

Chapter III

Site-specific Planning Steps

In this chapter:

- **Site-specific Planning Steps**
- **Mitigation Measures**

Planning Steps Overview

This chapter describes the seven Planning Steps that we are proposing to use for site-specific vegetation management projects. The Planning Steps will be a tool for ensuring that environmental aspects are considered as part of an integrated vegetation management strategy and under NEPA.

The **Planning Steps** are as follows:

- 1. Identify facility and the vegetation management need.**
- 2. Identify surrounding land use and landowners/managers.**
- 3. Identify natural resources.**
- 4. Determine vegetation control methods.**
- 5. Determine debris disposal and revegetation methods, if necessary.**
- 6. Determine monitoring needs.**
- 7. Prepare appropriate environmental documentation.**

Note: These steps apply to *planned* maintenance, not to *emergency* maintenance.

Each Planning Step has a set of **mitigation measures** used to avoid or reduce potential environmental impacts. Not all measures would be appropriate for all program alternatives. For example, a right-of-way alternative that does not use herbicides would (appropriately) not need any herbicide mitigation measures.

The Planning Steps and mitigation measures will provide a consistent and efficient process for ensuring that NEPA compliance and environmental and landowner concerns are considered when making decisions about vegetation control. A checklist will be developed based on these steps to facilitate the process.

The Project Manager—the person responsible for the vegetation management at a particular facility—would ensure that these steps are carried out.

Currently, Bonneville prepares for site-specific vegetation management on an individual basis, without program-wide direction. We plan to adopt the program-wide Planning Steps to help foster consistency across projects, jurisdictions, and over time.

This chapter also has the Federal laws that may pertain to vegetation management. Other laws that were considered, but do not pertain to this action, are listed at the end of the chapter.

Federal laws are stated in shaded boxes within the text.

1. Identify facility and the vegetation management need.

In this step, Project Managers would do the following:

- Identify the facility needing vegetation control (i.e., right-of-way, access road, electric yard) and the safety and electrical clearance requirements that need to be met.
- Identify the types of vegetation needing control (i.e., tall-growing vegetation, noxious weeds) and the density of the growth.

Rights-of-Way

For rights-of-way, Project Managers would apply the following mitigation measures, as appropriate.

As defined here, rights-of-way include access roads and microwave beam paths.

- *With the use of applicable mitigation measures, methods that may be appropriate for controlling vegetation on rights-of-way include manual, mechanical, herbicide (spot, localized, broadcast, and aerial), and biological controls (for noxious weeds).*
- *Around transmission structures, control all tree and brush species within about 9 m (30 ft.) of structures. Cut stumps are not to be*

taller than 5 – 10 cm (2 – 4 in.). These species include blackberries, poison oak, scotch broom, and other vegetation that, by size or density, might hinder routine inspection and maintenance work or make it more hazardous.

- Pull all debris and slash out of the 9-m (30-ft.) area around transmission structures.
- *On the right-of-way*, control all tall-growing species that are now or would be a hazard to the line. Cut stumps are not to be taller than 10 - 15 cm (4 - 6 in.).
- *On access roads*, control all vegetation except grasses, to enable safe driving.
 - * The access road is 4 to 8 m wide (14 to 25 ft. wide) and requires a 5-m- (15-ft.-) high clearance. Limbs should not hang down into the access road.
 - * Cut stumps are not to be taller than 5 – 10 cm (2 – 4 in.) in the roadbed.
 - * Stumps will be cut horizontal to the ground to prevent personal injuries and tire puncture.
 - * Limbs are to be trimmed back as flush to the trunk as possible when trees are rooted outside of the access road.
 - * All debris is to be pulled back from the access road as prescribed.
- *For danger trees*, remove all off-right-of-way trees that are potentially unstable and would fall within a minimum distance or the safety zone of the power line, as well as trees that could blow into that zone or enter into the zone when the conductor swings. Tree growth within the treatment cycle should be taken into consideration when selecting trees. (See **Appendix E** for danger tree clearance criteria.)
- *For microwave beam paths*, cut trees when they have grown into the beam path, creating signal disruption.

Promoting Low-growing Plant Communities

Consider the following steps or mitigation measures to promote a semi-stable low-growing plant community:

1. Remove existing tall-growing vegetation. If using manual methods to eliminate deciduous (resprouting-type) species, do follow-up herbicide treatments to ensure that the roots are killed.



2. Replant or reseed with ground cover if none exists or if there is a low potential for natural revegetation by low-growing species (and a high potential of natural revegetation by tall-growing species).
3. Maintain, by selectively eliminating tall-growing vegetation before it reaches a height or density to begin competition with low-growing species.
4. As much as practical, be careful not to disturb low-growing plants. When possible, use only selective vegetation control methods (such as spot herbicide applications) that have little potential to harm non-target vegetation.

Electric Yards

For electric yards, Project Managers would apply the following mitigation measures, as appropriate.

Electric yards are defined as substations, switching stations, and electric yards (including a 3-m or 10-ft. bare-ground buffer zone outside the fenced area).

- *With the use of applicable mitigation measures, methods that may be appropriate for controlling vegetation in and around electric yards are herbicide (spot, localized, and broadcast applications) with very selective use of weed burners, steamers, selective hand-pulling.*
- Use only herbicides that (1) will not corrode ground mats, underground facilities, or other metals on site; (2) are non-combustible; and (3) are non-conductive.
- Select and rotate the use of herbicide products to prevent weeds from developing resistance to herbicides.
- Avoid spray drift during application.
- *For electric yards within 100 m (328 ft.) of wells, streams, rivers, or wetlands, determine whether the water body should be monitored for potential herbicide contamination.*
- Observe all riparian buffer and pesticide-free zones established in Tables III-1 and III-2 (page 62).

Non-electric Facilities

For non-electric facilities, Project Managers would apply the following mitigation measures, as appropriate.

Non-electric facilities are defined as microwaves, maintenance yards, and the grounds surrounding electric yards or maintenance facilities.

Guidance for Environmentally and Economically Beneficial Practices on Federal Landscaped Grounds (1995; 60 FR 40837) directs Federal agencies to incorporate, to the extent practicable, guidance for

environmentally and economically beneficial practices into their landscaping programs and practices.

- *With the use of applicable mitigation measures, methods that may be appropriate for controlling vegetation at non-electric facilities include manual, mechanical, and herbicide (spot, localized, and broadcast).*
- *Where cost-effective and to the extent practicable, use regionally native plants for landscaping.*
- *Where cost-effective and to the extent practicable, seek to prevent pollution by, among other things, reducing fertilizer and pesticide use, using integrated pest management techniques, recycling green waste, and minimizing runoff.*
- *Where cost-effective and to the extent practicable, implement water-efficient practices, such as the use of mulches, efficient irrigation systems, audits to determine exact landscaping water-use needs, recycled or reclaimed water, and the selecting and siting of plants in a manner that conserves water and controls soil erosion.*

For noxious weeds, Project Managers will take the following mitigation measures, as appropriate.

*The **Federal Noxious Weed Act (amended 1990)** directs Federal agencies to develop and implement **Integrated Pest Management Noxious Weed Programs**.*

- *With the use of applicable mitigation measures, methods that may be appropriate for controlling noxious weeds include the use of biological controls and herbicides (spot, localized, broadcast, and aerial applications).*
- *Take full responsibility for controlling noxious weeds on fee-owned property.*
- *Enter into active noxious weed control programs with land owners/managers or county weed control districts where Bonneville activities may have caused or aggravated an infestation.*
- *Where appropriate, provide herbicides or biological control agents to landowners.*
- *Consider, when practical, washing vehicles that have been in weed-infested areas (removing as much weed seed as possible) before entering areas of no known infestations.*

Noxious Weeds

- Consider, when practical, re-seeding soil disturbed areas with approved weed-free seed.

2. Identify surrounding land use and landowners/ managers.

In this step, Project Managers would do the following:

- Evaluate, generally, existing land uses (e.g., agriculture, residential) along a right-of-way or surrounding a facility needing vegetation control to determine any constraints on vegetation control.
- *To the extent practicable*, identify casual informal use of the right-of-way by non-owner publics to determine any constraints on vegetation control.
- Determine, generally, landowners or land managers (i.e., private residential, timber company, Federal, state) in or around the facility needing vegetation control.
- Determine whether there are any existing landowner agreements with provisions that need to be followed regarding the vegetation maintenance of a specific portion of line.
- Determine appropriate level of public involvement, notification or coordination that may be necessary. (Public contact may take place in a number of ways: notice in a local newspaper, phone calls, meetings, letters, door-hangers.)
- *If needed*, use public contact to help find out about any special uses of the land, or other issues or concerns that might need consideration when determining or scheduling vegetation control.

Agriculture

For agricultural areas, Project Managers would apply the following mitigation measures, as appropriate.

The Farmland Protection Policy Act (7 USC 4201 et seq.) directs Federal agencies to identify and quantify adverse impacts of Federal programs on farmlands. Vegetation management activities will not contribute to irreversible conversion of agricultural land to non-agricultural uses.

- *With the use of applicable mitigation measures*, methods that may be appropriate for controlling vegetation in agricultural areas include manual, mechanical, biological (for noxious weeds), and

herbicide (spot, localized applications, and [potentially] broadcast and aerial applications).

- Prevent the spread of noxious weeds by cleaning seeds from equipment before entering cropland.
- *If on grazing lands and there is potential for pine needle poisoning, do not lop and scatter pine tree vegetative debris—machine-chip or haul debris off-site.*
- *If using herbicides on grazing lands, comply with grazing restrictions as required per herbicide label.*
- *If using herbicides near crops for consumption, comply with pesticide-free buffer zones, if any, as per label instructions.*
- *For rights-of-way adjacent to agricultural fields, observe appropriate buffer zones necessary to ensure that no drift will affect crops.*
- *For rights-of-way near organic farms, determine appropriate no-herbicide or spot-herbicide-only buffer zones, or provide for the owner to maintain the right-of-way, by way of a vegetation management agreement.*
- *If reseeding, determine whether any of the adjacent properties are being, or will in the immediate future be, used for growing grass seed, especially high-purity strains.*
- *If reseeding near grass-seed fields, consult with the area seed certification and registration authority to determine whether buffer zones are necessary, appropriate grass mixtures allowed, and appropriate modes of seeding used.*

For residential or commercial areas, Project Managers would apply the following measures, as appropriate.

The Federal Noise Control Act of 1972 (42 U.S.C. 4903) requires that Federal entities such as Bonneville comply with state and local noise requirements.

- *With the use of applicable mitigation measures, methods that may be appropriate for controlling vegetation in residential/commercial areas include manual, mechanical, biological (for noxious weeds), and herbicide (spot, localized applications and [potentially] broadcast applications).*
- *Where appropriate, assign responsibility for tall-growing species on the rights-of-way to underlying property owner (i.e., to owners of orchards or Christmas tree farms).*

Residential/ Commercial

USFS-managed Lands

- *If appropriate, offer to replace trees (with a low-growing species), or use tree growth regulators instead of removing a tree.*

For USFS-managed lands, Project Managers would apply the following mitigation measures, as appropriate.

*The **Federal Land Policy and Management Act (1976)** provides guidance for the uniform, periodic, and systematic inventories of Federal public lands and their resources.*

- Use, update, or develop site-specific vegetation management plans for rights-of-way that cross USFS-managed lands.
- Review existing site-specific vegetation management plans for consistency with USFS specific mitigation measures identified in **Appendix F**. This EIS does not supercede or revoke any existing agreements or site-specific vegetation management plans. However, if appropriate, work with local Forest Officer in revising existing plans to achieve consistency.
- Develop site-specific vegetation management plans (where they do not already exist) using the Planning Steps and mitigation measures in this EIS, including the USFS -specific measures in **Appendix F**. Conduct appropriate NEPA analysis and documentation (see Planning Step #7).
- Contact the local Forest Supervisor's or District Ranger's office, before implementing vegetation management activities on national Forest System lands (or follow direction in site-specific vegetation management plans for notification procedures). Notification should be made as far in advance of the planned date of on-the-ground implementation as is reasonably possible.
- *If expecting the USFS to conduct environmental data collection for evaluation, allow more than one year for completion, and be prepared to reimburse the USFS for the costs in conducting such activities.*
- *With the use of applicable mitigation measures, methods that may be appropriate for controlling vegetation on USFS-managed lands include manual, mechanical, biological (for noxious weeds), and herbicide (spot, localized applications, and [potentially] broadcast and aerial applications).*
- Comment on and be involved in Forest Plan updates to include utility corridor management areas.
- See **Appendix F** for additional mitigation measures specific to USFS-managed lands.

For BLM-managed lands, Project Managers would apply the following mitigation measures, as appropriate.

- Use, update, or develop site-specific vegetation management plans for rights-of-way that cross BLM-managed lands.
- Contact the local BLM office, before implementing vegetation management activities on BLM lands (or follow direction in site-specific vegetation management plans for notification procedures). Notification should be made as far in advance of the planned date of on-the-ground implementation as is reasonably possible.
- *For NEPA compliance on BLM-managed lands, use the Planning Steps and mitigation measures in this EIS, including the BLM-specific mitigation measures (see **Appendix G**) and appropriate NEPA analysis and documentation (see Planning Step #7).*
- Consult with appropriate BLM regarding presence of natural resources and features and appropriate buffers or other mitigation measures.
- *With the use of applicable mitigation measures, methods that may be appropriate for controlling vegetation on BLM-managed lands include manual, mechanical, biological (for noxious weeds), and herbicide (spot, localized applications, and [potentially] broadcast and aerial applications).*
- See **Appendix G** for additional mitigation measures specific to BLM-managed lands.

For facilities that are on other Federal lands, Project Managers would apply the following mitigation measures, as appropriate.

- *With the use of applicable mitigation measures, methods that may be appropriate for controlling vegetation on other Federal lands include manual, mechanical, biological (for noxious weeds), and herbicide (spot, localized, broadcast, and aerial applications).*
- Notify, consult and cooperate with other Federal agencies (such as the US Army Corps of Engineers [Corps]) when scheduling right-of-way vegetation control activities on their lands.

BLM-managed Lands

Other Federal Lands

Tribal Reservations

For facilities that are on Tribal reservations, Project Managers would apply the following mitigation measures, as appropriate.

Bonneville's Tribal Policy (April 1996) follows the Department of Energy's American Indian Policy (DOE Order No. 1230.2) for Bonneville's Trust responsibility as a Federal agency; it provides a framework for a government-to-government relationship with the thirteen Federally recognized Columbia Basin Tribes. Notify, consult, and cooperate with Tribal representative when scheduling right-of-way vegetation control activities.

- If possible and practical, develop a cooperatively written right-of-way management plan with the Tribe. The plan should address specific land-use or environmental resources along the corridor that need consideration, including appropriate mitigation measures identified in this EIS.
- If possible, consider working with Tribes for replanting of traditional use plants. Low-growing traditional-use plants may include blue camas, bitter root, wild celery, biscuit root, Canby's desert parsley, Indian carrot/false caraway, field mint, blue huckleberries.
- *With the use of applicable mitigation measures, methods that may be appropriate for controlling vegetation on Tribal reservations include manual, mechanical, biological (for noxious weeds), and herbicide (spot, localized applications and potentially broadcast and aerial applications).*

3. Identify natural resources.

In this step, Project Managers would do the following:

- Identify natural resources, or the potential for the presence of natural resources, that could be affected by vegetation management activities. These resources might include wetlands, springs, and threatened or endangered species, etc. Any consultations or contacts made through Step 2, above, could be used to help identify the natural resources along a given right-of-way or site.
- Determine whether mitigation measures should be applied or specific control methods should be used, based on the presence or potential presence of those resources.

Water Resources

For water resources (streams, rivers, lakes, wetlands, wells), Project Managers would apply the following mitigation measures, as appropriate.

Discharge Permits under the Clean Water Act regulate discharges into waters of the United States, including wetlands.

Section 401 of the Clean Water Act regulates discharges into navigable waters.

Section 402 of the Clean Water Act regulates storm water discharges associated with industrial activities under the National Pollutant Discharge Elimination System (NPDES). The regulation includes a general permit authorizing Federal facilities to discharge storm water from construction activities (that can include tree clearing) disturbing land of 2 or more ha (5 or more ac.) into waters of the U.S. The conditions for the permit include preparation of a Storm Water Pollution Prevention (SWPP) plan.

Section 404 of the Clean Water Act requires permits from the U.S. Army Corps of Engineers to discharge dredged or fill material into waters of the U.S. (Vegetation debris left in a stream or wetland could be considered fill material.)

The Department of Energy (Bonneville's parent agency) has regulations for environmental review to be in compliance with Floodplains/Wetlands requirements (10 CFR 1022.12, and Executive Orders 11988 and 11990).

The Safe Drinking Water Act (42 U.S.C. sec 300f et. Seq.) is designed to protect the quality of public drinking water and its sources. State and local public drinking water regulations including sole-source aquifers.

- With the use of applicable mitigation measures, methods that may be appropriate for controlling vegetation near water resources include manual, biological (for noxious weeds), some mechanical methods, and potentially some herbicides (see Tables III-1 and -2 for Riparian Buffer and Pesticide Free Zones).
- Use selective control methods and take care not to affect non-target vegetation.
- Leave vegetation intact, where possible.
- Recognize that any discharge of material (displaced soils) within a water of the U.S. may be subject to Corps regulations under the Clean Water Act.
- Notify inspector and the State of any amount of herbicide spill in or near water.



- Consider climate, geology and soil types in selecting the herbicide with lowest relative risk of migrating to water resources.
- *If using herbicides*, it may be necessary to leave untreated zones (filter strips) to preclude the possibility of herbicide movement from the application site to adjoining water bodies. See Tables III-1 and III-2.

Table III-1: Riparian Buffer Zones

Method	Buffer Width From Habitat Source, i.e., Stream or Wetland
Ground-disturbing Mechanical Methods	
Slopes under 20%	10.7 m (35 ft.) ¹
Slopes over 20%	No disturbance.
Herbicide Application Methods	
Spot	3 m (10 ft.) ² (Standard may be relaxed for capsule injection of glyphosate up to the water's edge.)
Localized	10.7 m (35 ft.) ¹
Broadcast	15.2 m (50 ft.) ³
Aerial	30.5 m (100 ft.) ²
Mixing, Loading, Cleaning	100 m (328 ft.) ³

¹ USDA, Natural Resources Conservation Service (NRCS), Conservation Practice Standard, Riparian Forest Buffer, Code 391A, 1997

² USDOJ-BLM Standard

³ USDOE-BPA Best Management Practice

Table III-2: Herbicide-free Zones

Zone	Buffer Width
Agricultural Irrigation Source (Wet or Dry)	30.5 m (100 ft.) ¹
Domestic Water Well	30.5 m (100 ft.) ¹
Public Water Intakes/Spring Developments	100 m (328 ft.) Upslope ¹
Secondary Containment Liners, Vaults, and Lagoons	Up to Edge of Containment Feature ¹
Storm Drains that Discharge Offsite	2 m (6 ft.) Radius ¹

¹ USDOE-BPA Best Management Practice

These are generalized standards. Other Federal agencies, as well as State and local authorities, may have stricter or more relaxed buffer zone requirements for the protection of these and other resources such as sole-source aquifers, fisheries, recreation areas, etc.

For threatened or endangered (T&E) plant or animal species, Project Managers would apply the following mitigation measures, as appropriate.

The Endangered Species Act (ESA) (16 USC 1536) provides for conserving endangered and threatened species of fish, wildlife and plants. Federal agencies must determine whether proposed actions would adversely affect any endangered or threatened species.

- *With the use of applicable mitigation measures, methods that may be appropriate for controlling vegetation in places that potentially have sensitive or threatened and endangered (T&E) species include manual, biological (for noxious weeds), mechanical (except in areas of T&E plants), and herbicide (spot applications).*
- *Determine whether any T&E species or designated T&E critical habitats are potentially present in the project area (through the use of T&E maps, specialist's determination, or T&E list from the U.S. Fish and Wildlife Service (USFWS) and/or National Marine Fisheries Service (NMFS)).*
- *If T&E species or designated critical habitats are potentially present in the project area, determine whether they are likely to be affected. If project is likely to affect but not adversely affect T&E species, obtain concurrence from the USFWS and/or NMFS.*
- *If it is determined that the project is likely to adversely affect T&E species or their designated critical habitats (other than marbled murrelet and spotted owl, already formally consulted), initiate formal consultation with the USFWS and/or NMFS and prepare a Biological Assessment according to 40CFR Part 402.*
- *Apply mitigation measures (such as timing restrictions, or specific method use) resulting from determinations or consultations.*

Marbled Murrelet

The specifications below are based on Bonneville consultation with USFWS (1995) on our maintenance program, which includes vegetation management. These specifications apply in areas determined to be suitable marbled murrelet habitat (Peterson, 1995).

Threatened or Endangered Species and Critical Habitat

- *If a tree needing removal is greater than 80 cm (32 in.) diameter at breast height and has suitable nest tree characteristics, initiate formal consultation with the USFWS.*
- *During core breeding season, from April 1- August 5, do not carry out maintenance activities (e.g., chainsaw work) that produce noise above ambient noise levels, within 0.4 km (0.25 mi.) of known marbled murrelet habitat or occupancy (based on marbled murrelet maps).*
- *During the late breeding season, from August 6 - September 15, do not carry out maintenance activities using motorized equipment within 0.4 km (0.25 mi.) of marbled murrelet habitat or occupancy within two hours after sunrise or within two hours before sunset.*

Spotted Owl

The suitable spotted owl habitat specifications below are based on Bonneville consultation with USFWS (1992) on Bonneville's maintenance program, which includes vegetation management. (USFWS, 1992).

- *Where opportunity exists, suspend vegetation management activities within 0.4 km (0.25 mi.) of spotted owl critical habitat between March 1 and June 30, unless the owls are shown not to be nesting.*
- *Examine any large trees (greater than 20.3 cm [8 in.] diameter at breast height east of the Cascades, or 28 cm [11 in.] diameter at breast height west of the Cascades) that need to be removed in spotted-owl habitat for evidence of owls. If a tree has evidence of owl nesting activity, conduct formal consultation with the USFWS.*
- *In case of an emergency danger tree removal—a tree suddenly becoming an imminent threat to the line, posing a danger to life and property—immediately examine the felled tree for evidence of owl nesting. If such evidence is found, start emergency consultation with the USFWS, or, if the situation occurs during off-duty hours, conduct after-the-fact emergency consultation the next business day.*

The Fish and Wildlife Conservation Act of 1980 (16 USC 2901 et seq.) encourages Federal agencies to conserve and promote conservation of non-game fish and wildlife species and their habitats. In addition, the Fish and Wildlife Coordination Act (16 USC 661 et seq.) requires Federal agencies

undertaking projects affecting water resources to consult with the USFWS and the state agency responsible for fish and wildlife resources.

In visually sensitive areas, Project Managers would apply the following mitigation measures, as appropriate.

- With the use of applicable mitigation measures, methods that may be appropriate for controlling vegetation in visually sensitive areas include manual, mechanical, biological (for noxious weeds), and herbicide (spot and localized applications).
- Limit use of broadcast foliar application of herbicide to reduce the creation of large areas of browned vegetation.
- At road crossings, highways/visual overlooks, leave sufficient vegetation, where possible, to screen view of right-of-way.
- If the area is a very sensitive visual resource, consider (1) planting low-growing tree seedlings adjacent to the right-of-way (or providing low-growing seedlings to landowner for planting); (2) softening the straight line of corridor edge by cutting some additional trees outside the right-of-way; or (3) if possible, leaving some low-growing trees within the right-of-way.

For cultural resources, Project Managers would apply the following mitigation measures, as appropriate.

National Historic Preservation Act (1966, 16 U.S.C. 470) requires Federal agencies to take into account the potential effects of their undertakings on properties on or eligible for the National Register of Historic Places.

Archeological Resources Protection Act prohibits excavation, removal, damage, or other alteration or defacement of archeological resources on Federal or Indian lands without a properly issued permit.

American Indian Religious Freedom Act requires Federal land managers to include consultation with traditional Native American religious leaders in their management plans and guarantees First Amendment rights for traditional religions.

The Historic Sites Act of 1935, the basis for the National Historic Landmarks Program, provides for the preservation of historic American sites, buildings, objects and antiquities of national significance.

Native American Graves Protection and Repatriation Act of 1990 (PL101-601) recognizes the property rights of Native Americans in certain cultural items, including Native American human remains, funerary objects, sacred objects, and items of cultural patrimony. In cases involving the inadvertent discovery of Native American human remains or defined cultural items

Visual Resources

Cultural Resources



during activities occurring on Federal or Tribal lands, the activity must be halted temporarily, the items protected, and the appropriate Federal agency and Tribal authority notified of the discovery.

- *With the use of applicable mitigation measures, methods that may be appropriate for controlling vegetation in areas with potential cultural resources include manual, biological (for noxious weeds), non-soil-disturbing mechanical, and (potentially) herbicide (spot, localized, broadcast and aerial applications).*
- *When using mechanical ground-disturbing vegetation control methods, review the right-of-way for potential existence of historic and cultural resources. The State Historic Preservation Officer (SHPO) is to be consulted, as appropriate.*
- *On Tribal reservation lands and public lands, consult (visit) with the appropriate Tribe regarding potential impacts on traditional use plants and other cultural resources. Restrictions such as seasonal constraints for vegetation control, avoidance of certain areas, or using methods that do not affect non-target plants may be required. (Also see **Tribal Reservations**.)*

**Steep
Slopes/Unstable
Slopes**

For steep or unstable slopes, Project Managers would apply the following mitigation measures, as appropriate.

- *With the use of applicable mitigation measures, methods that may be appropriate for controlling vegetation in areas of steep slopes or unstable soils include manual, biological (for noxious weeds), non-soil-disturbing mechanical, and herbicide (spot, localized, broadcast and aerial applications).*
- *Do not using ground-disturbing mechanical equipment to clear on slopes over 20%.*
- *Avoid using granular or total vegetation management (non-selective) herbicides on slopes over 10%.*
- *Do not use herbicides with a high potential for surface runoff.*
- *Perform mechanical clearing when the ground is dry enough to sustain heavy equipment.*
- *Consider reseeding or replanting seedlings on slopes with potential erosion problems.*

**Spanned
Canyons**

For spanned canyons, Project Managers would apply the following mitigation measures, as appropriate

- *Avoid removing vegetation where it will not grow up into the safety zones for the transmission line.*

4. Determine vegetation control methods.

In this step, Project Managers would do the following:

- Determine the appropriate control method or combination of methods to be used for a specific facility or right-way, based on three steps above: 1) facility and vegetation control needs, 2) type of land-uses and contacts with land owners/managers, and 3) natural resources present.
- *For all methods using machinery or vehicles (i.e. chainsaws, trucks, graders), keep the equipment in good operating condition to eliminate oil or fuel spills or excess exhaust.*
- Do not wash equipment or vehicles at a stream.

For the use of manual methods, Project Managers would apply the following mitigation measures, as appropriate.

Manual

Manual control methods include the following: pulling weeds; cutting with shears, clippers, chainsaws, brush saws or axes; steaming with a hand-held hot steam device (electric yards); burning plants with propane burners (electric yards); and girdling by cutting a ring around the trunk of the tree.

- *When crews are working during the fire season¹, each crew shall have the proper fire-suppression tools and materials, as required by the responsible fire control agency.*
- Equip power-cutting tools with approved spark arresters.
- Cut conifers below the lowest live limb to eliminate the continued growth of lateral branches.
- *If planning follow-up herbicide stump treatment, cut stumps flat for application of the chemical.*
- *If planning follow-up herbicide stump treatment in rights-of-way, cut deciduous brush about 15.2 cm to 20.3 cm (6 to 8 in.) above the ground line.*
- *If planning follow-up herbicide stump treatment in access roads, cut deciduous stumps 5 to 10 cm (2 to 4 in.) above the ground line.*
- *If planning follow-up herbicide stump treatment, apply herbicides as soon as possible after cutting. (If herbicide is not*

¹ Fire season is defined by the fire protection district that has jurisdiction in that area.



applied soon after the vegetation has been cut, it may be best to wait until resprouting has occurred and then spray by foliar technique.)

- *For safety, cut all brush stumps flat where possible. (Angular cuts leave a sharp point that could cause injuries if fallen upon.)*
- *For cutting trees close to "live" power lines, use only qualified personnel.*

Mechanical

For the use of mechanical methods, Project Managers would apply the following mitigation measures, as appropriate.

Mechanical methods include the use of chopper/shredders, walking brush controllers, mowers, feller-buncher machines, roller-choppers, and blading.

- Do not use ground-disturbing mechanical equipment to clear on slopes over 20%.
- Perform soil-disturbing or heavy mechanical clearing when the ground is sufficiently dry to sustain heavy equipment.
- Use measures to control the spread of noxious weeds.
- Do not use ground-disturbing mechanical methods in areas with T&E plant species unless determined appropriate through consultations.
- Do not use ground-disturbing mechanical methods in areas with cultural resources unless determined appropriate through consultations.

Biological Controls

For the use of biological controls, Project Managers would apply the following mitigation measures, as appropriate.

- Use only those biological control agents (insects) that have been tested to ensure they are host-specific.

Herbicides

For the use of herbicide methods, Project Managers would apply the following mitigation measures, as appropriate.

The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) regulates all herbicides and herbicides labels; classifies herbicides as “general” or “restricted” use; describes written records certified applicators must keep, and may give fines of up to \$25,000 and jail sentences of up to one year for misapplication of herbicides and violation of FIFRA standards.

Resource Conservation and Recovery Act (RCRA) regulates the disposal of toxic wastes (including the disposal of unused herbicides).

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) regulates how to clean up spills of hazardous materials and when to notify agencies of spills.

Superfund Amendments and Reauthorizations Act (SARA), also known as the ***Emergency Planning and Community Right-to-Know Act (EPCRA)***, sets up emergency response committees, requires industrial facilities to provide written plans in the event of a “chemical emergency,” and requires annual inventory of all chemicals.

Toxic Substance Control Act (TSCA) provides authority for EPA to secure information on all new and existing chemical substances.

Federal Occupational, Safety and Health Administration (OSHA) protects worker health and safety, including requiring that workers be provided with a ***Material Safety Data Sheet (MSDS)*** for hazardous materials including herbicides.

Food, Agriculture, Conservation, and Trade (FACT) Act of 1990, and amended in 1995, addresses restricted-use pesticide record keeping.

- Follow product label directions, as required by FIFRA, including “mandatory” statements (such as registered uses, maximum use rates, application restrictions, worker safety standards, restricted entry intervals, environmental hazards, weather restrictions, equipment cleaning).
- Consider all product label “advisory” statements (such as techniques for mixing, applying and cleaning within the mandatory requirements, recommendations for protection clothing, guidelines for differing soil types, etc).
- Always have a copy of the herbicide label and Material Safety Data Sheets (MSDS) at work sites during all mixing and applications.



- Ensure that all herbicide applications are conducted in the presence of a licensed applicator valid for the state where the work is located.
- Keep records of each application, including the active ingredient, formulation, application rate, date, time, location, etc. Records must be available to state and Federal inspectors.
- Ensure the use of EPA-approved herbicides that have been reviewed by Bonneville for effectiveness and environmental considerations.

Bonneville is proposing to use the following 24 herbicide active ingredients:

Benefin	Glyphosate	Pendimethalin
Bromacil	Halosulfuron-methyl	Picloram
Chlorsulfuron	Hexazinone	Sulfometuron-methyl
Clopyralid-methyl	Imazapyr	Tebuthiuron
2,4-D	Isoxaben	Triclopyr
Dicamba	Mefluidide	Trifluralin
Dichlobenil	Metsulfuron-methyl	Trinexapac-ethyl
Diuron	Oryzalin	Paclobutrazol (growth regulator)

- See **Water Resources** for herbicide mitigation measures near wetlands, streams, rivers, ponds, and wells.
- *Before application*, thoroughly review the right-of-way to identify and mark, if necessary, the buffer requirements.
- Observe restricted entry intervals specified by the herbicide label and post public warning signs where required.

Each herbicide has information on the label that must be followed. The information given below is not intended to replace reading the labels.

Drift and Leach Reduction

- Use thickening agents, as appropriate, to reduce the drift hazard when applying herbicides as broadcast, aerial, or localized foliar treatments.
- *When trying to reach the upper foliage of tall brush*, take care to prevent drift or spraying of non-target species.

- Ensure that there is no danger of granular herbicides being washed from the areas of application. (If the herbicide is not assimilated into the soil, heavy surface runoff can cause problems elsewhere, both on and off the right-of-way.)
- Avoid application to ground that is to be planted later (with herbicides that could damage subsequent crops).
- Pay close attention to present weather and changing weather:
 - * **wind** (may blow dry or wet spray applications away from treatment site),
 - * **humidity** (if humidity is too low, herbicide effectiveness may be reduced due to volatilization and closed pores on surface of vegetation),
 - * **temperature inversions** (may cause movement of evaporated “clouds” of herbicide formula to non-target vegetation or evaporation of carrier, reducing drop size and increasing drift potential), and/or
 - * **heavy rainfall** (may wash herbicide off plants or soil and move away from treated area).

Table III-3, below, identifies Bonneville’s minimum weather restrictions. (These restrictions are to be used in the absence of more stringent label instructions and restrictions.)

Table III-3: General Climate Restrictions for Herbicide

Applications (restrictions may vary according to label instructions and state or local requirements)

Control Method	Max. Temp*	Min. Humidity	Precipitation	Wind	Season
Stump	—	—	Minimal	—	frost-free (wood must not be frozen for penetration)
Foliar	75°	30%	None	0-5 mph	spring/summer (or as specified on herbicide label)
Basal	75°	30%	Minimal	0-10 mph	frost-free (wood must not be frozen for penetration)
Pellet	—	—	Moderate required	—	frost-free
Aerial	70°	50%	None	0-5mph	growing season

* Evaporation (volatilization) of some herbicides occurs with higher temperatures, causing drift and potential damage to non-target plants. Volatilization is more likely a problem with ester formulations than amine formulations.

Spot Stump Application

A spot application is treatment of individual plant(s) with the least amount of chemicals possible. Stump treatments are done by hand (squirt bottle or canister) or by backpack.

- *For spot treatment*, cut stumps cut flat, 15.2 – 20.3 cm (6 - 8 in.) above ground (except for access roads and around structures sites which should be 5 – 10 cm (2 – 4 in.) above ground) to facilitate treatment and reduce trip and fall hazards. Treatment should occur within 8 hours to prevent resprouting.
- Directly spray the root collar area, sides of the stump, and/or the outer portion of the cut surface, including the cambium, until thoroughly wet, but not to the point of runoff. This would avoid, or minimize, deposition to surrounding surfaces.

Localized Basal Application

Localized herbicide application is the treatment of individual or small groupings of plants. Basal is the treatment of the base—bark or stem—of a plant.

- Apply basal treatments at any time during the year except when snow or water prevent application to the groundline. However, in general, treatments are more effective during the spring (when plants are leafing out) and less effective in the fall (when they are dropping their leaves).
- Use basal bark treatments to control woody plants with stems less than 15.2 cm (6 in.) in diameter.

Localized Foliar Application

Foliar treatment is the treatment of the leaves of the plant.

- Do not apply when rain is imminent (better plant penetration is obtained when herbicide dries and is absorbed; rain may wash herbicide off).
- Apply foliar treatments during active growing and after leaves have developed.

Localized and Broadcast Pellet Application

This is the application of granular or pellet herbicides, treating either small groupings of plants by hand or large areas with dispersing machines.

- Observe buffer zones and maintain recommended buffer widths.
- Do not broadcast pellets where there is danger of contaminating water supplies.

- Apply pellets or granular herbicides when it is anticipated that the treatment area will receive about 5 cm (2 in.) of rain or sprinkler irrigation, generally within two weeks after application, so that pellets dissolve and the chemical can be carried into the root system.
 - * *For areas east of the Cascade Mountains with less than 15 inches of precipitation, apply in the fall.*
 - * *For areas west of the Cascade Mountains or in high moisture areas, apply in the spring.*
- Do not apply pellet herbicides within three times (3X) the crown width (or dripline) of an off-right-of-way tree.
 - * *When soils are rocky or shallow, the slope is away from the right-of-way, or the size and age of the off-right-of-way vegetation may indicate that part of the root system may be within the right-of-way, consider observing greater pellet edge distances.*

Broadcast Application (Liquid Herbicide)

This is the application of herbicides by use of tractors or trucks that treat a large area.

- Observe buffer zones and maintain recommended buffer widths.
- Do not use broadcast application where there is danger of contaminating water supplies.
- Do not use broadcast method where there are adjoining susceptible crops and ornamental bushes.

Aerial

This is the application of herbicides with a helicopter or airplane.

- Consider surrounding land use before assigning aerial spraying as method. Aerial spraying may be limited by incompatible adjacent land use, such as domestic water sources, some agricultural areas, and densely populated areas. Observe buffer zones and maintain recommended buffer widths.
- Do not use aerial application where areas of browned vegetation are not acceptable.
- Use thickening agents, if applicable, to avoid drift. The use of a microfoil boom may preclude need of thickening agents.
- Do not make aerial application when the wind velocity exceeds 5 mph. (See weather requirements.)

- Fly no higher than necessary to achieve appropriate application, reduce drift potential, and maintain flight safety.

Mixing

- Prepare spray mixture in accordance with the label(s) instructions (do not exceed the amount of herbicide per acre specified on the label).
- Perform mixing on rights-of-way, within electric yards, or other suitable locations and with respect to buffer zones and recommended buffer widths.
- Mix aerial applications only at a heliport (permanent or temporary).
- Always use siphon prevention devices/methods when filling herbicide tanks from domestic water supplies.

Spills and Misapplications

Most herbicide accidents and spills occur during mixing, loading and washing of equipment. The key to prevention is to ensure all equipment and vehicles are well-maintained and that personnel are well-trained and equipped.

- Refer to MSDSs for emergency response information.
- Report spills and misapplications to EPA in accordance with the Government Agency Plan (GAP). In addition, report spills and misapplications and clean-up according to various state and Federal laws and regulations. At a minimum:
 - * Contain spill or leak, or halt misapplication;
 - * Isolate area;
 - * Request help and make appropriate notifications to Bonneville and state officials;
 - * As soon as possible, notify the owner of the land, whether the spill occurs on or off right-of-way.
 - * Clean up the spill;
 - * Cleanup equipment and vehicles;
 - * Dispose of cleanup materials, and;
 - * Follow up with appropriate cleanup documentation.

Handling

- *During transportation*, secure herbicide containers to prevent movement within the vehicle or loss from the vehicle during the operation of the vehicle.

- Do not store herbicides in passenger compartment of vehicles.
- *When spray equipment is not being used*, all valves and tank covers shall be closed during any movement of the vehicle.
- Firmly secure to the frame of the vehicle any portable tanks used for herbicide application.

Safety

- *On jobs where herbicide splash may occur*, always use suitable goggles or face shield as required.
- Always use personal protective gear listed on the herbicide label.
- Do not permit workers with a known allergy to herbicides to participate in herbicide applications.
- Provide applicators with an on-site hand washing facility.
- Wash hands before eating, drinking, or smoking after applying herbicides and to take a hot shower at the conclusion of work.
- Do not smoke or consume food or drinks during the application of herbicides.
- Promptly change any clothing substantially contaminated by a herbicide if the material contacts the skin and the herbicide cannot be adequately removed. Each worker is to have one complete change of work clothes on the site.
- Use self-contained² herbicide handling equipment when appropriate and available to reduce worker exposure during herbicide mixing and handling.

Storage of Herbicides, Containers, and Equipment

- Follow label requirements for storage.
- Permanent storage facilities will meet the following requirements:
 - * dry;
 - * protected from freezing or excessive heat;
 - * well-ventilated;

² Self-contained herbicide handling equipment is equipment designed to limit worker exposure to herbicides. Examples: premixed herbicide containers that can be attached to a backpack sprayer (to limit the pouring and addition of water or other carriers to common container); canisters that are injected into the base of a tree and open to release herbicide once injected.



- * locked and, where possible, secured by gates and/or climb-proof fence;
 - * impervious flooring;
 - * all doors on storage areas properly posted to identify the use of the building for herbicide storage;
 - * spill containment measures or devices;
 - * a fully developed and maintained Spill Prevention and Countermeasure Plan;
 - * maintained ABC-type fire extinguisher, and
 - * meeting any additional standards set by State or local law.
- Store containers with labels plainly visible. Group together all containers of the same product.
 - Inform local fire department, in writing, of the amounts, kinds, and locations of stored herbicides.
 - Stack herbicide containers on stable pallets and out of the way, to prevent container damage by other traffic.
 - Store containers upright. Seal all containers appropriately. If containers are not in good condition, repackage and label with a copy of the label and the relabeling date.
 - Do not store herbicides in empty food or drink containers.
 - *Where practicable*, maintain a complete inventory indicating number and identity of containers in storage unit.
 - Label "contaminated with herbicides" any of those items used for handling herbicides at the storage site that might be used for other purposes. Do not remove item from site without thorough decontamination.
 - Do not transfer herbicides to unmarked containers except for immediate use. Do not return unmarked containers back to a storage area.
 - Store herbicide containers in such a way that the oldest batch is used first and that partially used containers are used first.
 - Clean spilled areas immediately. Inspect storage areas frequently for leakage.
 - Store only minimum amounts of chemicals at field and temporary locations; order out no more chemicals than necessary.
 - Dispose of unwanted or unusable products promptly and correctly.

- *In temporary locations, such as the field,* store all chemicals in buildings or vehicles that can be locked up.
- *During transportation,* do not leave vehicles transporting chemicals unattended unless the chemical is being carried in a closed van.

Disposals

- Do not burn paper and carton-type containers unless so stated on the label.
- Dispose of containers or cartons in one of three ways:
 - * **Triple rinse** containers of liquid herbicides before disposal. The rinse solution will be poured into the mix-tank and *used for treatment*. Each rinse solution shall be equal to at least 10 percent of the container volume. Dispose of the empty containers as noncontaminated waste, at any legal landfill dump.
 - * Use a **rinsing nozzle** (instead of triple rinsing). A rinsing nozzle has a sharp point that can puncture a plastic or metal empty herbicide container and flush the container's contents into the mix tank.
 - * Return **returnable** "mini-bulk" type containers to the distributor for refill.
- Dispose of unwanted or unusable herbicide products as contaminated waste at an approved waste facility.
- Dispose of contaminated materials (including contaminated soil) resulting from cleanup procedures according to agency directives.
- Place any contaminated materials to be transported in watertight containers.

5. Determine debris disposal and revegetation methods, if necessary.

In this step, Project Managers would do the following:

- Determine the appropriate debris disposal methods to be used, based on four steps above: 1) facility and vegetation control needs, 2) type of land-uses and contacts with land owners/managers, 3) natural resources present, and 4) control methods used.
- Determine whether reseeding or replanting is necessary for erosion control, preventing noxious weed infestation, establishing and promoting low-growing plants, or promoting wildlife habitat.

Vegetative Debris Disposal

For vegetative debris disposal, Project Managers would apply the following mitigation measures, as appropriate.

*The **Federal Clean Air Act**, as revised in 1990 (PL 101-542, 42 USC 7401), requires the EPA and states to carry out programs intended to assure attainment of the National Ambient Air Quality Standards.*

*Section 404 of the **Clean Water Act** requires permits from the U.S. Army Corps of Engineers to discharge dredged or fill material into waters of the U.S. (Vegetation debris left in a stream or wetland could be considered fill material.)*

- Do not permit debris from tree falling, cutting, or disposal to fall into or be placed in any watercourse, spring, pond, lake, or reservoir, *unless* there is approval from the appropriate authorities for stream habitat projects.
- *Where the scattering method of disposal is used, perform in accordance with specific requirements or agreement with the responsible fire control agency.*
- *If on grazing lands and there is potential for pine needle poisoning, do not lop and scatter pine tree vegetative debris—machine-chip or haul debris off-site.*
- *If using heavy equipment for piling debris, perform when the ground is able to support equipment, and excessive rutting will not occur.*

- Reduce vegetation debris accumulation that can produce a fire hazard along the right-of-way.
- *If debris is removed from site, take debris to an approved dumpsite.*
- *If burning vegetation debris piles, burn off the right-of-way. Do not burn debris close enough to the right-of-way or facility where smoke could provide a conductive path from the transmission lines or electric equipment to the ground.*
- *Before pile burning is attempted off the right-of-way, secure from the applicable fire control agency any required permits for burning.*
- *If burning vegetative debris piles, keep piles relatively small to keep intense and prolonged heat from damaging the soil horizons.*
- *If burning, do not pile burn in or next to watercourses.*
- *If burning, do not use oil, diesel, or rubber to start pile burn fires.*

If reseeding or replanting is determined to be necessary, Project Managers would apply the following mitigation measures, as appropriate.

- Select for establishment those seeds, seedlings, or plants that are consistent with management objectives and adapted to climatic conditions, soils, landscape position, and the site itself.
- Use adapted seed and plant materials, considering appropriate species for availability of moisture, temperature and alkali or acidic soils.
- *If using native species, use species that meet the objectives of the re-vegetation project, including erosion control, noxious weed management, competition of tall-growing trees, and wildlife management.*
 - * Consider using native seed/plants if the costs are reasonable, and they are readily available in the quantity and quality needed to perform the project.
 - * *If native seed mixes are not reasonably priced or available in needed quantities, consider a seed mix with some percentage of native seeds.*
- Use high-purity seed; take actions to prevent purchase of seed contaminated with noxious weeds.
- Prepare seedbed properly.

Reseeding/ replanting



- Use proper planting time and dates to ensure enough moisture for germination and growth and before frosts.
- Use effective planting methods; drill seeding is most effective, broadcast methods are appropriate when drill method is impractical.
- Consider increasing seeding rates for critical erosion areas by 150% of recommended drill seeding rates.
- *For wildlife forage*, consider adding legumes.
- *For creating shrub cover*, consider adding shrub species.
- Plant tree and shrub stock according to local standard.
- Follow recommendations for applying appropriate soil amendments and fertilizers.
- If practical, control weed growth during seed or seedling establishment.
- *If possible*, protect the site from grazing for 1-2 years until establishment.
- See mitigation measures for seeding near agricultural areas.

6. Determine monitoring needs.

In this step, Project Managers would do the following:

- Determine what steps are needed to evaluate whether treatments or mitigation measures are working properly and to ensure that other resources are not being adversely affected.
- Visit rights-of-way shortly after treatment (at least within a year of treatment) to determine effectiveness:
 - ★ Was target vegetation controlled?
- Visit rights-of-way within a year of treatment to determine whether any other impacts occurred:
 - ★ Were non-targeted plants affected?
 - ★ Were there any environmental impacts (i.e., erosion, water contamination, debris in wetlands)?
 - ★ Were desired results for environmental resources achieved (water, fish, soil, scenic, cultural).

- Monitor to determine whether follow-up treatments or mitigation measures are necessary (e.g., erosion control measures such as mulching, hydroseeding, coconut blankets).
- Use monitoring to help determine methods/issues for next treatment cycle.

7. Prepare appropriate environmental documentation.

In this step, Project Managers would do the following, as appropriate:

This Draft EIS was prepared according to the National Environmental Policy Act (NEPA, 42 USC 4321 et seq.). NEPA is a national law that protects the environment. NEPA applies to all Federal projects or projects that require Federal involvement.

- For environmental compliance, document the outcome of the Planning Steps through the use of a checklist; attach any T&E species consultations or other supplemental information as appropriate.
- Develop a Supplement Analysis (a NEPA analysis tiered to this program-wide EIS) that compares the project-specific potential impacts with those disclosed in the EIS.
- Conduct further NEPA environmental review if anticipated impacts or site-specific work are *substantially different* from those evaluated in EIS, or if significant new circumstances or information relevant to environmental concerns are found. If further NEPA review is needed, it would be in the form of an EA or an EIS depending on the extent of the substantially different impacts.

Other Requirements

The following Federal requirements are listed here for information only; they do not pertain to this project.

Energy Conservation at Federal Facilities - Vegetation management activities do not include the operation, maintenance, or retrofit of an existing Federal building; the construction or lease of a new Federal building, or the procurement of insulation products.



Rivers and Harbors Act section 10 - No work or placement of structures would be expected for during implementation of vegetation management activities.

Radon Gas and Indoor Air Quality Act - This act does not apply because vegetation management activities would not involve the release of radon gas into the air, groundwater, or soil in levels that exceed the ambient radon level.

Executive Order on Environmental Justice (EO 12898) - This Executive Order was enacted to ensure that Federal agencies do not unfairly inflict environmental harm on economically disadvantaged and minority groups within the U.S. or any of its territories. The vegetation management program would not result in disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.

Coastal Zone Management Act—This act requires that Federal actions be consistent, to the maximum extent practicable, with approved state Coastal Zone Management programs. Bonneville's vegetation management program is not expected to have coastal zone impacts.