

MassDOT
DISTRICT
2

YEARLY OPERATIONAL PLAN

2014

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PROGRAM PURPOSE

The primary objective of roadside vegetation management is to provide safe use of and access to roadways, sidewalks and facilities, and to preserve the integrity of highway infrastructure. Integral to achieving this primary objective is providing stormwater control through proper management and use of plant material, maintaining slope stabilization, protecting habitat and resource area, preserving and enhancing the scenic quality of the roadside, and controlling invasive and noxious plants. Uncontrolled roadside vegetation can impede normal maintenance operations, obstruct motorists' line of vision, block safe access to roadways and sidewalks, and can cause damage to structures such as median barriers, pavements, shoulders, guard posts, drainage lines, and waterways. Uncontrolled invasive species exacerbate maintenance problems and cause degradation of right of way land and of abutting land.

This 2014 YOP for Districts 2, 3, and 5 is being filed under the MassDOT Highway Division 2014 – 2018 Vegetation Management Plan (VMP). As described in the VMP and herein, the goal of the 2014 YOP is to achieve the vegetation management objectives described above while following the principles of Integrated Vegetation Management (IVM).

The basic premise of IVM with regard to roadside vegetation management is:

- to define and prioritize the needs for control
- through a combination of methods and strategies, effectively control undesirable vegetation
- where appropriate, promote desirable vegetation

The long term objective of IVM with regard to herbicide use is that through prioritization of targeted plants and locations, proper timing of applications, and use of appropriate chemicals and methods, vegetation is more effectively controlled. In areas where vegetative cover is desired, vegetation management, whether mechanical, herbicidal, or through the use of planted material, should be such that, over time, it promotes a stable and sustainable roadside plant community that requires less maintenance and herbicide use, improves stormwater infiltration and control, and provides a more scenic roadside appearance.

The 2014 Yearly Operational Plan for MassDOT roadways will be for the treatment of problematic vegetation in the towns listed and in locations as shown in the maps.

Individual Supervising the Yearly Operational Plan (YOP)

The individual supervising the implementation and conditions of the YOP is:

Name and Title George Batchelor, Supervisor of Landscape Design
Department MassDOT, Highway Division
Address 10 Park Plaza, Boston, MA 02116
Phone Number (857) 368-9180

Contractor/Personnel Performing the Herbicide Treatments

As required by law, applicators to roadside rights-of-way must hold a valid license from the Massachusetts Department of Agricultural Resources.

Northern Tree Service

Philip Cambo
P.O. Box 790
Palmer, MA 01069
Phone: 800-232-6132

Vegetation Control Services, Inc.

Harry Williston
2342 Main Street
Athol, MA 01331
Phone: 800-323-7706

D'Angelo Brothers

Paul Capachione
100 N. Conahan Drive
Hazelton, PA 182019
Phone: 207-322-3350

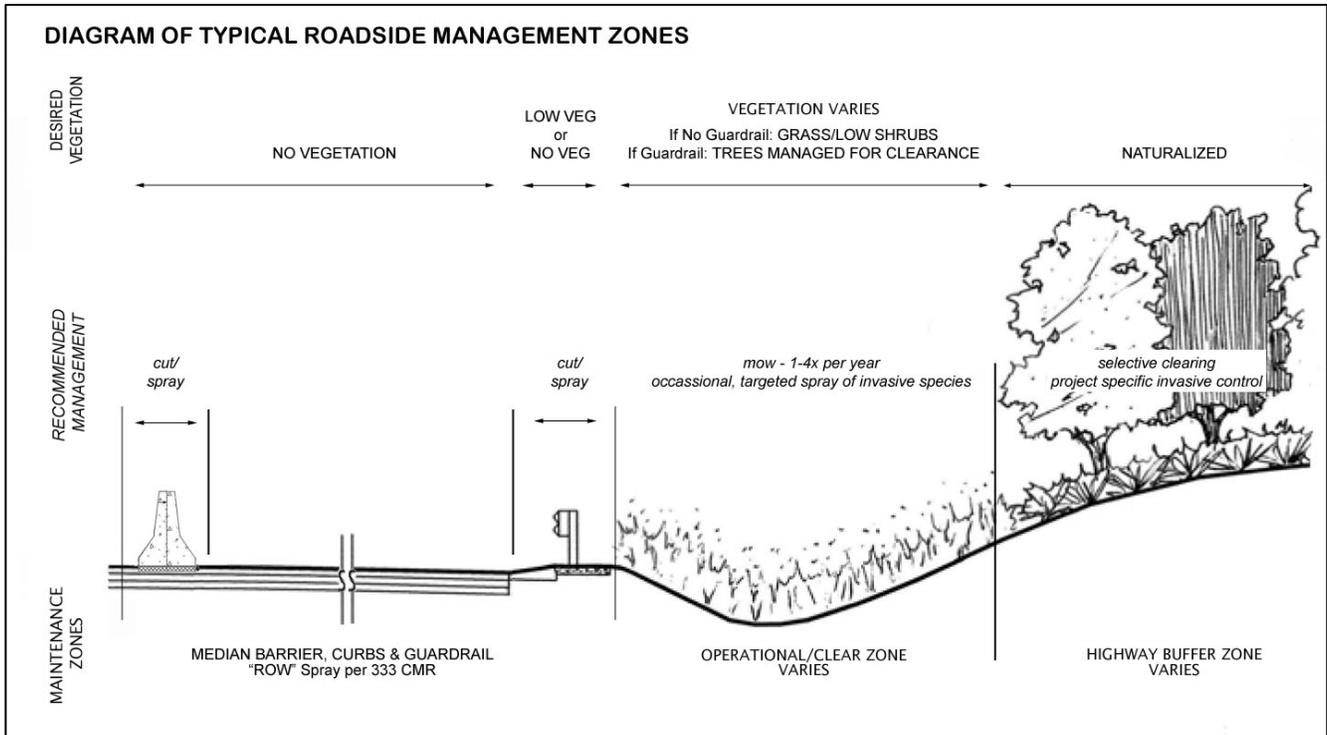
Mayer Tree Service

Dan McCarthy
9 Scots Way
Essex, MA 01929
Phone: 978- 500-1297

ROADSIDE MANAGEMENT ZONES

Vegetation management for roadsides is based on the zones of use that are typical of the roadway corridor. Understanding the vegetation management requirements and having clear objectives for these zones is essential to assessing how to balance vegetation control with IVM practices.

Roadside vegetation management covers 3 primary zones as shown in the diagram: Median, Curb and Guardrail (ROW Zone), Operation/Clear Zone and the Highway Buffer Zone. The herbicide use as described in this YOP is primarily for work in the ROW Zone, except for locations where herbicide is required to provide necessary access or to keep utility cabinets and areas, utility poles, and signs free of vegetation.



METHODS

Target Vegetation

Vegetation growing in the ROW Zone is targeted for control or elimination by mechanical or herbicidal methods as the objective is to have no vegetation on median barriers, along curbs and sidewalks, and no or low vegetation under and near the guardrails. Methods of control are typically mechanical, however, herbicide may be used in locations shown in the YOP maps.

Vegetation in the Operational/ Clear Zone that blocks signage, visibility or access to utilities may also be targeted. Methods of control in the Operation/Clear Zone are typically mechanical, however, for invasive species that re-sprout, such as Japanese knotweed or Tree of Heaven, targeted application of herbicide may be used in select locations.

Mechanical Vegetation Management Techniques

Most of MassDOT's vegetation management is by mechanical methods, and these include mowing and line trimming of herbaceous material, tree trimming and removals, and brush cutting.

Herbicide Application Methods

For locations shown in the YOP maps, MassDOT will primarily utilize foliar spray for all guardrail, curb and barrier treatment. Cut stem/stump methods may be used for instances where selective treatment is desired, such as to treat re-sprouting trees, shrubs or vines. Selective treatment is more effective, results in a reduced volume of herbicide, and protects adjacent desirable vegetation.

All equipment used for applications shall meet requirements as specified in the VMP and contract specifications.

Foliar treatments involve the application of approved herbicides and adjuvants diluted in water to the foliage and stems of the target vegetation. Low-pressure nozzles will be used to produce the largest possible droplet size and a drift control agent shall be added at the rate recommended on the label to keep spray drift to an absolute minimum. The herbicide solution is applied to lightly wet the target plant.

The area of application for single-faced guard rail shall achieve a spray swath of three (3) feet in width, while never extending further than one (1) foot behind the post, and covering the area between the post and curb or gutter line where applicable. For double-faced guard rail the area of application shall achieve a spray swath of four (4) feet in width, while never extending further than one (1) foot behind the post, and covering the area between the post and curb or gutter line where applicable.

Foliar applications will take place when plants are in full leaf and actively growing and in accordance with the manufacturer's recommendations.

When directed, vegetation control around the bases of individual light poles, sign supports, delineators and other appurtenances located beyond the area covered during guard rail spraying shall be limited to an area one (1) foot in width around all such appurtenances or as directed by the Engineer. Additionally, when curbing area is sprayed, the Contractor's spray swath must never extend one (1) foot past the edges of curb. Cracks in the pavement that contain weeds shall also be treated in the spray area.

Targeted application may include cut stump or cut stem treatment of specific species that re-sprout and shall be with a portable pressurized canister or manually painted on the freshly cut surface of the remaining stump. Targeted application also includes foliar application to specific species of invasive plants such as Japanese knotweed.

For ROW treatment, MassDOT will use only those chemicals listed within the Sensitive Areas Materials List, with the Use Restrictions shown for Sensitive Areas, and with the label restrictions for all other areas.

MATERIALS

Rights-of-Way Sensitive Area Materials

The Massachusetts Department of Agricultural Resources (Pesticide Bureau) approves materials for use within Sensitive Areas within rights-of-ways. The materials are listed on the Department of Agricultural Resources website and general information on materials is listed in the VMP.

Tables 1-5 - Materials and Rates of Application

| Table 1 - Tank Mix for Curb, Cracks, Guardrails, Median Treatments (General Weed Control) | | | |
|--|--|---------------------------------|--|
| Herbicides & Adjuvants | Active Ingredient | EPA Registration Numbers | Mix Concentration (per 100 gals. Water) |
| Rodeo | Glyphosate | 62719-324 | 2-5% |
| Oust Extra | Sulfometuron Methyl and Metsulfuron-Methyl | 352-622 | 10 oz (applied at a volume of 15-30 gals per acre) |
| Induce, Clean Cut, or equivalent surfactant | | | 0.125% - 1% |
| Point Blank, Stay Put Plus or equivalent drift retardant | | | 4-16 oz. |

| Table 2 - Tank Mix for Poison Ivy, Noxious and Invasive Species | | | |
|--|--------------------------|---------------------------------|--|
| Herbicides & Adjuvants | Active Ingredient | EPA Registration Numbers | Mix Concentration (per 100 gals. Water) |
| Rodeo | Glyphosate | 62719-324 | 2-5% |
| Escort XP | Metsulfuron-Methyl | 352-439 | 1.25-4oz |
| Induce, Clean Cut, or equivalent surfactant | | | 0.125% - 1% |
| Point Blank, Stay Put Plus or equivalent drift retardant | | | 4-16 oz. |

| Table 3 - Tank Mix for Poison Ivy | | | |
|--|--------------------------|---------------------------------|--|
| Herbicides & Adjuvants | Active Ingredient | EPA Registration Numbers | Mix Concentration (per 100 gals. Water) |
| Garlon 4 Ultra | Triclopyr | 62719-527 | 2-4% |
| Induce, Clean Cut, or equivalent surfactant | | | 0.125% - 1% |
| Point Blank, Stay Put Plus or equivalent drift retardant | | | 4-16 oz. |

| Table 4 - Tank Mix for Low Volume Foliage Applications (mixed in water) | | | |
|--|--------------------------|---------------------------------|--|
| Herbicides & Adjuvants | Active Ingredient | EPA Registration Numbers | Mix Concentration (per 100 gals. Water) |
| Rodeo | Glyphosate | 62719-324 | 3-5% |
| Krenite | Fosamine | 42750-247 | 6-10% |
| Escort XP | Metsulfuron-Methyl | 352-439 | 1.25-4oz |
| Arsenal Powerline | Imazapyr | 241-431 | 0.125%-.5% |
| Induce, Clean Cut, or equivalent surfactant | | | 0.125% - 1% |
| Point Blank, Stay Put Plus or equivalent drift retardant | | | 6-64 oz. |

| Table 5– Tank Mix for Cut Surface Treatment Applications | | | |
|---|--------------------------|---------------------------------|--|
| Herbicides & Adjuvants | Active Ingredient | EPA Registration Numbers | Mix Concentration (per 100 gals. Water) |
| Rodeo | Glyphosate | 62719-324 | 40-50% |
| Arsenal Powerline | Imazapyr | 241-431 | 3%-5% (mixed with Accord Concentrate) |
| Carriers: Water or Windshield Washing Fluid | | | 0.125% - 1% |

Methods used to Delineate Sensitive Areas Adjacent to the R.O.W.

Sensitive Areas are areas within rights-of-way in which public health, environmental or agricultural concerns warrant special protection to further minimize risks of unreasonable adverse effects. These areas shall be delineated.

Sensitive areas are separated into two categories: areas that are visible and therefore readily identifiable in the field, and areas that are not visible and therefore not readily identifiable in the field.

Sensitive Areas that are visibly identifiable in the field include surface waters, wetlands, rivers, and agricultural and inhabited areas. Sensitive areas that are not readily identifiable in the field include public groundwater supplies, public surface water supplies, and private water supplies. These locations are derived from MassGIS data provided by the Department of Environmental Protection, Fish and Wildlife, and other state agencies and are shown on the maps.

Sensitive areas requiring delineation in the field will either have steel reflective delineators bolted to the guardrail beam face to mark locations or reflectors glued to the top of the guardrail or median barrier.

For Districts 1 and 6 reflectors shall be as follows:

NO-SPRAY limits shall be indicated using RED flags attached to the guardrail at the beginning of the limits for Districts 1 and 6.

SPRAY limits shall be indicated using GREEN flags attached to the guardrail at the beginning of the limits.

For Districts 2-5 reflectors shall be as follows:

NO-SPRAY limits shall be indicated using BLUE signs at either end of the limits.

SPRAY limits shall be BROWN.

ALTERNATE YEAR SPRAY ZONES shall be delineated with ½-BROWN – ½-BLUE delineator signs.

Table 6 - Sensitive Area Restriction Guide (333 CMR 11.04)

| SENSITIVE AREA | NO-SPRAY AREA | LIMITED USE AREA | WHERE IDENTIFIED |
|----------------------------------|--|---|--|
| Wetlands and Water over Wetlands | Within 10 feet. | 10 - 100 feet: 12 months must elapse between applications and herbicides are applied selectively by low pressure foliar techniques or by cut-stump applications. | YOP Maps and identify on site |
| Certified Vernal Pool | Within 10 feet. | 10 feet to the outer boundary of any Certified Vernal Pool Habitat; 12 months must elapse between application; Selective low pressure, using foliar techniques or basal or cut-stump applications. | YOP Maps and identify on site |
| Public Ground Water Supply | Within 400 feet (Zone I) | Zone II or IWPA (Primary Recharge Area): 24 months must elapse between applications; applications shall be selective low pressure foliar techniques, basal or cut-stump. | YOP Maps and identify on site |
| Riverfront Areas | Within 10 feet from mean annual high water line. | 10 feet from the mean annual high water line and the outer boundary of the Riverfront Area: 12 months must elapse between applications; applications shall be selective low pressure foliar, basal or cut- stump. | YOP Maps and Identify on site |
| Agricultural & Inhabited Areas | N/A | 0 - 100 feet: 12 months must elapse between application; application shall be selective low pressure foliar, basal or cut-stump. | Identify on site. |
| State Listed Species Habitat | No application within habitat area except in accordance with a Yearly Operational Plan approved in writing by the Massachusetts Department of Fish and Game. | | YOP Maps |
| Private Water Supply | Within 50 feet | 50 – 100 feet 24 months must elapse between applications; applications shall be selective low pressure foliar techniques, basal or cut- stump. | In YOP & well list and identify on site. |
| Public Surface Water Supply | Within 100 feet of any Class A public surface water source. | 100 feet to the outer boundary of the Zone A; 24 months must elapse between applications; applications shall be selective low pressure foliar techniques, basal or cut- stump. | YOP Maps |
| | Within 10 feet of any tributary or associated surface water body located outside of the Zone A | 10 feet to the outer boundary of the Zone A; 24 months must elapse between applications; applications shall be selective low pressure foliar techniques, basal or cut- stump. | YOP Maps |
| | Within 10 feet of any tributary or associated surface water body located outside of the Zone A | 10 feet to the outer boundary of the Zone A; 24 months must elapse between applications; applications shall be selective low pressure foliar techniques, basal or cut- stump. | YOP Maps |

Herbicide Handling, Mixing and Loading Procedures

All mixing and loading of herbicides will occur at the storage facility in amounts of herbicide necessary to carry out that day's work. This will minimize waste and the need of excess handling. The spray vehicle will be equipped with a clipboard log of the herbicides on board, a bag of adsorbent, activated charcoal, plastic bats, a broom and a shovel in case of a minor spill.

Major Spills and Related Accidents - For the purpose of this VMP, major spills involve reportable quantities of hazardous materials as defined by the Department of Environmental Protection (DEP) 320 CMR 40.000. Related accidents include fire, poisoning and automobile accidents.

- a) Administer proper first aid and call an ambulance and/or Massachusetts Poison Information Center in cases involving injury due to poisoning.
- b) Call the police and/or fire department in cases involving automobile accidents or fire. c) If possible, control the spill by stopping the leak or source of spill.
- d) Confine the spread of liquids with a dike composed of soil or other absorptive materials.
- e) Call ChemTrec, Massachusetts Pesticide Bureau or chemical manufacturer for assistance (see phone listing below) if unable to handle the spill or the material is unfamiliar.
- f) Notify the DEP if water bodies are contaminated, and for releases or threatened releases of reportable quantities of hazardous material.
- g) Notify the District Hazardous Material Coordinator. h) Clean up spill:
 - 1) If the spill occurs in a public location, isolate the spill areas and deny unauthorized entry until cleanup is complete.
 - 2) Absorb spilled liquids with sand, absorptive clay, spill control gel, vermiculite, pet litter, sawdust or other absorptive material. Wear proper protective clothing and equipment.
 - 3) Sweep or shovel contaminated absorbent into a leak proof, sealable container for proper disposal.
 - 4) Dry herbicides, such as dust, granular and pellets can be directly swept or shoveled into leak proof sealable containers without absorptive materials.
 - 5) Neutralize contaminated area with hydrated lime, sodium hypochlorite (bleach), or soapy water. Never mix bleach and ammonia base products or a poisonous gas will result.
 - 6) Dispose of contaminated material at an approved location.

Emergency Information and Points of Contact

In the event of a spill or emergency, information on safety precautions and clean up procedures may be gathered from the following sources:

| | |
|--|----------------|
| Herbicide Label | Container |
| Herbicide Fact Sheets | Appendix D |
| Herbicide Manufacturers: | |
| Dow Agro Sciences----- | (517) 636-4400 |
| EI DuPont----- | (800) 441-3637 |
| Monsanto----- | (314) 694-4000 |
| BASF----- | (800) 832-4357 |
| NuFarm USA..... | (630) 455-2000 |
| MA Department of Agricultural Resources (DAR) | (617) 626-1700 |
| MA Department of Environmental Protection (DEP) Incident Response Unit | 1-888-304-1133 |
| MA Department of Environmental Protection – Western Regional Office | (413) 784-1100 |
| ChemTrec | (800) 424-9300 |
| MA Poison Control Center | (800) 682-9211 |
| Environmental Protection Agency Pesticide Hotline | (800) 858-7378 |
| MA Department of Public Health, Bureau of Environmental Health, Environmental Toxicology Program | (617) 624-5757 |
| Massachusetts Department of Transportation | |
| Boston Headquarters | (857) 368-4636 |
| District 1 Headquarters (Lenox) | (413) 637-5700 |
| District 2 Headquarters (Northampton) | (413) 582-0599 |
| District 3 Headquarters (Worcester) | (508) 929-3800 |
| District 4 Headquarters (Arlington) | (781) 641-8300 |
| District 5 Headquarters (Taunton) | (508) 824-6633 |
| District 6 Headquarters (Boston) | (857) 368-6100 |

SCOPE OF WORK

The proposed work for State FY 2014 involves the application of herbicides to control target vegetation along state highways in accordance with the Rights of Way Management regulations (333 CMR 11.00) and the MassDOT 2014-2018 Vegetation Management Plan (VMP). Target vegetation along shall include vegetation affecting roadway structures, particularly guardrail, barriers and curbs, as well as invasive vegetation at selected locations.

Maps of locations are shown in Appendix A.

MASSDOT 2014 YOP TOWNS & ROUTES

| <i>Routes</i> | <i>Municipalities</i> | <i>Target</i> |
|---|---|----------------------|
| DISTRICT 2 | | |
| I-90 | Brimfield, Chicopee, Ludlow, Palmer, Warren, West Springfield, Westfield & Wilbraham | GBC |
| I-91 | Bernardston, Chicopee, Deerfield, Easthampton, Greenfield, Hatfield, Holyoke, Longmeadow, Northampton, Springfield, West Springfield, and Whately | GBC |
| I-291 | Chicopee, Springfield | GBC |
| I-391 | Chicopee | GBC |
| Route 57 Ramps to Routes 75 and 159 | Agawam | GBC |