

Date: October 15, 2014

RE: VTrans Vegetation Management - Informational Summary – Guardrail & Herbicide

The management of weeds and unwanted vegetation is an important element of roadside maintenance. Left uncontrolled, weeds can obstruct motorists' views, make pedestrian movement unsafe, slow other maintenance operations, damage pavement and other road structures, and cause drainage and erosion problems. Well-managed vegetation, on the other hand, in combination with appropriate, sustainable roadside plant communities, can reduce roadside erosion and stormwater run-off, allows for required site distance visibility, provides a safe recovery zone where necessary, and creates a more aesthetically pleasing view for the driver.

The decision to manage vegetation on, under and behind guardrail using herbicides is truly one of economics. When you compare the time and resources necessary to address this vegetation control issue with mowers and hand labor the costs far outweigh that resulting from the use of herbicides. VTrans has approximately 1,000 miles of guardrail (year 2011 estimate) which is in need of constant inspection, replacement, repair and maintenance.

The reasons for maintaining guardrail free of vegetation on, under and behind guardrails are noted below.

1. Ensure ability to visually inspect for structural issues and ease of access to maintain guardrail.
2. Ensure ability to visually inspect for scour and nick points at the top of roadside slopes that typically lead to eroding gullies and other issues contributing to roadside slope failure.
3. Maintain visibility of reflectors for public safety.
4. Prevent the loss of sight distance, concealment of intersections and impaired vision at curves, hills, driveways and other critical areas.
5. Maintain roadside drainage patterns and help drainage systems function as designed. Keep dead vegetation from building up behind the guardrail and causing an artificial curb forcing stormwater discharge to concentrate at the low point along the road, preventing sheet flow and possibly causing an eroded gully to form at that low point in the road.
6. Avoid ice patches on the roads due to vegetative berms beneath guardrail acting like curb and gutters holding water on the roadway that would normally sheet flow off the pavement, under the guardrail and over the vegetated roadside slope.
7. Enhance roadside visibility for the traveling public which may decrease wildlife-vehicle conflicts by allowing more time to react. Keeping vegetation back from the edge of the road to improve visibility of wildlife and reduce chance of vehicle – wildlife collisions.
8. Manage the threat of fire hazards by eliminating roadside vegetation.
9. Avoid snow drifts on the roads as higher roadside vegetation has been shown to promote snow drifts in the roadway.
10. Control the growth of woody vegetation along roads as their roots systems compromise pavement integrity.
11. Promote worker safety by controlling noxious weeds (poisonous plants) in areas workers are expected to access. This also relates to reducing “lost time accidents” associated with manual control and increased exposure to poisonous plants.
12. The area adjacent to guardrail is an ideal location for deer ticks waiting to get on unsuspecting workers inspecting and repairing guardrail sections. Clearing away the vegetation will help reduce the health risks and personal injury associated with working around guardrail and ticks.

13. The concealment of sharp metal objects, broken glass and large stones poses a threat to both the public and to the maintenance worker and their machinery.
14. Maintenance of roadsides as clear zones is necessary to avoid future safety problems and increasing vehicle/tree, brush accident risk, as vegetation naturally reestablishes itself along roadsides.
15. Good and prompt maintenance of guardrail can reduce lawsuits against the Agency. Keeping track of the damage to guardrails, making repairs quickly and recording the repairs made will help limit lawsuits.

Other points of interest and relevant information that may be useful as part of this discussion include:

1. The Federal Highway Administration (FHWA) requires that VTrans maintain its infrastructure including controlling roadside vegetation for some of those reasons mentioned above.
2. A recent survey across the Nation shows that 48 states are using herbicides to keep guardrail free of unwanted vegetation on, under and behind guardrail.
3. VTrans is aware of and concerned with:
 - a. Bare ground along edge of pavement and under/behind guardrail which may result in erosion, sediment transport and slope failure.
 - b. Environmental concerns and the potential impacts herbicides can have on pollinators and water quality.
 - c. The temporary impact stretches of dead vegetation behind guardrail can have on the aesthetics of the roadway corridor.
 - d. Organic Farmers and their requests to not spray guardrail along their working farms.
 - e. Drift and applicator error and the need for ongoing training and certifications programs for our staff.
 - f. The need to consider use of porous non-vegetative surfaces under and behind guardrail.
 - g. Understand and learn from what other DOTs across the nation have to offer. Specifically considering "Herbicide Alternatives Research" conducted in 2008 by Transportation Center for Mass DOT and FHWA which concluded that "...Because of the cost of materials and labor and need for repeated seasonal applications, all of the alternative practices will cost substantially more than the use of conventional herbicides." Based on the review of the literature and results of the review of vegetation management practices by other state departments of transportation, several methods of management were selected for investigation. Feasibility of successful use, environmental concerns, and budgetary factors were considered in selection of methods to investigate. These methods included use of herbicides that are alternatives to conventional, chemical herbicides and use of mechanical treatments of mulches, hot water, fire, and mowing.
4. In selected areas herbicides are chosen as one of the tools to control vegetation. The benefits of controlling undesirable vegetation with herbicides outweigh the risks associated with their use. The savings in dollars and man hours and the benefits to safety for VTrans is of great importance to the public.
5. Elimination of Guardrail - A federal construction project managed by VTrans looked at flattening roadway slopes to an incline of one on three or less, which provides an area safe enough to eliminate the use of guardrail. This was done for many years and resulted in the removal of guardrail and flattening of slopes in those areas where protected natural and cultural resources were not impacted, where right-of-way purchase was not required and where clear zone requirements could be met. To remove the remaining guardrail and thus eliminate the need for the use of herbicides in those locations would require costly environmental regulatory processes and

right-of-way acquisition. In some areas guardrail would not even be on the list for removal due to clear zone requirements like rock ledges in close proximity to the roadway.

6. Our annual spray program and associated activities are regulated by the Vermont Agency of Agriculture, Foods and Markets. This annual permitting process for the VTrans Right-of-Way Spray Program includes a public process during the permit application phase presented to Vermont Pesticide Advisory Council (VPAC). VPAC provides a recommendation to the Agency of Agriculture. Ultimately it is the Agency of Agriculture's decision to allow, amend or deny the submitted permit applications. Any concerns regarding how that regulatory program is managed should be discussed with that division of state government.

Please contact me with any additional questions you may have regarding the information used in deciding to apply chemicals to control unwanted vegetation on, under and behind guardrail or to discuss any of these points further.

Thanks

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"Helping Protect the Environment by Helping Others to Understand"...

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