**MASSDOT**

**INVASIVE PLANT MANAGEMENT STRATEGY**

**(IPMS) REPORT FORM**

Please complete the following information for the IPMS. The IPMS shall be based on an initial site walk that takes place with the Engineer and the MassDOT Landscape Architect prior to any soil or vegetation being disturbed. All procedures and measures should be coordinated with the prime contractor and the Engineer prior to being incorporated into the IPMS. The IPMS must be approved by the Landscape Design Section prior to implementation.

**PROJECT INFORMATION**

Date of site Walk:

Contract No:

Project No:

Project Description:

Prime Contractor:

Individual/Contractor providing IPMS &

performing management:

Attendees at site walk:

Window for final treatment:

Window for initial treatment: treatment:

Expected end of Contract:

**STRATEGY**

1. **SITE CONDITIONS AND TREATMENT EXPECTATIONS**

Provide a summary of project and site conditions, invasive plants on site, extent of invasive plants, complications, etc. Include relevant information for staging and stockpile areas as well as main construction areas. Attach marked up plans and photos as part of Appendix.

1. **COORDINATION WITH PRIME CONTRACTOR**

Provide guidance or specify the coordination required for associated work, as applicable, including tree removal; clearing, and/or clearing and grubbing; wetland mitigation; and planting and seeding.

1. **SOIL MANAGEMENT FOR PLANTS THAT SPREAD BY RHIZOME/ROOT**

Soil management is required for soil in areas with knotweed, phragmites, loosestrife, and invasive species that spread by root/rhizome. Depending on the project conditions, per site walk discussion, management may also be required for soils under species that spread by seed. Proposed management will need to be coordinated with the Prime Contractor and agreed upon by the Engineer. Management measures include 1) separate stockpile with barriers and/or other measures of erosion prevention; 2) re-use or disposal of infested soils; 3) preventing spread through equipment; and 4) other considerations. See Appendix D for MassDOT General Guidance.

1. **DISPOSAL OF ABOVEGROUND MATERIAL**

Describe briefly how aboveground plant material to be removed under clearing and/or grubbing will be disposed (ex., ground for mulch off-site, incinerated off-site, ground and left on site, etc.). If on-site disposal/re-use is applicable and feasible, measures implemented should follow MassDOT General Guidance under Appendix D. Except for Japanese knotweed and unless otherwise discussed during the initial site walk, there is no specific MassDOT requirement for disposal of aboveground material.

1. **HERBICIDE TREATMENT**
2. **Provide the herbicide application information shown in Table I.** Expectation is that generally all invasive plants found within project limits will be treated unless approved otherwise or noted in the IPMS. The expectation is 100% eradication for most plants and 95% visibly dead for knotweed and phragmites by end of contract. Areas to be treated should include stockpiles, staging areas, and access routes as necessary. Note follow-up treatment if different from first treatment (i.e., injection followed by foliar). See MassDOT General Guidance in Appendix D for recommended treatment window.

**Table I. Herbicide Treatment**

|  |  |  |  |
| --- | --- | --- | --- |
| **Treatment Window** | **Plant Species** **Targeted** | **Chemical/s Proposed** | **Application****Method/s** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

1. **Provide** **logic of timing and/or other details as applicable for treatment proposed**.
2. **Provide links for chemical Product Labels and Safety Data Sheets.**
3. **OTHER PROJECT SPECIFIC CONSIDERATIONS**

Note special concerns regarding abutters, Order of Conditions, other permit requirements, etc.

1. **APPENDICES**
2. **Provide photos with brief description of location, plant species, conditions, etc.**
3. **Provided marked up plans**
4. **Provide copy of Massachusetts Pesticide Certifications/Licenses for applicators**
5. **Include MassDOT General Recommended Guidance**

**Appendix D.**

**MassDOT General Recommendations for**

**Invasive Plant Management on Roadway Construction Projects**

The following are recommendations for invasive plant management on roadside construction projects. Recommendations are based on generally accepted best practices. However, as every site and contract is different, the Invasive Plant Management Strategy should be specific to the project conditions.

* 1. **Recommended Treatment Windows**

The following table shows typical treatment windows, depending on target species and management goals. Due to the short term of construction contracts, eradication is often not feasible. The primary goal of MassDOT invasive control for construction projects is to minimize spread both on and off-site and to improve the chances of successful ecological restoration in the no or minimally managed environment of the roadside. Treatment times proposed should be oriented toward this goal unless otherwise discussed during the site walk. Japanese knotweed is considered the species of highest concern. For this reason, for most projects, the window of treatment is likely to be August-September. Woody plants that will be cleared and grubbed as part of construction work do not typically need to be treated prior to that work.

|  |  |
| --- | --- |
| **General Treatment Window** | **Primary Goal or Plants Targeted** |
| June-July | * Certain herbaceous species (ex., Swallowwort, garlic mustard)
* To reduce growth for access or to accommodate construction schedule
 |
| Prior to seed set (typically June-July) | * Infestations of annual species that can’t be managed by mowing or pulling
* Perennials and woody plants when appropriate to restoration efforts
 |
| August – September | * Knotweed and phragmites
* Woody plants
* Certain herbaceous species
 |
| August – February  | * Woody plants using cut stem or basal bark application methods
 |

* 1. **Preventing Spread via Equipment**
* Movement of maintenance and construction equipment should be from areas not infested by invasive plants to areas infested by invasive plants whenever possible. This applies to road corridors, rail trails, ditch cleaning, shoulder scraping activities, and other similar work.
* Equipment, machinery, and hand tools should be cleaned of all visible soil and plant material before leaving the project site. Equipment should be cleaned at the site of infestation or where shown on the Plans and as approved by the Engineer.
* Cleaning site should be clearly delineated and should have sediment barriers if determined to be necessary to prevent soil run-off.
* Acceptable methods of cleaning include, but are not limited to:
	+ - Brush, broom, or other hand tools (used without water)
		- High pressure air
		- Portable wash station that contains runoff from washing equipment (containment must comply with wastewater discharge regulations).
* Location and methods for cleaning of equipment must be coordinated and agreed upon by the Engineer.
* Locations should be monitored and treated for regrowth for duration of contract.
	1. **Temporary Stockpiling**

Excavated material (soil, gravel, etc.) from areas with invasive species that spread by rhizomes (typically knotweed and phragmites) should be stockpiled separately. Care should be taken when selecting a stockpile location to avoid introducing plants of concern into a non-infested area. If feasible, soil should be placed on an appropriately sized geotextile barrier (ex., barrier with a puncture resistance equal to or greater than 500 lbs./2300 N). Stockpiles should be properly secured with sediment barriers and erosion prevention measures implemented as necessary. Signage is recommended as personnel may change over the course of a contract. Stockpiles should be monitored and regrowth treated. All equipment used for handling stockpiled materials should be cleaned.

* 1. **Disposal/Re-use of Excavated Soil at End of Project**

The species of primary concern when moving or disturbing soil are species that spread by root/rhizome (i.e., knotweed, phragmites, and loosestrife). For some projects, species that spread by seed may also require soil management. Even after treatment, soils with knotweed or phragmites will likely still contain viable fragments. The following are general recommendations for disposal or re-use of soil that may contain viable rhizomes, in order of preference:

1. Bury on-site. Recommended minimum depths are:
	* Soil with plants that spread by seed: 3 feet or deeper below grade.
	* Soil with invasive plants that spread by rhizome: 5 feet or deeper below grade.
	* Burial is not necessary if replacing soil in the same location from which infested soil was removed as remaining soil likely still contains viable material regardless of treatment.
2. Place back on site in lieu of loam where invasive plants were previously growing. Regardless of treatment, there is a high likelihood that invasive plants will re-grow from rhizome or existing seed in the soil. Ideally treatment can continue until plants are eradicated.
3. Place in lieu of loam in an approved location within the project limits where an infestation currently exists or where plants can be managed by mowing or spraying in the future.
4. Mound in an approved location within the project limits (ideally upland for wetland species).
5. If taken off-site, soil should be:
* Placed in an approved location where knotweed already exists.
* Placed in an approved location that will receive future monitoring and treatment.
* Sent to a landfill (as applicable to contract items) with a receipt submitted to the Engineer.
	1. **Disposal of Above Ground Plant Material**

The optimal disposal of above ground material is to grind or pile material on site and in the same location as the infestation. When feasible, the following is recommended. For most MassDOT projects, above ground material will need to be taken off-site.

* + - Burying (ideally in the same location):
		- Knotweed, phragmites, and loosestrife should be buried at least 5 feet below grade.
		- Material from most other invasive plants should be buried a minimum of 3 feet below grade.
		- Brush piles or grindings left to decompose naturally on site:
		- Plant material from most invasive plants can be piled on site to dry out.
		- When piling material from species that can take root (ex., purple loosestrife, phragmites, and Japanese knotweed), care must be taken to pile stems so that cut surfaces are not in contact with the soil.
		- Plant with seeds or fruit attached should be piled within the limits of the infestation if feasible.