

CITY OF ATTLEBORO



FIVE-YEAR VEGETATION MANAGEMENT PLAN 2019 – 2023

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1. INTRODUCTION

The Vegetation Management Plan (VMP) for the City of Attleboro 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.” In particular, this means roads, curbing, sidewalks, medians/traffic islands and bicycle paths (“public ways”). In compliance with 333 CMR 11.00, Attleboro is implementing an Integrated Vegetation Management (IVM) plan that incorporates regulatory and industry standards that account for safety, environmental concerns and effective target vegetation control. There are four components to Attleboro’s VPM. These will be utilized to achieve vegetation management in the safest and most successful manner. These components include cultural, physical, mechanical, and chemical (herbicide) practices and principles.

The City of Attleboro is located in Bristol County, Massachusetts about 10 miles west of Taunton and 39 miles south of Boston. In 1694, English settlers incorporated the land known as Attleborough into a town. Attleborough was then reincorporated as a city in 1914 and the “ugh” was dropped from the name. The city has a total area of 27.8 square miles with a population of approximately 44,000 residents. The city was once known as “the jewelry capital of the world”. Due to the influx of jewelry industry in the city, it has a very dense downtown area centralized around the former jewelry mills. The Ten Mile River runs through the center of Attleboro and is a focal point of many open space and recreational areas in the city. Some of these sites were once the home of former Jewelry mills, which once made up a large portion of the Ten Mile Rivers banks. There are two reservation areas, the Antony Lawrence Reservation Area and Coleman Reservation Area, as well as the Bungay River Conservation Area in the northern section of the city. The city not only maintains its many roadways and sidewalks, it also maintains its open space, which includes hiking trails, bike paths, and playgrounds. In order to ensure the aesthetics, safety and character of these, the vegetation along them must be properly managed.

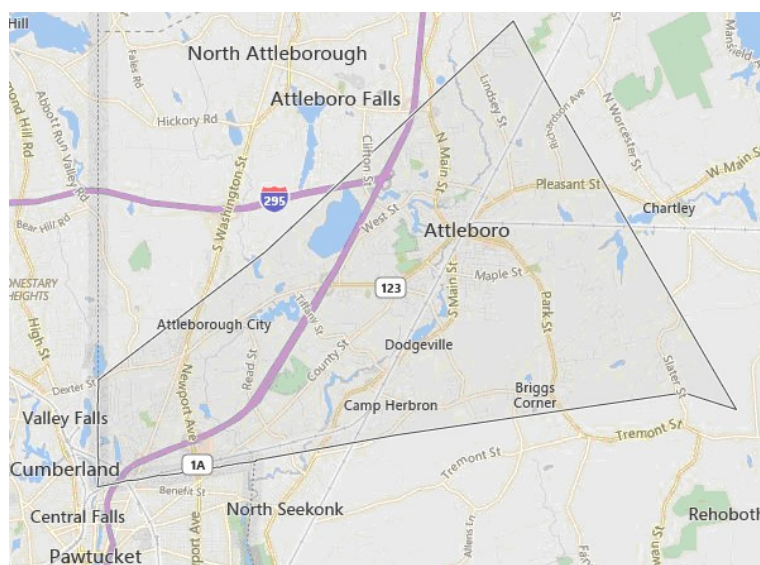


Figure 1: Attleboro

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 vegetation management practices along public ways are conducted in an effective and environmentally sound manner.

As a result, Attleboro is instituting an Integrated Vegetation Management (IVM) program that adheres to the parameters set in 333 CMR 11.00. Integrated Vegetation Management is a method used to reduce the need for pesticides, promote healthy ecosystems, and provide greater natural species diversity along rights-of-way and better control of invasive species. Control options for IVM include techniques such as biological, chemical, cultural, manual, and mechanical control. A combination of some or all of these techniques will help provide the best results in the safest and most cost effective manner.

Objectives of the VPM:

- 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 use certified, licensed and qualified vegetation management crews;
- To have a Department of Parks & Forestry (DPF) 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 allow for unplanned tasks for which all precautions are taken to utilize the correct treatment methods;
- 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).

The City of Attleboro's VMP is a public document designed to be the principle source of information for state and municipal officials, and other interested parties about Attleboro'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

TARGET VEGETATION:

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

It is important to identify which plant species are target vegetation and understand why they are targets in order to understand the necessity for the control of vegetation along public ways. Target vegetation will be defined as vegetation along public ways that poses a public nuisance, which includes vegetation classified as “invasive”. It also includes vegetation that poses a safety risk to pedestrian or vehicular safety by interfering with the safe movement of goods and services through the public right-of-way,

1. VEGETATION POSING A RISK TO SAFETY

Vegetation that obstructs visibility or impedes movement along public ways and 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 plant species, grass and herbaceous species of vegetation that might obscure street signs or vehicular view corridors such as bamboo, vines or tree branches.

2. NUISANCE GRASS AND HERBACEOUS GROWTH

In most instances, grass is a desirable plant species. Along the shoulders of roads, grass growth is generally 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. These areas 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 out-competing the desirable grass species.

3. 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. Native plant species with thorns or dense branching habits as well as poisonous vegetation are major targets. Poison Ivy, although not the only poisonous vegetation, consist of the majority of poisonous plant communities along public ways that require control.

o Invasive Vegetation

Invasive vegetation is classified as non-native species that have spread into native or minimally managed plant systems. Invasive plants usually have very few local diseases or pests to help control their spread. These invasive species spread quickly and thrive in disturbed conditions outcompeting native species. Specific target species include Japanese Knotweed (*Polygonum cuspidatum*), Multiflora Rose (*Rosa multiflora*), Oriental Bittersweet (*Celastrus orbiculatus*), Autumn Olive (*Eleagnus umbellata*), and Tree of Heaven (*Ailanthus altissima*).

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.

Vegetation management methods will include both chemical and non-chemical techniques where necessary. The IVM Program will be used to minimize herbicide use. Attleboro's IVM program on public ways will use a combination of cultural, physical, mechanical, and chemical management to control incompatible vegetation in an ecologically sound manner. This program is specifically designed to maximize control of undesirable vegetation while minimizing any potential impact to the environment by taking into account factors such as site sensitivity, endangered species, invasive species, public safety, and effectiveness.

All four components of Attleboro's IVM come together as shown in Figure 2 below:

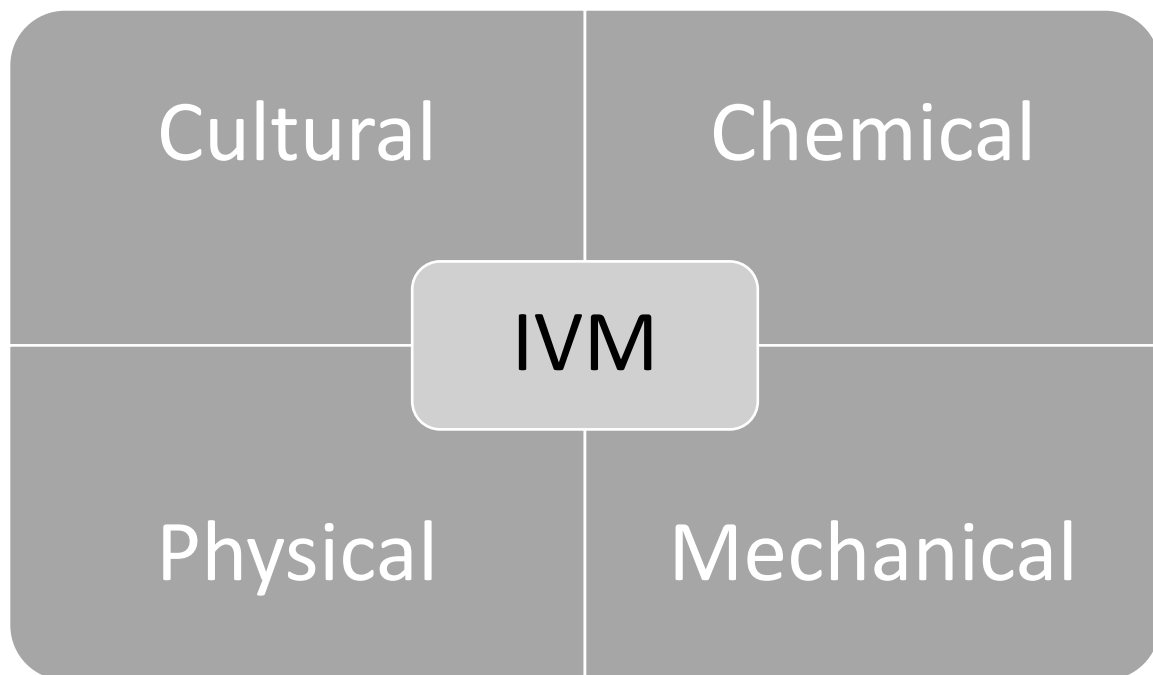


Figure 2: Public Way Integrated Vegetation Management

1. CULTURAL CONTROL

Cultural control in this VMP means understanding the uses, requirements, and aesthetics of different treatment areas in Attleboro. The first step in implementing an IVM program is understanding how and why the property in a designated treatment area is being used. In some circumstances, plantings are appropriate, but others, such as roadways and sidewalks, require minimal or no vegetation. Grass and weeds on sidewalks and pavement can create tripping hazards, damage, destroy concrete and pavement, and can be unsightly. Inappropriate plantings, such as tall evergreens at intersections, may cause safety concerns. An effective IVM program recognizes these instances and determines which treatment methods would be appropriate for each situation. Another aspect of cultural control would be the continued monitoring of current and potential treatment areas. This would allow the city to adapt to any change in treatment conditions that may occur. A prime example of this would be the continuous monitoring of ROW areas for poison ivy or invasive species.

2. PHYSICAL CONTROL

Physical control methods rely mainly of sustainable landscape methods and pavement maintenance.

Pavement Maintenance- Consists of sealing cracks and general ROW repairs such as repaving and installing new sidewalks. This also includes the practice of routine street sweeping in certain problem areas that generate sediment after heavy precipitation or construction.

Sustainable Landscapes- Techniques that include alternative methods for new development and reconstruction that minimize roadside maintenance and promote the active planting of native competing vegetation. This may include the use of planting specifications that require minimal maintenance, the installation of native vegetation to compete with undesirable plant life, and allowing private abutters to maintain the ROW where applicable.

3. MECHANICAL CONTROL

Mechanical control methods include hand cutting, mowing, or selective trimming.

Hand Cutting- Consists of the mechanical cutting of target vegetation using chain and brush saws. Target vegetation is cut as close to the ground as practical with heights typically not greater than three inches. Hand cutting is used in order to protect environmentally sensitive sites or on target vegetation where herbicide use is not permitted. Hand cutting is used on these sites where terrain, size, or sensitivity renders mowing impossible or impractical. This practice may be used at any time of year.

Mowing- Consists of the mechanical cutting of target vegetation using machines. Mechanical cutting may be performed with a variety of machines depending on the terrain,

area, target vegetation, and scope of the ROW area. These machines include: push and riding mowers, brush hogs, line trimmers, and large roadside boom mowers. Mowing shall be used in most areas where terrain and vegetation type and size enable efficient use of the equipment, especially in areas where herbicide use is prohibited by regulation. Mowing shall be the principle control method for vegetation on the shoulders of roads.

Selective Trimming- Consists of the mechanical pruning of encroaching limbs on trees that may hamper roadway access or view corridors. Trimming will be accomplished by the use of hydraulic bucket lifts with chain saws and pole saws.

4. *CHEMICAL CONTROL*

Chemical control methods involve foliar treatment and cut stump surface treatments.

Foliar Treatments- Involve the selective application of an herbicide diluted in water, to the foliage and stems of the target vegetation. High volume and low volume equipment is used for this application. Foliar treatments can be made by using ready-to-use spray bottles or backpack application equipment. The herbicide solution is applied to lightly wet the target plant. This technique has few limitations with the exception of reduced effectiveness on tall or high-density target vegetation. Foliar treatments using vehicle mounted application equipment that delivers herbicide at a high volume will not be used under the City of Attleboro's IVM protocol. Foliar treatments will not be used on hardwood target species and only be used on conifers below six feet in height and on grasses and herbaceous weeds. Foliar applications will take place when plants are in full leaf out and actively growing. They will be applied in accordance with the manufacturer's product label recommendations.

Cut Stem/ Stump Treatment- Consist of mechanical cutting of target species using chain saws or hand loppers, followed by herbicide treatment applied with a squirt bottle, a hand pump or backpack sprayer, or painted on the freshly cut surface. Cut stump/ stem application can be effective during the dormant period but may not be effective during times of sap flow.

5. *SUMMARY OF CONTROL STRATEGIES*

The benefit of IVM is the ability to choose the most appropriate treatment method or combination of methods for each situation. This is possible by using the cultural component of IVM in deciding the process of which methods are to be used. This is achieved through monitoring, awareness of the landscape, education, experience, and record keeping.

5. IVM PROTOCOL

Taking into consideration all four componets 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. Monitoring is a year round protocol.

Maintenance: Roads will be cleaned using a street sweeper. Cracks in 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
 - a. Hand Cutting
 - b. Mowing
 - c. Selective Pruning
- B. Chemical Controls
 - a. Foliar Applications
 - b. Pre-Emergent Applications
 - c. Cut Stump Treatments
 - d. 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 Department of Parks and Forestry for at least 3 years.

6. VEGETATION MANAGEMENT CONTROL METHODS & 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:** cutting target species using handsaws, chain saws and brush saws. Target species are cut as close to the ground as practical: the ideal stump height is three inches or less (when possible). Hand cutting 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.

Low Growth - Terrain prevents mowing and re-sprouting is not a concern.
- Option for sensitive areas.

Tall Growth - Terrain prevents mowing or not effective due to stump size.
- Used on species greater than 12 feet in height that will not sprout.
- Option for sensitive areas.

2. **Mowing:** the mechanical cutting of target vegetation using machines including push mowers, riding-mowers, offset flail mowers, brush mowers, edger's and/or string 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 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.

Grasses - Mowing can and will be used in most cases.

Low Growth - Mowing can be used in most cases.
- Can be an option for sensitive areas.

3. **Selective Pruning:** the mechanical pruning of the tops or encroaching limbs of tall vegetation, which may cause a hazard or hamper access. The equipment includes aerial lifts mounted on trucks or tractors or, if terrain or obstructions prevent equipment access, climbing crews. Selective pruning may be done at any time of the year and may provide a viable alternative to the removal of vegetation.

Tall Growth - Used in cases where visibility issues or interference does not warrant the removal of entire vegetation, can also be an option for sensitive areas.

Chemical (Herbicide Applications) Methods

1. **Foliar Treatments:** the application of herbicides diluted in water, to the leaves, stems, needles or blades of target vegetation. The equipment consists of backpack and vehicle mounted sprayers; both use low pressure at the nozzle per 333 CMR 11.02. Foliar applications take place when leaves are fully developed in the spring until early fall and the beginning of leaf abscission—i.e., when leaves begin dropping.

- a. **Hand-held and backpack sprayers:** hand pump or motorized backpack 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.

Poison Ivy - Must be growing within 10 feet of the roadway. Spot treatment will be made using low volume sprayers.

Grasses – Spot treatment of grass growing along guardrails or in cracks where mowing or cutting is not practical.

Low Growth – Terrain prevents mowing or hand cutting.

-- Used on rapid growing species. (i.e. Japanese Knotweed, bamboo)

- b. **Vehicle mounted sprayers** use truck; tractor and/or ATV mounted equipment that delivers the herbicide solution through nozzles attached to a hose or boom-mounted apparatus. This technique will not be used under Attleboro's IVM protocol.
2. **Pre-emergent Treatments:** the use of pre-emergent herbicides using the same equipment described in the foliar treatments above. Pre-emergent applications are used where season long vegetation control requires "vegetation-free conditions" such as along curbing, sidewalks, under guiderails/guardrails and on paved traffic islands. This method is used from the early spring to early fall.
 3. **Cut Stump Treatment (CST):** the mechanical cutting of target species followed by an herbicide treatment to the phloem and cambium tissue of the stumps. CST treatments prevent re-sprouts, thereby reducing the need to re-treat the same vegetation. The CST mixture is diluted in water, basal oil or a non-freezing agent and is ideally made to freshly cut stumps. Application equipment includes low-volume, backpack 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.

Tall Growth – Species greater than 12 feet in height that are capable of re-sprouting.

- Sites not appropriate to foliar treatments.

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 pump backpack, 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.

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

7. JUSTIFICATION OF HERBICIDE USE & SUMMARY OF CONTROL STRATEGIES

The City of Attleboro's IVM focuses on the minimization of herbicide use within ROW's. Vegetation management along public ways is necessary to control unwanted vegetation that poses a public nuisance, obstructs views and creates traffic of pedestrian hazards. By following the proposed vegetation management methods and IVM protocol discussed in the plan, physical and mechanical treatment will be the main method of control for vegetation that interferes with traffic, visibility, and safety. Chemical controls are necessary to manage vegetation in situations where topography, access, growth rate, plant species, worker safety, and environmental concerns limit the amount of control that can be achieved with physical or mechanical methods.

To begin with, Attleboro will only use herbicides on the Massachusetts Department of Agricultural Resources (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 Department of Agricultural Resources 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; biologically resistant to mechanical removal 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.

Mowing controls most grasses. Herbicide applications, however, 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 sometimes dangerous to remove by mechanical treatment methods. These areas include, but are not limited to, cracks in asphalt, along guiderails, paved traffic islands 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, noxious and invasive vegetation are particularly difficult to control. Maintaining public ways by mechanical techniques can help control noxious vegetation by preventing its establishment, however, once established, hand-cutting noxious vegetation is less effective and more of a risk to the applicator than the use of herbicides.

Invasive vegetation is difficult to control. For example, Japanese Knotweed propagates primarily underground by rhizomes. Even, a half-inch rhizome floating down a river or moved in top soil 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.

This does not mean that mechanical methods are not an effective part of an IVM approach to treating Japanese Knotweed; this is the advantage of IVM. Mowing 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 knotweed and nowhere else.

Poisonous plant species, such as poison ivy, are another noxious species best controlled by herbicides. Poison ivy—low when young, tall vines when mature—grows along and reproduces both by fine and fibrous rhizomes as well as by berries, and is, therefore, nearly impossible to control through cultivation, hand pulling or roadside mowing operations. These climbing vines grow over stone walls, tree trunks and guardrails, 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 that causes 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 a 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 possibly CST'ed. However, low volume foliar applications may be applied where woody plants or vines grow over obstacles, can't 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 Attleboro'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, weeds growing in sidewalks hold a significant potential for causing trips or falls and on a larger scale damage infrastructure through their root systems. There is also a legitimate aesthetic value to this treatment. Adventitious vegetation growth (i.e., unplanted/unplanned) is not part of the aesthetic design of sidewalks. To fulfill the requirements of 333 CMR 11.01(2), this plan must improve the cultural value of the sites being treated while taking into account cultural beliefs about the treatment methods: "...taking into account the economic, social and environmental costs and benefits of the use of any pesticide."

In summary, not only will Attleboro 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.

8. DEFINITION, IDENTIFICATION AND TREATMENT OF SENSITIVE AREAS

Sensitive areas are defined and regulated by 333 CMR 11.04 as areas within ROWs in which public health and environmental concerns warrant special protection to minimize the risks of unreasonable adverse effects of herbicides. Protecting these areas is accomplished by defining specific sensitive areas and establishing treatment restrictions within the borders based on the sensitivity of each individual site. Using these methods will minimize any unreasonable adverse impacts within that particular area. These areas include public groundwater resources, associated surface water bodies, wetlands, and agricultural areas just to name a few.

A complete list of 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 Resources
- 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 any herbicide use is prohibited, and larger, limited spray areas where herbicide use is permitted under certain conditions. Treatment in the limited spray areas require the use of herbicides from the Sensitive Area Materials List and following the application restrictions in 333 CMR 11.04, including applications at no more than the minimum labeled herbicide application rate for the control of the target species.

Sensitive Area Materials List can be found at:

<http://www.mass.gov/eea/agencies/agr/pesticides/rights-of-way-sensitive-area-materials-list.html>

TABLE 1: CONTROL STRATEGIES FOR SENSITIVE AREAS (333 CMR 11,04)

Sensitive Area	Limited Spray or No-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 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

Sensitive Area	Limited Spray or No-Spray Areas (feet)	Control Method	Time Limits Between Treatment(s)
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)		

Identification Methods

Sensitive areas are described by two terms in 333 CMR 11.04 to help guide their complex identification in the field. Sensitive areas can either be deemed “Readily identifiable in the field” and “Not readily identifiable in the field”.

Readily Identifiable in the Field- Areas will be treated, identified, and marked where appropriate according to all applicable restrictions listed in 333 CMR 11.00.

Not Readily Identifiable in the Field- Areas will be marked and treated appropriately, but 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, MDAR, and Attleboro 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 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.

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.

The City of Attleboro Conservation Department will complete a Wetlands Determination allowing herbicide treatments to within 10 feet of wetlands as appropriate. Sensitive areas will be identified and marked in the field by trained and experienced individuals.

Priority Habitat of State-Listed Species

According to 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 the City of Attleboro 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 of the Massachusetts Division of Fisheries and Wildlife.

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 Department of Agricultural Resources;
- 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 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 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 and pre-emergent 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 and pre-emergent applications, the applicator will comply with the following restrictions:

- Foliar herbicide applications will not be applied when wind speeds are such to increase the chance of off target 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, the control herbicide drift.

Equipment Calibration

- Foliar and pre-emergent 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 60 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 Parks & Forestry or contractors central facility.
- Mix only the estimated amount of herbicide necessary to carry out the vegetation control, based on monitoring results to ensure that there will be no waste and minimize potential problems.
- The vehicles carrying the spray operations will be equipped with appropriate spill kits including a bag of "Speedy Dry" adsorbent material, activated charcoal, leak-proof containers, a broom and a shovel in case of minor spills.
- A three ring binder 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 on-site.

10. ALTERNATIVE LAND USE PROVISIONS

At this time, Attleboro does not offer Alternative Land Use provisions under 333 CMR 11.05(2) (l), except where abutters maintain their own vegetation. A common example of this occurrence is the practice of abutters to roadways maintaining road shoulders by mowing. The monitoring program would identify these areas and warrant that they do not need vegetation control. The primary target vegetation and treatment areas in Attleboro's ROW are invasive vegetation, poison ivy, and weeds along curbing, guardrails, traffic islands, cracks in the pavement, and sidewalks. The city has determined that to effectively and safely control these species; it will require a citywide herbicide program, run by both private contractors and the Department of Parks and Forestry. The monitoring program that will be established will determine areas that do not need any 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 5: *Herbicide Spill Check List* shall be available on-site to the applicator). Until clean, the spill area will be protected by placing barriers, flagging or crewmembers 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 such as "Speedy Dry". The adsorptive material will then be placed into leak proof containers, removed from the site and disposed of properly. Dry herbicides will be swept up or shoveled up directly into leak proof containers for proper disposal. When applicable, all contaminated soil will be placed in leak proof containers, removed from the site and disposed of properly. When applicable, activated charcoal will be incorporated into the soil at the spill location at a rate of several pounds per thousand square feet to inactivate any herbicide residue. Reportable spills will be reported to the DAR Pesticide Division.

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

Types of Chemical Spills That Require Action

Chemicals include, but are not limited to the following:

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

Required Spill Response Equipment

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

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

Personal Contact

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

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

Reference Tables (information subject to change as necessary)**Table 2: Herbicide Manufacturers**

MANUFACTURER	TELEPHONE NUMBER
Albaugh Inc.	(800) 247-8013
BASF Corporation	(800) 526-1072
Bayer Environmental Science	(800) 331-2867
Dow Agro Sciences	(800) 992-5994
E.I. du Pont de Nemours and Company	(800) 931-3456
Monsanto	(314) 694-1000
Nufarm	(800) 345-3330
PBI/Gordon Industrial	(816) 421-4070

Table 3: State Agencies

STATE AGENCY	TELEPHONE NUMBER	SPECIAL INSTRUCTIONS
Massachusetts Pesticide Bureau	(617) 626-1784	A.S.A.P. (within 48 hours)
Massachusetts Department of Environmental Protection, Emergency Response Section	Main Office: (888) 304-1133 (after hours number)	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) 682-9211	For medical emergencies involving suspected or known pesticide poisoning symptoms

Table 4: Emergency Services:

EMERGENCY SERVICE	TELEPHONE NUMBER	SPECIAL INSTRUCTIONS
Attleboro Fire/ Police Department	911	
Massachusetts State Police, Foxboro Barracks	(508) 543-8550	
ChemTrec	(800) 262-8200	
Clean Harbors	(800) 645-8265	
Pesticide Hotline	(800) 858-7378	PST: 8:00 am-12:00 pm, web: www.NPIC.orst.edu

Table 5: City of Attleboro contacts in case of a spill or accident:**Derek Corsi***Superintendent*

Department of Parks & Forestry

City of Attleboro

199 County St. Attleboro, MA 02703

(774) 203-1865

Attleboro Fire/ Police Department	911
Attleboro Conservation Agent: Nicholas Wyllie	(508) 223-2222 Ext. 3145
Attleboro Health Dept.	(508) 223-2222 Ext. 3241

12. THE QUALIFICATIONS OF THE INDIVIDUALS SUPERVISING, DEVELOPING, AND SUBMITTING THE V.M.P.

A. Individual Supervising the VMP:

Derek Corsi

Superintendent

Department of Parks & Forestry

City of Attleboro

199 County St. Attleboro, MA 02703

(774) 203-1865

B. Individual who wrote and developed the VMP:

Derek Corsi

Superintendent

Department of Parks & Forestry

City of Attleboro

199 County St. Attleboro, MA 02703

(774) 203-1865

Derek Corsi's qualifications extend from work experience in landscape maintenance, tree care, herbicide application, and crew management. Derek has a bachelor's degree in Landscape Architecture from the University of Rhode Island and is an ISA certified arborist. He currently holds pesticide certifications in both Massachusetts and Rhode Island. Prior to employment at the City of Attleboro Park and Forestry Department, Derek spent several years supervising invasive plant mitigation along the Woonasquatucket River Watershed in Providence, RI.

**APPENDIX 1:
333 CMR 11.00, RIGHTS – OF – WAY REGULATIONS**

APPENDIX 2:
MGL 132B MASSACHUSETTS PESTICIDE CONTROL ACT

**APPENDIX 3:
CHAPTER 85, SECTION 10**

APPENDIX 4:

TREATMENT NOTIFICATION PROCESS PER 333 CMR 11.06-11.07

**APPENDIX 5:
HERBICIDE SPILL CHECK LIST**