious threat to anyone who inhales the smoke when 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.

Mowing will control most grasses, however, herbicide applications are used where mechanical control is not feasible due to location, stem density and/or height. Although grass is more often a desirable vegetative cover along public ways, in areas where it is a target, it is both difficult and sometime dangerous to remove by mechanical treatment methods. These areas include, but are not limited to, cracks in asphalt, along guardrails, paved traffic island and sidewalks and curbing. In these instances, grass can be identified as target vegetation.

Herbicide applications are the ideal treatment method to control nuisance vegetation. Once established, poisonous and noxious vegetation poses health and safety risks when control is attempted by mechanical treatment methods alone. While maintaining public ways by mowing can help control most noxious vegetation by preventing its establishment, once established, hand-cutting noxious and poisonous vegetation is less effective and more of a risk to the applicator than the use of herbicides.

In fact, poisonous plant species, such as Poison Ivy, cannot be effectively controlled by mowing. Due to the low growing nature of Poison Ivy, and the fact that it grows along stolons and reproduces both by fine and fibrous ribosomes as well as by berry, it is nearly impossible to control through cultivation, hand pulling or mowing at the height generally used in roadside mowing operations. Moreover, the climbing characteristics of this plant over stone walls, tree trunks and guardrails, make mechanical control out of the question for safety and economic reasons. In some locations, the judicious use of herbicides may help develop herbaceous communities that out-compete Poison Ivy and otherwise promote natural control of these plants.

Woody vegetation over twelve feet in height growing along the public ways and interfering with pedestrian or vehicle safety can be controlled by a variety of techniques. Pruning or ground cutting using hand tools or chain saws primarily controls large woody vegetation. The stumps of woody vegetation can be physically removed, depending upon the species of plant and its proximity to other vegetation, but these stumps may instead 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. However, low volume foliar applications may be applied where woody plants or vines grow over obstacles, impede the mowers, can't be hand cut and chipped, are resistant to control by mechanical means or where the target vegetation grows very rapidly.

Taking all of these factors into considerations, the following table is a reference for chemical control strategies organized by target plant species types; please note that the restrictions listed in Section 8, *Identification, Definition and Treatment of Sensitive Areas* apply to all control strategies:

Table 1: Summary of Control Strategies:

Target	Method	Details	Restrictions
Nuisance Vegetation	Low Volume and High Volume Foliar	Spot treatment using low volume method in most cases, unless extremely thick or (although rare) in locations where grasses and herbaceous growth are also being treated	Within 10 feet of the public way
Grasses & Herbaceous Growth	Mowing	Controls most sites; in no-spray <i>sensitive areas</i>	Topography, obstructions, density of growth
	Foliar	Spot treatment or in locations listed above	Where mowing is practical, in no-spray sensitive areas
	Pre-Emergent	Where season long vegetation control is most practical and season long vegetation free conditions need to be maintained	Where mowing is practical, in no-spray sensitive areas
Broadleaf Vegetation in Grassy Areas	PGR	To control broad leaf vegetation in grassy areas without damaging the desirable grass species	Sensitive Areas: no-chemical sensitive areas; limit spray sensitive areas unless using approved herbicides
Low Growing Woody	Mowing	Controls most sites; in no-spray <i>sensitive areas</i>	Topography, obstructions, density of growth
	Foliar	Where terrain prevent mechanical treatment methods; same as grasses and herbaceous growth; rapid resprouting species; invasive plant species	Where mowing is practical, in no-spray <i>sensitive areas</i>
	Hand Cutting	Where terrain prevent mowing; resprouting is not a concern; in no-	Where the safety of the operator is a factor

Target	Method	Details	Restrictions
Low Growing Woody		spray <i>sensitive areas</i>	
	CST	Where terrain prevents mowing; re-sprouting is a concern	Same as hand cutting; in no-spray <i>sensitive areas</i>
	Basal	Where terrain prevents mowing; where stem densities make hand cutting impractical; for invasive species	Same as hand cutting; in no-spray <i>sensitive areas</i>
Tall Growing Woody	Selective Trimming	Where the visibility or interference issues do not warrant removal; option for <i>sensitive areas</i>	Where removal is warranted; where operator safety issues limit access to the tree
	Foliar	Where terrain prevent mechanical treatment methods; same as grasses and herbaceous growth; rapid resprouting species; invasive plant species	Vegetation over twelve (12) feet tall; Where mowing is practical, in no-spray <i>sensitive areas</i>
	Hand Cutting	Where terrain or stump diameter prevents mowing; resprouting is not a concern; in no-spray <i>sensitive areas</i>	Where the safety of the operator is a factor
	CST	Where terrain prevent mowing; on species over twelve (12) feet tall that are capable of resprouting	Same as hand cutting; in no-spray <i>sensitive areas</i>
	Basal	Where terrain prevents mowing; where stem densities make hand cutting impractical; for invasive species	Species over twelve (12) feet tall; same as hand cutting; in no-spray <i>sensitive areas</i>

8. DEFINITION, IDENTIFICATION AND TREATMENT OF SENSITIVE AREAS

The general 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 larger, limited spray areas where herbicide use is permitted under certain conditions, these include general limited spray areas, and areas that require special treatment recommendations.

Treatment in the limited spray areas require the use of herbicides from the *Sensitive Area Materials List* available at: www.mass.gov/agr/pesticides/rightofway/index.htm and following the application restrictions in 333 CMR 11.04, including application at only the minimum labeled herbicide application rate for the control of target species. The general characteristics of herbicides included on the *Sensitive Area Materials List* are: low toxicity to humans and other animal species; short term soil persistence; biodegradation of active ingredients, and low soil mobility. The specific herbicide formulations and mixtures to be used in any given year will be listed in the Yearly Operational Plan (YOP) and the manufactures' labels and *Fact Sheets* will be included in the appendices of the YOP.

CONTROL STRATEGIES FOR SENSITIVE AREAS

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

Sensitive Area	Limited Spray and No-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	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, Recommended Herbicides	24 months
Inhabited Areas	100' (for high-pressure foliar only)	Recommended Herbicides	12 months
Agricultural Area (Crops, Fruits, Pastures)	100' (for high-pressure foliar only)	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 approval	
Priority Habitat	No treatment outside the 4 foot paved road exemption without approval of the Natural Heritage Endangered Species Program (NHESP)		

*Massachusetts recommended 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 when appropriate, marked according to all applicable restrictions listed in 333 CMR 11.00. Not readily identifiable in the field areas will likewise be treated and marked 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 and/or GIS mapping layers available through MassGIS
- Water Department, Department of Agricultural Resources (DAR) and Athol Board of Health maps and lists of identified private wells along the ROW
- Correspondence, meetings and input 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 advance point person 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 NHESP
- 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 and are in compliance with all applicable regulations.

Some *sensitive areas* are contained on the base USGS topographic maps such as applicable *wetland resource areas* defined in Massachusetts Department of Environmental Protection regulations (rivers, wetlands, etc.); the most current data available through MassGIS such as public water supplies and certified vernal pools, and any municipal and private data on 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.

As appropriate, *sensitive areas* will be identified and marked in the field by trained and experienced individuals.

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 road ways outside of the 4 foot limit or spot treat poison ivy along paths in known Priority Habitats, a copy of our YOP will be sent for approval to the Natural Heritage Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries and Wildlife.

9. OPERATIONAL GUIDELINES RELATIVE TO HERBICIDE USE

Regulatory Guidelines:

- Follow the restrictions of all applicable state and federal regulations
- Follow the guidelines in this VMP and YOP's
- Pesticide applicators must hold a valid pesticide certification or license from the Department of Agricultural Resources
- The applications must be supervised by a certified applicator
- 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 pre-emergent applications are effective in light mist, however measurable rainfall that creates leaf runoff will wash the herbicide off target vegetation, therefore, if foliar and pre-emergent applications are interrupted by unexpected rainfall, the treatment will not resume until the rain ends and active leaf runoff ceases
- No PGR applications during precipitation events
- 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 drift during foliar, pre-emergent and PGR 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 close proximity to the ground.

To minimize off-target drift, during foliar, pre-emergent and PGR 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 periodically observe the application to prevent significant movement of the herbicide. The application will stop immediately if the applicator can see the 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, pre-emergent and PGR application equipment will be calibrated at the beginning of the season, prior to touch-up application treatment(s), and in accordance with manufacturer's recommendations
- High volume foliar application equipment will be calibrated to maintain pressures not exceeding sixty pounds per square inch at the nozzle. Nozzles will be adjusted to apply a coarse spray pattern
- 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 central facility
- Only the amount of herbicide necessary to carry out the vegetation control, based on monitoring results, will ensure that there will be no waste and minimize potential problems
- The vehicles carrying the spray operations will be equipped with 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 5) will be carried on-site by the applicator(s).

10. TREATMENT NOTIFICATION PROCESS PER 333 CMR 11.06-11.07

The 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 time frame 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 time frames.

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 Department of Agricultural Resources, 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 the Athol Daily Times.

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

Commonwealth of Massachusetts Agencies:

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

If applicable the YOP is sent to:

1. NHESP (spell out)
2. Massachusetts Water Resource Authority
3. Department of Conservation and Recreation

Town of Athol 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.
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.

11. ALTERNATIVE LAND USE PROVISIONS

Agreements may be Established with Individuals, State, Federal or Municipal Agencies that would Minimize the need for Herbicide Applications, including the Rationale for Accepting or Denying any Reasonable Request made by an Individual.

Every effort will be given for alternative land use options. However, there are specific criteria to be met for adoption of alternative land use options. First, the alternative land use option must control the target vegetation in a similar manner to those listed in this VMP. 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. A written agreement would clearly specify that the DPW will not treat vegetation in these areas and outline the landowner's responsibilities for vegetation control.

12. 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 5: *Herbicide Spill Check List* shall be available on-site to the applicator). Until completely 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, such as granulars, 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. Any minor spill will be reported to the DAR Pesticide Bureau.

Massachusetts Department of Environmental Protection will be contacted when there is a spill of a regulated 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
- MSDS
- 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 3: Herbicide Manufacturers

MANUFACTURER	TELEPHONE NUMBER	SPECIAL INSTRUCTIONS
BASF Corporation	(800) 832-4357	
Dow Agro Sciences	(800) 992-5994	
E.I. du Pont de Nemours and Co.	(800) 441-3637	Medical Emergencies
Monsanto	(314) 694-4000	
NuFarm	(877) 325-1840	Medical Emergencies

Table 4: State Agencies

STATE AGENCY	TELEPHONE NUMBER	SPECIAL INSTRUCTIONS
DAR Pesticide Bureau	(617) 626-1700	A.S.A.P. (within 48 hours)
Massachusetts Department of Environmental Protection, Emergency Response Section	Main Office: (888) 304-1133	For emergencies involving reportable quantities of hazardous materials, call within 2 hours. Required info: City/town, Street address, Site name (if applicable), material, quantity released, environment impacted
	Western Region: (413) 784-1100	
Massachusetts Poison Information Centers	800-682-9211	for medical emergencies involving suspected or known pesticide poisoning symptoms

Table 5: Regional 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 6: Town of Athol contact(s) in the case of a spill or accident:

Athol Fire/ Police Dept.	911
Athol Health Agent	617-584-9714 cell 978-366-1553 pager
Athol Public Works	978-249-4542