WHATCOM COUNTY
INTEGRATED VEGETATION MANAGEMENT PLAN

WHATCOM COUNTY
PUBLIC WORKS DEPARTMENT
MAINTENANCE AND OPERATIONS DIVISION

Jon Hutchings, Public Works Director
Joseph P. Rutan, P.E., County Road Engineer
Jeff Gollen, Maintenance and Operations Superintendent
Kelly Mankle, Vegetation Crew Leader
Laurel Baldwin, Noxious Weed Program Coordinator
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## APPENDIX

Whatcom County Code Chapter 12.48 “Roadside Vegetation Management Program”
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PLAN SUMMARY

The Whatcom County Roadside Integrated Vegetation Management (IVM) Plan defines the Whatcom County Public Works policies and practices for maintenance of roadside vegetation within the approximately 2000 lane miles of county right-of-way throughout Whatcom County. Whatcom County also manages the vegetation in the storm water treatment areas, solid waste facilities, gravel pits, Maintenance and Operation facilities, and other special maintenance areas. Because many different tools and approaches are needed in order to address the multitude of site considerations, we refer to this as an “Integrated” plan. The intent of the Integrated Vegetation Management Program is to plan and conduct activities in a way that manages or removes unwanted vegetation and promotes desirable plants and trees efficiently and effectively.

The primary objectives in maintenance of roadside vegetation within Whatcom County’s Maintenance Area are:

- safety of the traveling public
- preservation of the road infrastructure
- control of legally designated noxious weeds where they occur on the right of way
- protection and preservation of natural environment
- preserving and enhancing the natural scenic quality of the roadside
- being a good neighbor to the many adjoining property owners

This document serves as the primary reference tool for the management of roadside vegetation maintenance in Whatcom County. It contains information on policies and locations for planned routine maintenance practices, reoccuring weed infestations, sensitive areas, and other areas with special management considerations. Also included are guidelines and procedures for best management practices in vegetation maintenance. This plan is developed in compliance with Washington State Noxious Weed Law, Chapter 17.10 of the Revised Code of Washington and modeled on the State of Washington’s Integrated Pest Management program as codified in Chapter 17.15 of the Revised Code of Washington. Specific County legislative direction upon which this program is based is codified in Chapter 12.48 “Roadside Vegetation Management Program” of the Whatcom County Code (Appendix I). It also supports Whatcom County’s long-range goals for roadside maintenance to:

- Improve effectiveness and efficiency in the control of weeds and unwanted trees and brush
- Reduce road maintenance costs and limit herbicide use over time
- Create a naturally stable, sustainable plant community

The plan is organized around four main categories of roadside vegetation maintenance work. These categories include:

- **Tree and Brush Management** – hazard trees, trimming, tree removal
- **Mechanical Maintenance Program** - long arm mowing, shoulder mowing, ditch maintenance
- **Herbicide Program** – bare ground shoulders, noxious weeds, guardrails, sign posts
- **Specialized Maintenance Activities** - storm water facilities, hydro-seeding, traffic islands

Roadside vegetation management is an evolving process and it is intended that this plan be continuously evaluated and adapted over time based on input and technical updates from various sources. It is essential that the results of maintenance activities are evaluated and adjusted as necessary to maximize efficiency and effectiveness. Best Management Practices (BMP) for each vegetation program element with continued research and education will provide important information for ongoing IVM treatments.
Whatcom County roadsides are divided into several zones for the purposes of assigning management objectives, maintenance needs, and thresholds for triggering vegetation maintenance actions. Noxious weed species designated for control by state and county laws are controlled throughout all zones.

**Zone 1** – A vegetation free gravel shoulder, where needed, is maintained as a one to three-foot wide strip to provide for key maintenance, operational, safety, pavement and guardrail preservation needs.

**Zone 2** – This operational zone extends from the edge of Zone 1 or the pavement edge to a width necessary to maintain sight distance at corners and intersections, and provide for other operational, safety, and environmental function.

**Zone 3** – In areas with sufficient right-of-way width, a buffer or transition zone extends from Zone 2 to the right-of-way line. This area is maintained selectively to minimize erosion as well as the growth of weeds and undesirable or hazard trees and brush.
WHY DO WE MAINTAIN VEGETATION ALONG OUR ROADS?

There are many benefits to be gained by roadside vegetation maintenance activities, both in immediate circumstances as well as with long term improvements. A primary and daily concern is for the safety of the driving public. If roadside vegetation is managed properly over time, the overall maintenance and costs can be reduced, herbicide treatments can be reduced, and the life of road infrastructure and integrity will be extended. Some of the most obvious benefits are listed below:

- Improved visibility at intersections, curves, and for sight distance of county road signs
- Minimized weather effects of rain, snow and ice
- Improved ditch maintenance with long-arm mowing for drainage; ditching or culvert repairs, and reduces snow build up
- Prevention of sod build up that causes water to pool, reduces bio-filtration off the pavement and damages the road infrastructure
- Hazard tree removal and trimming encroaching limbs
- Reduce negative effects and spread of invasive plants and increase biodiversity through the promotion of native plant species
- Improve safety for wildlife
- Provide aesthetic value to the roadway
VEGETATION MANAGEMENT PROGRAMS
The Tree and Brush Management Program is currently staffed with a specialized Senior Road Maintenance Worker who operates the Basket Truck. In addition, the Vegetation Crew Leader and/or Basket Truck Operator are Certified Arborists. Depending on availability, there are four Road Maintenance Workers. These include the chip truck operator and three Road Maintenance Workers to pull brush and flag traffic. During chip sealing (typically July-August), the Road Maintenance Workers are re-assigned and the Basket Truck Operator does tree inspections, service requests, and intersection maintenance for site distance. The Vegetation Crew Leader provides immediate supervision. The tree program is utilized 90% of the year.

The equipment typically used in this program includes the basket truck, chipper, chipper truck with knuckle boom and miscellaneous handheld tree cutting equipment. Chainsaws utilizing bio-degradable bar oil are used in all areas to limit the use of petroleum products. The chipper truck with mounted knuckle-boom lifts logs out of ditches thereby minimizing erosion problems due to dragging the logs and eliminating sawdust in the ditch.

Provide ongoing training for Basket Truck Operator/Certified Arborists. The education and experience this license represents assists the Vegetation Crew Leader and crew in identifying hazard trees (i.e., potential danger to traveling public, etc.) and developing a course of action to deal with trees that may pose a danger.

The typical tasks include tree trimming in right-of-way, tree inspections, problem tree removal, storm damage cleanup, and property owner notification and education. Also, with the use of temporary help and the Corrections Crew, manual maintenance of detention ponds, guardrails, intersections, road signs and site distance problems are maintained throughout the year. The Tree Crew supports all bridge, culvert and engineering projects.

Tree Trimming – shoulder miles of roadway cleared
Hazard Tree Removal – number of hazard trees removed, number of trees identified
Tree Chipping – number of yards of chips produced
Storm Water Facilities Maintenance – number of sites maintained, frequency of maintenance and inspections

The Vegetation Crew Leader and the Tree Crew work closely with the Public Works Biologist, especially in critical areas, to ensure all work is performed in accordance with ESA permit requirements. As an example, staff leaves shade cover for streams where possible as well as other wildlife enhancements.
TREE TRIMMING

♦ **DESCRIPTION:**
Tree trimming in the right-of-way involves properly removing limbs and decayed trees that hang over the road surface. Limbs are trimmed using a basket truck and a hydraulic chain saw and fuel-powered chain saws. The certified arborist trains workers on proper pruning and safety. Limbs are trimmed and fed into a wood chipper. The chip truck operator removes larger logs from right-of-way for road safety with the knuckle boom crane.

♦ **PURPOSE:**
Proper trimming of the tree canopy allows the road to warm and dry because of improved air circulation. Clearing the overhanging canopy allows the sun to warm and dry the road surface. Keeping the road drier makes the road safer for the public, helping to reduce water retention and frost. Moisture on the road also causes deterioration of the road surface and the road base.

♦ **APPLICATION:**
This may be applied any time of year. It may be used in conjunction with other Best Management Practices (BMP).

♦ **LIMITATION:**
In critical areas, special precautions will be taken to minimize or eliminate any negative environmental impact.

♦ **APPLICATION GUIDELINES:**
- Identify critical areas and setbacks following state, local, and federal guidelines.
- Site evaluations prior to maintenance. This would include on-site visual inspections and the use of maps.
- Use of biodegradable bar oil in chainsaws.
- Crew will be familiar with a spill prevention plan and carry spill kits on-site.
- Fueling of equipment will be done using a spill prevention pump and spill guard.
- Properly trim trees to provide a safe roadway (arborist approved pruning techniques).

♦ **MAINTENANCE:**
- Regularly inspect all tools and equipment for leaks prior to operating.
- Ongoing training for staff.
- Ongoing updates and enhancements of equipment.
RIGHT-OF-WAY TREE REMOVAL

♦ **DESCRIPTION:**
When trees are identified as possibly posing a potential threat to the public, utilities, or the roadway the Tree Crew removes them. Trees are limbed using the basket truck and the hydraulic saw. Then the tree is felled to the ground using fuel-powered chain saws. Limbs are chipped and the wood chips are used in other locations.

♦ **PURPOSE:**
Public safety, road drainage, visibility, and the elimination of potential hazard trees before they cause injuries or damage are all considerations in the removal of trees from the right-of-way.

♦ **APPLICATION:**
This may be used in all areas at any time of year.

♦ **LIMITATION:**
In critical areas, special precautions will be taken to minimize or eliminate any negative environmental impact.

♦ **APPLICATION GUIDELINES:**
- Identify and mark critical areas and setbacks.
- Site evaluations prior to maintenance; this would include on site visual inspections and the use of maps.
- Use of biodegradable bar oil in chainsaws.
- Crew will be familiar with a spill prevention plan and carry spill kits on site.
- Fueling of equipment will be done using a spill prevention pump and spill guard.
- Trim only what is necessary to provide a safe roadway.
- Use log removal equipment to minimize wood chips, sawdust and soil disturbance. Repair any disturbed soils using approved methods.

♦ **MAINTENANCE:**
- Regularly inspect all tools and equipment for leaks prior to operating.
- Ongoing training for staff.
- Ongoing updates and improvement of equipment
HAZARD TREE IDENTIFICATION AND REMOVAL

♦ DESCRIPTION:
Hazard trees are those trees that pose an immediate danger to people, public or private property, or utilities. Dead trees and trees damaged by weather, disease or wildlife may be considered hazard trees. The Vegetation Crew Leader (Certified Arborist) or the Basket Truck Operator may identify these trees. Reports of hazard trees may be received from other crew members or the public. Once a tree has been determined to be a hazard, removal becomes priority. Whatcom County is not responsible for the removal of any trees located on unmaintained right-of-way per RCW 36.75.080. Requests for removal of trees will be received by Public Works. If determined to be a hazard to the public and the right-of-way, they may be trimmed or removed. Equipment used includes the basket truck, hydraulic saw, fuel-powered saws, and a chipper and chip truck. Limbs are chipped and used in other locations.

♦ PURPOSE:
The purpose of this action is to identify and remove hazard trees.

♦ APPLICATION:
This may be used in all areas at any time of year.

♦ LIMITATION:
In critical areas, special precautions will be taken to minimize or eliminate any negative environmental impact.

♦ APPLICATION GUIDELINES:
• Respond as quickly as possible when notified of a potential hazard tree.
• Locate and determine if the tree is a hazard tree as defined by guidelines.
• Dispatch brush crew as soon as possible for the removal of the tree.
• Use a spill prevention plan and have a spill kit on-site
• In critical areas these precautions will be taken:
  1. Use of biodegradable bar oil for chain saws.
  2. Fueling of equipment will be done using a spill prevention pump and spill guard.
  3. Trim or remove only what is necessary to protect the public and threatened property.
  4. Use log removal equipment to minimize sawdust and soil disturbance. Repair any disturbed soils using approved methods.
Whenever possible, the Certified Arborist will determine if the tree is a hazard. The Vegetation Crew Leader will use all available resources to remove any immediate problem tree within right-of-way. Several licensed and bonded tree removal companies are available to assist with unusually hazardous tree removal situations.

♦ MAINTENANCE:
• Regular inspection of all tools and equipment before operating
• Ongoing training for staff and ongoing updates and improvements of equipment
STAFF
The mowing program is currently staffed with six Senior Road Maintenance Workers. During the summer one Road Maintenance Worker may be added to the crew for shoulder mowing. The Vegetation Crew Leader provides immediate supervision. The mowing program is utilized the entire year.

EQUIPMENT
Each mowing crew member operates a tractor with mowing attachments. Each tractor has a spill prevention kit.

TRAINING AND LICENSING
On-the-job training
Monthly safety trainings

TASKS
Long-Arm Mowing, Shoulder Mowing, Ditch Mowing

PERFORMANCE MEASUREMENT
Long-Arm Mowing – pass miles of roadside mowed
Shoulder Mowing – pass miles of roadside mowed
Ditch Mowing – pass miles of ditch mowed

GENERAL
The Vegetation Crew Leader works closely with the Public Works Biologist and coordinates with the mowing crew members to ensure that all work is performed in accordance with ESA requirements. Critical areas have been identified and fish culverts are being physically marked with green delineators with a picture of a fish on them. This ensures that mowers will know which areas and locations require special consideration. Appropriate guidelines have been developed for these locations. Changes and updates are done as necessary.
LONG ARM MOWING

♦ **DESCRIPTION:**
Long-arm mowing is the practice of clearing vegetation, primarily brush and small trees, from the right-of-way. Work is accomplished with a rotary or flail mowing head attached to an extendable boom mounted to a tractor. This practice would include ditches and intersections.

♦ **PURPOSE:**
Long-arm mowing improves visibility, promotes drainage, removes small trees before they can become a hazard, and reduces brush that can be a fire hazard in hot dry weather. Long-arm mowing helps reduce snow drifting in the northeast area of Whatcom County.

♦ **APPLICATION:**
This can be applied in the fall and winter when road shoulder vegetation is not actively growing and does not need to be mowed. It may be used in conjunction with other BMP’s.

♦ **LIMITATION:**
In critical areas, special precautions will be taken to minimize or eliminate any negative environmental impact.

♦ **APPLICATION GUIDELINES:**
- Identify and mark setbacks in critical areas.
- Mow the front of the ditch slope only, not the back slope in critical areas.
- Mower operators will be assigned areas. They will be familiar with their area and carry maps indicating any critical area of concern to their operation.
- Ditches in non-critical areas may be brushed as needed.

♦ **MAINTENANCE:**
- Regular maintenance and inspection of mower and mower head to minimize leaks or potential spills.
- Operators will be familiar with a spill prevention plan and carry spill kits.
- Ongoing training in critical areas issues for operators.
- Ongoing improvements in equipment.
**SHOULDER MOWING**

- **DESCRIPTION:**
  Road shoulders, the area from the pavement edge to the ditch, are mowed using rotary or flail mowers.

- **PURPOSE:**
  The purpose of shoulder mowing is to provide visibility, improve drainage, and reduce fire hazard.

- **APPLICATION:**
  This practice can be applied from spring to early fall when shoulder vegetation is actively growing and ongoing shoulder maintenance is required. It may be used in conjunction with other practices.

- **LIMITATION:**
  In critical areas, special precautions will be taken to minimize or eliminate any negative environmental impact.

- **APPLICATION GUIDELINES:**
  - Identify and mark areas of concern in critical areas.
  - Mower operators will be assigned areas. They will be familiar with their area and carry maps indicating any critical area of concern to their operation.

- **MAINTENANCE:**
  - Regular maintenance and inspection of mower and mower head to minimize leaks or potential spills.
  - Operators will be familiar with a spill prevention plan and carry spill kits.
  - Ongoing training in critical areas issues for operators.
  - Ongoing improvements in equipment.
DITCH MAINTENANCE

♦ **DESCRIPTION:**
Ditch maintenance is the practice of mowing ditches with a long-arm mower. Using a tractor mounted extendable boom and rotary mowing head, ditches will be cleared of undesirable vegetation.

♦ **PURPOSE:**
Clearing undesirable brush and trees from ditches encourages the growth of desirable grasses. This helps maintain the bio-filtration function of grass, making for cleaner water runoff. In addition, mowing insures positive drainage and reduces the breeding habitat of mosquitoes. Because they can potentially carry West Nile Virus, mosquitoes are of particular concern to the public.

♦ **APPLICATION:**
Long arm mowing is an important tool for maintaining critical drainages and minimizes mechanical ditching practices.

♦ **LIMITATION:**
In critical areas, special precautions will be taken to minimize or eliminate any negative environmental impact.

♦ **APPLICATION GUIDELINES:**
- Identify and mark setbacks in critical areas.
- Mow the front of the ditch slope only, not the back slope in critical areas.
- Ditches in non-critical areas may be brushed as needed.

♦ **MAINTENANCE:**
- Regular maintenance and inspection of mower and mower head to minimize leaks and spills.
- Operators will be familiar with a spill prevention plan and carry spill kits.
- Ongoing training for operators in critical areas issues.
- Ongoing improvements in equipment.
It is the explicit goal of the Integrated Roadside Vegetation Management Program to minimize the use of herbicides whenever practicable. Considerations include level of vegetation infestation, economic impacts, and ecologic consequences. When a chemical measure is chosen, minimization is achieved through proper herbicide selection, timely application, and the use of the lowest effective rate of herbicide.

The practices within this program require the most careful consideration. All herbicides used are currently registered by the Environmental Protection Agency and the Washington State Department of Agriculture. Application of herbicides is in accordance with State Department of Agriculture standards and chemical labels. Public Works Maintenance and Operations employees who apply the herbicides are licensed by the Washington State Department of Agriculture. In addition, these employees undergo continuous training to upgrade their expertise in the selection and safe application of herbicides. To ensure the herbicide program is properly implemented, there is a written policy and procedure manual covering storage, transportation, application, disposal of herbicides, as well as the safety of those who come in contact with herbicides. Herbicide labels and Material Safety Data Sheets (MSDS) are kept in the office and in the herbicide truck.

STAFF
The herbicide program is currently staffed with a licensed Road Maintenance Worker (Driver) and a licensed Senior Maintenance Worker (Applicator). Immediate supervision is provided by the Vegetation Crew Leader, who is also licensed.

EQUIPMENT
List of equipment used: herbicide spray truck with a computerized delivery system, a portable 25-gallon spray tank, back pack sprayers for smaller applications, and injection guns for selected noxious weeds.

TRAINING AND LICENSING
Washington State Department of Agriculture Pesticide License “Public Operator”
Washington State University IPM Program Certification (Continuing Education)

TASKS
Bare ground application, dormant brush application, noxious weed/selective weed control, signpost treatment, guardrail treatment, and miscellaneous projects.

PERFORMANCE MEASUREMENTS
Bare Ground Application – number of miles of treatment
Dormant Brush Application – number of miles of treatment
Noxious Weed Control – number of square feet of treatment
Signpost Treatment – number of sign posts treated
Guardrail Treatment – number of lineal feet treated
GENERAL
Maintenance and Operations is actively working to reduce the amount of herbicide utilized. Emphasis is placed on careful selection of product and using the lowest effective application rate with proper timing. Federal and State law requires the County to use the product according to its label.

HERBICIDE PRODUCT LIST*
Whatcom County uses the following products for limited herbicide applications: Aquatic formulation Glyphosate, Escort® (Metsulfuron), Polaris® (aquatic formulation Imazapyr), Milestone® (Aminopyralid), Esplanade™ (Indaziflam). Surfactants include Liberate®, Induce®, MSO®, Insist®90, Agri-Dex®. Products currently being rotated out include Veteran® 720 (2,4-D/Dicamba) and Garlon®4 (Triclopyr).

PETITIONED NO SPRAY AREAS
Areas that have been designated as “No Spray” per Chapter 12.48.030 of the Whatcom County Code currently include the following general areas: Lummi Reservation, Lummi Island, Point Roberts, Deming and Acme Valley area, watersheds of Lake Whatcom, Lake Samish, and Lake Padden, Cain/Reed Lake Areas, and all areas within the jurisdiction of the Whatcom County Shorelines Management Program. The County’s Vegetation Management Program and the Noxious Weed Program utilize Work Release crews from the Sheriff’s Department for manual work when herbicide use is not possible. A map illustrating the No-Spray areas can be found in Appendix II.

Four areas have Executive Exemptions (per WCC 12.48.030) for specific aquatic approved herbicide treatments for selected noxious weeds: Acme Valley, Lake Samish Watershed, Lummi Reservation and Lake Whatcom Watershed. Targeted noxious weeds are Knotweed and Yellow Floating Heart. Exemptions are also permitted in sensitive areas for extreme safety concerns. Only aquatic formulations and surfactants are permitted in the exempted sensitive areas.

OWNER WILL MAINTAIN AGREEMENT
Property owners have the option to maintain the road right-of-way abutting their property without herbicides. To do so, the property owner must enter into an Owner Will Maintain Agreement with the County and perform vegetation control/maintenance as outlined in the Agreement. An example Owner Will Maintain Packet is included in Appendix III.

HERBICIDE NOTIFICATION PROCESS
General public notice is provided annually in early spring and includes a Press Release and Public Notice (Appendix III). The Press Release is provided to the local news media. Public Notice is posted at various public places throughout the County and on the County website. The Press Release and Public Notice include the number of miles to be treated and information for entering into an Owner Will Maintain Agreement with Whatcom County.

Additionally, at least one week prior to road shoulder application, an Herbicide Notice (Appendix III) is posted at intersections and not less than every two miles. Information in the Herbicide Notice includes the names of the herbicides to be used, approximate date of application, and the telephone number to contact for further information. Notices are re-dated as to the actual date of application.

RECORD KEEPING
Thorough record keeping is maintained on a Daily Chemical Application Record (Appendix III), per State requirement for all herbicide applications. The record includes information about the treatment including location, chemical used, weather conditions, and applicator comments. Citizen inquiries pertaining to herbicide applications are recorded and addressed.

*products current as of 2017
BARE GROUND APPLICATION

♦ **DESCRIPTION:**
A bare ground application is a vegetation free strip next to the edge of the road pavement. Selected herbicides are applied to this zone using a roadside spray truck. This zone is usually a minimum of 12 inches, but the actual width varies according to the specific road shoulder.

♦ **PURPOSE:**
The purpose of the bare ground application is to prevent vegetation from damaging the road surface and to promote drainage. It also improves visibility and reduces fire hazard. In addition this vegetation free zone provides pedestrian access and a refuge for vehicles.

♦ **APPLICATION:**
This may be applied when vegetation is actively growing, as weather allows, from mid-March through early October. It may be used in conjunction with other practices.

♦ **LIMITATION:**
This application should not be used:
- When weather conditions do not permit including heavy rainfall, inversions, freezing temperatures, or wind velocity exceeding label recommendations.
- Within 24 hours of forecasted rainfall (via Weathernet)
- In critical areas and in designated no-spray areas.
- When the shoulder composition is not adequate to prevent erosion, bio-filtration function, or off-target application.

♦ **APPLICATION GUIDELINES:**
- Observe strict compliance to product labels, and State and local regulations.
- Careful selection of products, rates, and timing of application.
- Careful site evaluation prior to applications

♦ **MAINTENANCE:**
- Regular maintenance and calibration of all spray equipment.
- Ongoing site evaluations throughout the season.
- Ongoing training of staff including yearly re-certification.
- Ongoing improvement and updates of equipment and facilities.
NOXIOUS/SELECTIVE WEED CONTROL

**DESCRIPTION:**
A noxious weed application targets specific weed species that have been identified by the County Noxious Weed Board to be non-native and invasive to our area. These weed pests may pose a significant hazard to animal or human health, the economy, or to the environment. Examples of noxious weeds include knotweed, tansy ragwort, knapweed, poison hemlock, butterflybush, and wild chervil. Applications are made with selected herbicides chosen for their effectiveness on the weed being targeted and may be made with application equipment as determined appropriate by the site conditions and/or the target weed.

**PURPOSE:**
The purpose of this action is to control undesirable non-native weed species on County right-of-way and to prevent them from spreading. Left uncontrolled, these species spread rapidly, choking out desirable species and spreading onto adjacent properties. As infestations grow exponentially larger, these noxious weeds cause more damage and are more difficult and costly to control. In addition, State Law (Chapter 17.10 RCW) requires their management.

**APPLICATION:**
Each species will have a Best Management Practice (BMP) specific to that species, developed and provided by the Whatcom County Noxious Weed Program. Product label guidelines for timing and rates will be observed for best results. It may be used in conjunction with other practices, including biological and manual.

**LIMITATION:**
This practice should not be used:
- When weather conditions do not permit
- In critical areas and in designated no-spray areas.
- Within 24 hours of forecasted rainfall (via Weathernet)

**APPLICATION GUIDELINES:**
- Observe strict compliance to product labels, and to State and local regulations.
- Careful selection of products, rates, timing of application, and equipment to be used.
- Site evaluation, weed population to be controlled and consideration of other practices.

**MAINTENANCE:**
- Regular maintenance and calibration of all spray equipment.
- Early detection of targeted weed infestations and ongoing site evaluations.
- Ongoing training of staff including yearly recertification.
- Ongoing improvement and updates of equipment and facilities.
SIGN POST TREATMENTS

**DESCRIPTION:**
Signpost treatments are the application of non-selective and residual herbicides around the base of road signs. The size of the area depends on the location of the sign and the width of the shoulder. Applications are made with portable spray tanks.

**PURPOSE:**
The purpose of the signpost treatment is for public safety by improving visibility and to assist mower operators who cannot mow close to or behind signposts. This reduces mower damage to signs. Signpost treatment also helps the sign crew to locate the position of missing signs and aids them in sign maintenance. Public safety is enhanced through improved visibility at intersections and other areas where warning signs are located. We currently maintain more than 9,000 signs on County Roadways.

**APPLICATION:**
This may be applied at all times of the year, depending on the products being used. It is often used in conjunction with manual clearing of weeds and grasses.

**LIMITATION:**
This should not be used:
- When weather conditions do not permit. With granular products only freezing, snow, or very heavy rainfall would limit applications.
- Within 24 hours of forecasted rainfall (via WeatherNet)
- In critical areas and in designated no-spray-areas.
- Where the condition of the shoulder or the location of the sign might cause herbicide to contaminate the water.

**APPLICATION GUIDELINES:**
- Observe strict compliance to product labels, and State and local regulations
- Careful site evaluation at time of application.

**MAINTENANCE:**
- Regular maintenance and calibration of spray equipment.
- Site evaluation prior to treatment.
- Ongoing training of staff including yearly re-certification.
- Ongoing improvement and updates of equipment and facilities.
GUARDRAIL TREATMENTS

◆ **DESCRIPTION:**
Methods of guardrail treatments include the application of herbicides in front of, under, and in some cases, behind guardrails. These herbicides are applied to this zone using a portable spray tank. Guardrails cannot be effectively maintained by County mowers. In some cases, seasonal crews maintain guardrails using manual methods.

◆ **PURPOSE:**
The purpose of this application is to aid in guardrail maintenance and enhance public safety through improved visibility.

◆ **APPLICATION:**
This may be applied when vegetation is actively growing. It may be used in conjunction with other manual practices.

◆ **LIMITATION:**
This should not be used:
- When weather conditions do not permit.
- Within 24 hours of forecasted rainfall (via Weathernet)
- In critical areas and in designated no-spray-areas.
- When the composition of the shoulder under or behind the guardrail is not adequate to prevent erosion or off-target application.

◆ **APPLICATION GUIDELINES:**
- Observe strict compliance to product labels, and State and local regulations.
- Careful product selection to include the use of the aquatic herbicide Rodeo when appropriate.
- Careful site evaluation prior to and following applications.

◆ **MAINTENANCE:**
- Regular maintenance and calibration of all spray equipment.
- Ongoing site evaluations.
- Ongoing training of staff including yearly re-certification.
- Ongoing updates of equipment and facilities.
MISCELLANEOUS PROJECTS

♦ **DESCRIPTION:**
Miscellaneous Projects is the application of selected herbicides to a variety of County facilities. Included are Central Shop, gravel pits, and in preparation for new road construction. Products are chosen to best suit the needs of the specific area or the weed(s) to be controlled. Application is made using a spray truck, portable spray tanks, or calibrated granular spreaders.

♦ **PURPOSE:**
The purpose of these various applications is to control undesirable weeds in County facilities, to control or eliminate noxious weeds in these locations, or to prepare traffic islands for planting.

♦ **APPLICATION:**
This may be applied when the vegetation is actively growing, or in the case of granular pre-emergent products, any time of year as weather permits. It may be used in conjunction with other BMP’s.

♦ **LIMITATION:**
This should not be used:
- When weather conditions do not permit.
- Within 24 hours of forecasted rainfall (via WeatherNet)
- In critical areas and in designated no-spray-areas.

♦ **APPLICATION GUIDELINES:**
- Observe strict compliance to product labels, and to State and local regulations.
- Careful selection of products, rates, and timing of applications.
- Careful site evaluation prior to applications.

♦ **MAINTENANCE:**
- Regular maintenance and calibration of spray equipment.
- Ongoing site evaluations.
- Ongoing training of staff including yearly re-certification.
- Ongoing improvement and updates of equipment and facilities.
### HERBICIDE TREATMENT CALENDAR

This treatment calendar shows general guidelines for treatments of listed noxious and invasive weed species. It is intended as a basic reference framework from which decisions are made for weed treatments. Seasonal variables are considered and addressed as they become evident (weather, staff availability, etc.). Additionally, changes to the Whatcom County Noxious Weed List may make it necessary to adjust the current calendar and the target species.

<table>
<thead>
<tr>
<th>Noxious Weed</th>
<th>FALL</th>
<th>WINTER</th>
<th>SPRING</th>
<th>SUMMER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Manual removal/digging</td>
<td>Foliar herbicide treatment (rosette stage)</td>
<td>Foliar herbicide treatment (rosette stage)</td>
</tr>
<tr>
<td>KNOTWEED SPECIES</td>
<td>Foliar herbicide treatment or injection</td>
<td>Plants die back - no action</td>
<td>Mowing for sight distance issues</td>
<td>Foliar herbicide treatment or injection (late summer)</td>
</tr>
<tr>
<td>WILD CHERVIL</td>
<td>Manual removal/digging</td>
<td>Plants die back - no action</td>
<td>Manual removal/digging</td>
<td>Foliar herbicide treatment</td>
</tr>
<tr>
<td>ORANGE HAWKWEED</td>
<td>Foliar herbicide treatment</td>
<td>Plants die back - no action</td>
<td>Foliar herbicide treatment</td>
<td>Foliar herbicide treatment</td>
</tr>
<tr>
<td>EUROPEAN HAWKWEED</td>
<td>Foliar herbicide treatment</td>
<td>Plants die back - no action</td>
<td>Foliar herbicide treatment</td>
<td>Foliar herbicide treatment</td>
</tr>
</tbody>
</table>
SPECIALIZED MAINTENANCE ACTIVITIES

The Vegetation Program supports several specialized maintenance activities which include hydro-seeding, storm water facilities, sidewalks, and traffic islands. This is a combined effort between the vegetation crew, temporary summer help, and corrections crews. These activities include some of our smaller maintenance activities but are very important for safety and water quality.

STAFF
This program is staffed with a Road Maintenance Workers and Senior Maintenance Workers and (2) flagger support with the main crew. Immediate supervision is provided by the Vegetation Crew Leader. The hydro-seeding program began in 2003. Stormwater facility installations have increased and now include 12 ponds and 19 bio-swales.

EQUIPMENT
800-gallon “Bowie Hydro Mulcher” Hydro-Seeder, single axle dump truck, reader board pick-up truck.

TRAINING AND LICENSING
State Erosion and Sediment Control Certification
Washington State Department of Agriculture
Pesticide License “Public Operator”

TASKS
Hydro-seed application
Sidewalk vegetation maintenance
Traffic island maintenance
Storm water facility maintenance

PERFORMANCE MEASUREMENT
Hydro-Seed Application – number of square feet of area treated
Hydro-Seed Application – number of sites treated
Sidewalks – miles managed
Traffic Islands – number of lineal feet treated
Stormwater Facilities – number of labor hours utilized

GENERAL
Hydro-seeding is necessary to prevent erosion for land disturbance activities in sensitive areas performed by M&O (i.e. ditching, culvert replacement, bridge replacement, etc.) that would otherwise result in erosion and sedimentation. Sidewalks are maintained for safety and maintenance of traffic islands is important for sight distance for drivers and are part of the aesthetics of county right-of-ways.
STORM WATER FACILITY MAINTENANCE

**DESCRIPTION:**
Road construction in the County includes the construction of storm water facilities that are designed to provide bio-filtration for clean water runoff and meet the NPDES Phase II requirements. Maintenance of these ponds is currently assigned to the Vegetation Program. Maintenance includes mowing bio-swales, bagging and properly disposing of grass clippings, picking up woody debris, and removing undesirable vegetation and noxious weeds. This is generally done manually with brush saws and hand pulling; Temporary Help and the Corrections Crew perform most of the work. There are currently 12 ponds and 19 bio-swales maintained throughout Whatcom County.

**PURPOSE:**
The purpose is to maintain storm water facilities so that they may continue to perform the bio-filtration function as designed.

**APPLICATION:**
This may be applied any time of year, but most work is generally done during the summer when vegetation is actively growing.

**LIMITATION:**
There is no limitation for this maintenance.

**APPLICATION GUIDELINES:**
- Check facility and perform maintenance on a regularly scheduled basis and as needed.
- Maintenance performed will be specific to the guidelines established for each individual facility.
- Care will be taken to protect desirable vegetation when removing unwanted vegetation.
- Grasses in the bio-swales should be maintained at a height of 4 to 6 inches and cut material be hauled to an approved disposal site.
- Noxious plants will be documented and removed according to state and local guidelines.
HYDRO-SEEDING

**DESCRIPTION:**
Hydro-seeding uses a machine that broadcasts grass seed, tackifier, wood fiber mulch and water on soils that have been disturbed by road maintenance functions such as road construction, shoulder rehabilitation ditching, or in areas that require erosion control. This practice minimizes potential soil movement either by becoming airborne or in water runoff. Establishing grass stands in these disturbed areas reduces water velocity and aids in establishing and maintaining natural habitat.

**PURPOSE:**
The purpose of this function includes, but is not limited to:
- Establishing vegetation in sparse, bare and/or exposed soil areas over a large site.

**APPLICATION:**
This application may be used after any soil disturbance due to road maintenance to include shoulder picking, ditching, bridge repair and construction, guardrail maintenance, or any project causing land disturbance. It may be used in conjunction with other practices.

**LIMITATION:**
This function should not be used:
- When weather conditions would prevent seed from germinating.
- No tackifiers or fertilizers should be used in critical areas unless it is an aquatic approved material.

**APPLICATION GUIDELINES:**
- Seed selection should be based on the intended use and the area in which it will be used.
- Spread seed uniformly and follow manufacturer’s recommendations.
- Cover hydro-seeded areas with other methods as needed.
- Hydro-seeding should be applied after finish grading and/or surface roughening. Applications may depend on slope, soil, exposure and time of year.
- Tackifier and/or moisture retention agent may be added per state standard and in accordance with guidelines involving critical areas.

**MAINTENANCE:**
- Inspect during seed establishment period. Re-seed as necessary.
- Check during storm events. Monitor for scour and sloughing and repair as needed.
TRAFFIC ISLANDS

♦ DESCRIPTION:
Traffic islands are currently planted and maintained by Maintenance and Operations in many locations in the county. Maintenance on these islands is done by the herbicide crew and is part of their budget. Desirable plants and groundcovers provide competition to undesirable weeds and grasses, forage for pollinators, and an aesthetically pleasing right-of-way.

♦ PURPOSE:
The purpose of this practice is to create an aesthetically pleasing right of way, improve site distance for motorists, and discourage the invasion of undesirable weeds and grasses.

♦ APPLICATION:
This practice may be applied during the growing season.

♦ LIMITATION:
This function should not be used when weather conditions do not permit.

♦ APPLICATION GUIDELINES:
- In spring, as soon as weather permits, islands are cleared of debris and any undesirable weeds and grasses.
- When weeds and grasses have been cleared from islands, they are tilled.
- After tilling, selected desirable plants/groundcovers are planted.
- During the growing season islands are monitored. If rain is insufficient, islands are watered using the separate water tank from the herbicide truck.
- Traffic islands are mowed or cut as needed, typically in mid-summer.

♦ MAINTENANCE:
- Carefully select desirable and non-invasive plants/groundcovers and evaluate during season
- Monitor islands regularly during growing season
- Water as necessary when there is insufficient rainfall
- Remove any undesirable weeds from the islands, especially noxious weeds
SIDEWALKS

♦ DESCRIPTION:
Sidewalk maintenance includes following state and federal guidelines for inspections, rating, repairs, trimming vegetation, and sod removal. Traffic islands involve noxious weed control and mowing for safety and aesthetics.

♦ PURPOSE:
The purpose of this practice is to provide safe sidewalks and right of way for the public.

♦ APPLICATION:
This practice can be applied year round, but mostly during the dryer months.

♦ LIMITATION:
In critical areas, special precautions will be taken to minimize or eliminate any negative environmental impact.

♦ APPLICATION GUIDELINES:
- Regular inspection and rating of sidewalks and islands
- Trim vegetation when needed
- Repair sidewalks when deemed necessary

♦ MAINTENANCE:
- Regular maintenance of all tools and equipment
- Ongoing training in critical areas and sidewalk inspection
- Water as necessary when there is insufficient rainfall
APPENDIX

Appendix I
Whatcom County Code Chapter 12.48 “Roadside Vegetation Management Program”

Appendix II
No Spray Areas Map

Appendix III
Forms and Records:

Storm Water Facility Maintenance and Inspection Form
Daily Chemical Application Record
Roadside Spray Sign Posting
Public Notice
Owner Will Maintain Packet including:
  Letter to Prior Owner Will Maintain Signatories
  Road Right-Of-Way Maintenance Agreement
  Indemnification and Hold Harmless Agreement
  Owner Will Maintain Spray Options with Explanations
  Owner Will Maintain Default Letter
  Owner Will Maintain Sign Posting Instructions
  Owner Will Maintain Sign