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 those project conditions.

I. 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. NOTE: 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

II. 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 as shown on the Plans and as approved by the Engineer.
- The 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.

III. 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.

IV. 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 typically 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.

V. 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.