Chapter I
Purpose and Need

In this chapter:

- **Need**
- **Purposes**
- **Reasons for the EIS**
- **Decisions**
- **Public Involvement Process**
- **Cooperating Agencies**

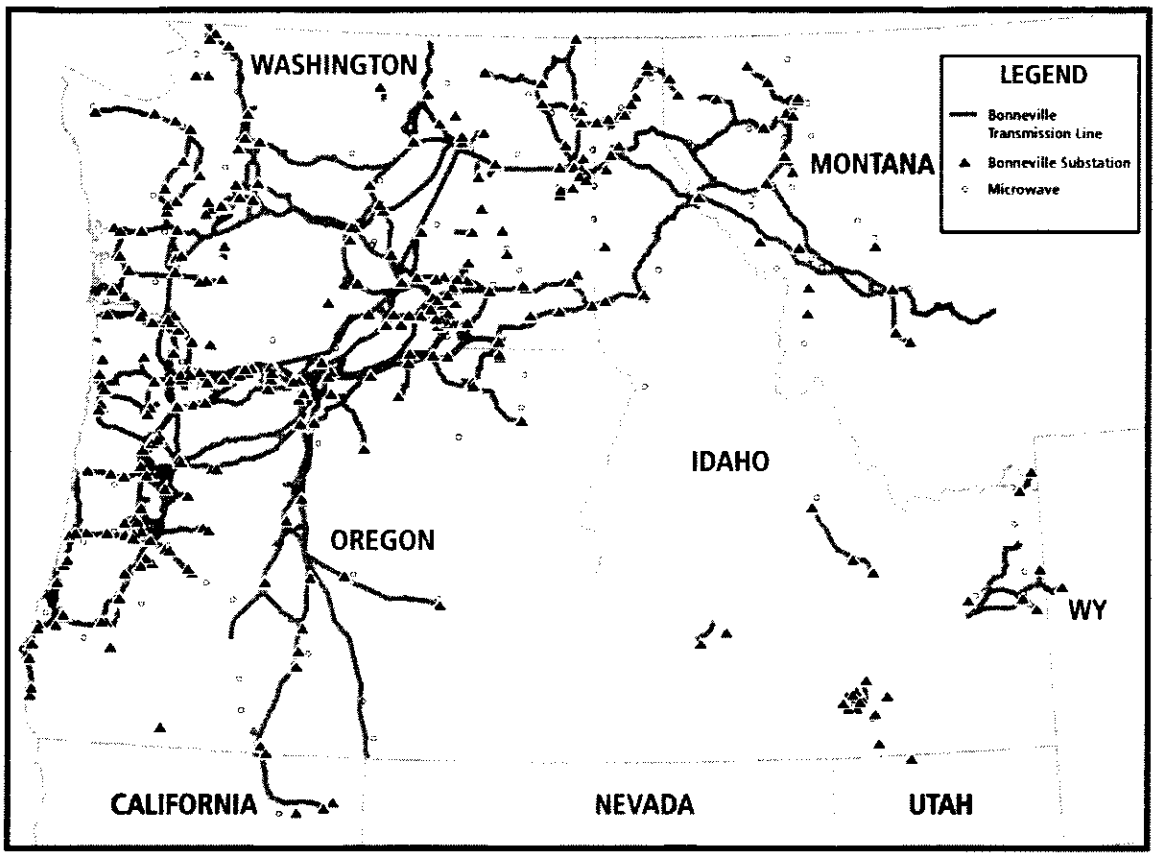
Purpose and Need for a Program

Need

Bonneville Power Administration (Bonneville) is responsible for maintaining a network of 24,000 kilometers (km) or 15,000 miles (mi.) of electric transmission lines and 350 substations. This electric transmission system operates in seven states of the Pacific Northwest. (See Figure I-1.)

These seven states offer a great diversity of vegetation. This vegetation can interfere with electric power flow, pose safety problems for us and neighboring members of the public, and interfere with our ability to maintain these facilities. **We need to keep vegetation a safe distance away from our electric power facilities.** Bonneville's vegetation management program is the policy and direction for managing vegetation at specific sites.

Figure I-1 Bonneville Service Territory



Our electric power facilities include rights-of-way (transmission lines and access roads), electric yards, and non-electric facilities.[1] We must be able to get to these facilities to carry out routine and emergency maintenance activities, and we must make sure that nothing falls into or grows too close to our power lines. We must also manage vegetation at our maintenance storage yards and administrative office complexes. (For more details, please see **Managing Vegetation at Bonneville Facilities**, later in this chapter.)

Bonneville is a major provider of electricity throughout the Pacific Northwest. Our transmission system makes up three-quarters of the Pacific Northwest's high-voltage transmission grid. Because the electric power transmission systems throughout the area are interconnected, our system can greatly affect transmission flow in the rest of the western United States.

[1] Please see the Glossary for useful definitions.

For example, on August 10, 1996, a major power outage occurred. The outage was caused by a number of factors, including abnormally high temperatures that cause transmission lines to stretch and sag near trees. When a transmission line sags too close to (not even touching) the tree, an electrical arc can occur, taking the line out of service. The August 10th outage affected parts of Canada and ten Western states, including New Mexico and Texas. Over 7-1/2 million customers (residents and businesses) lost power for a period of from several minutes up to nine hours.

We need to make sure that vegetation does not contribute to such an outage in the future.

In accordance with the Federal Columbia River Transmission System Act of 1974, " . . . the Administrator shall operate and maintain the Federal transmission system . . . (to) maintain the electrical stability and electrical reliability of the Federal (transmission) system . . . . " [Section 838b]

In order to ensure safe and reliable power, Bonneville must control the vegetation on land around the electrical facilities that make up the Federal transmission system.

Purposes

While managing vegetation around our facilities, we also have other **purposes** or objectives. Our vegetation management program must balance these purposes, while meeting the mission to ensure the transmission of safe and reliable power. These purposes are to

- minimize adverse environmental impacts,
- achieve cost and administrative efficiency, and
- comply with laws and regulations.

Bonneville will use these to help determine which alternatives will be chosen for our Transmission System Vegetation Management Program.

Reasons for This EIS

Preparation of this document is intended to fulfill the requirements of the National Environmental Policy Act (NEPA) for Bonneville. In 1983 we prepared an environmental impact statement (EIS) on our vegetation management program. As part of our compliance with NEPA, the EIS analyzed the possible methods used to mange vegetation and their potential environmental impacts. The program

and methods we selected have formed the basis for our vegetation management ever since.

Since that time, some important things have occurred:

- We need to increase our program efficiency and consistency.
- Herbicide use is under increased public scrutiny.
- There is more emphasis on using Integrated Vegetation Management approaches. [2]

This EIS proposes various alternatives that respond to these factors.

Efficiency and Consistency

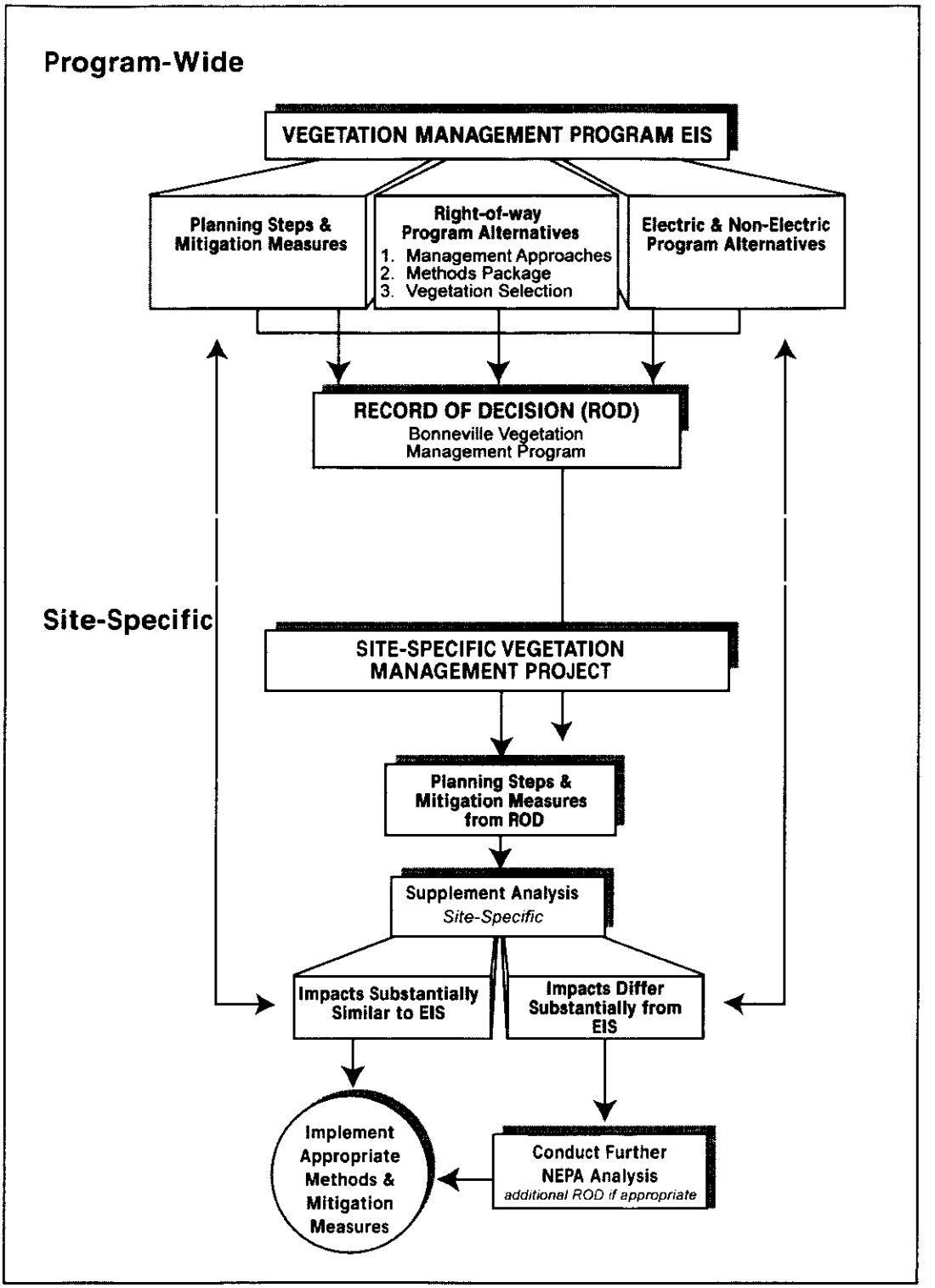
At present, Bonneville looks at all vegetation management choices and environmental impacts each time we undertake an individual (site-specific) project. This approach is inefficient: we must readdress many common issues over and over. This reiteration does not foster consistency across projects or jurisdictions, or over time.

To increase efficiency and consistency, this 1999 draft EIS (DEIS) establishes Planning Steps and mitigation measures (**Chapter III**) to provide a framework to address potential site-specific environmental impacts and issues. The EIS also explores, identifies, and discloses many of the commonly occurring environmental issues or impacts expected from vegetation management.

The site-specific environmental analysis would "tier" to this EIS by (1) using the Planning Steps to ensure consideration of all potential issues, (2) consulting with the EIS to determine whether impacts had been previously considered, and (3) applying the appropriate established mitigation measures. Site-specific analysis would be in the form of a *Supplement Analysis*. Additional broad environmental analysis would be required if anticipated impacts, project components, knowledge, or circumstances were to differ substantially from those evaluated in this EIS. See Figure I-2, next page.

[2] More information on Integrated Vegetation Management (IVM) is provided on pages 6 - 7.

Figure I-2 Tiering Site-Specific Analysis to the Program EIS



Herbicide Use

Scrutiny of chemicals used to control insects or vegetation has increased through the years. In 1984, the U.S. Forest Service (USFS; US Department of Agriculture) and the Bureau of Land Management (BLM; US Department of Interior) stopped using herbicides to control vegetation on their lands in Oregon and Washington, in response to an injunction against herbicide use. Bonneville accordingly stopped using herbicides to control vegetation on those lands, and drastically lessened herbicide use on rights-of-way across private lands. However, we have found that, without at least some herbicide use, it has been very difficult to keep up with the growth of deciduous trees, which resprout and grow quickly, multiplying maintenance work.

This EIS describes the advantages and disadvantages of herbicide use. The alternatives were designed to help determine whether to use herbicides and, if so, to what extent.

Integrated Vegetation Management (IVM)

Integrated Vegetation Management (IVM) is a strategy to cost-effectively control vegetation with the most benign overall long-term effect on public health and safety and the environment (ecosystem). IVM tries to optimize favorable effects, while minimizing potential negative effects.

The utility industry has had continuing success in applying an IVM strategy for managing rights-of-way vegetation. IVM controls unwanted vegetation by considering the use of all suitable control methods within the context of the whole ecosystem. Methods are chosen, based on the vegetation needing control and the environmental conditions present. The study and development of new vegetation management techniques as well as the analysis and incorporation of newly developed and approved herbicides is also a major focus of IVM.

All of our right-of-way alternatives will use the overall IVM concept: we will use an array of control methods, choosing those methods or combination(s) of methods based on the vegetation needing control, cost-effectiveness, and the environmental conditions present.

*IVM was developed by the utility industry from the strategy of Integrated **Pest** Management (IPM). IPM is the strategy for using timing and a combination of methods to control insects, diseases, and weeds that affect crops or plants. Because the "pests" for rights-of-way are strictly vegetation, not insects or diseases, the name of the strategy was changed to Integrated **Vegetation** Management (IVM) for utilities.*

> *". . . [IPM] is a sustainable approach to managing pests by combining biological, cultural, physical, and chemical tools in a way that minimizes economic, health, and environmental risks. . . . Federal agencies shall use [IPM] techniques in carrying out pest management activities and shall promote [IPM] through procurement and regulatory policies, and other activities."*
>
> *— The Food Quality Protection Act of 1996, Sec. 303 Integrated Pest Management*

The ultimate goal for IVM right-of-way management is to convert the right-of-way to low-growing plant communities that keep tall-growing vegetation out. As discussed in the Alternatives chapter (**IV**) low-growing plants can often "out-compete" trees and tall-growing brush for sunlight and nutrients. This approach can allow utilities to manage tall-growing vegetation with the least possible amount of control.

Some of the Right-of-way Program alternatives are more supportive of the IVM strategy than others. The management approach alternative—**MA1: Promoting Low-growing Plant Communities**—uses the IVM concept to the maximum by managing vegetation so that low-growing plant communities can develop as much as possible.

Decisions to Be Made

Several decisions will be made through this DEIS document and process. Those decisions are framed by considering alternative ways of managing vegetation.

Bonneville has decided to undertake planning through a series of Planning Steps (see **Chapter III**) for site-specific projects, rather than continue under the project-by-project approach we follow now.

Given the umbrella of the Planning Step approach, the decisions to be made are as follows:

Rights-of-way

1. **Management Approach** - Which management approach should Bonneville adopt for maintaining rights-of-way (Alternatives MA1, MA2)?

2. **Methods Package** - What methods should Bonneville have available for use for managing right-of-way vegetation (Alternatives R1, R2, R3, R4)?
3. **Herbicide Vegetation Selection** - If Bonneville decides to use herbicide methods, on what kinds of vegetation should they be applied (Alternatives VS1, VS2, VS3)?

Electric Yards

4. **Current Practice** - Should we continue to manage electric yard vegetation as we do currently (Alternative E1)?

Non-electric Facilities

5. **Methods** - What methods should Bonneville use for managing non-electric facility vegetation (Alternatives NE1, NE2)?

Decisions will be based on the findings contained in this DEIS (based on how each choice meets our need and purposes) and the consideration of public comments and recommendations. The Bonneville Administrator will decide which alternatives to adopt. The decision, the reasons behind it, and the conditions for it will be presented in a document called the *Record of Decision (ROD).*

Public Involvement: Scoping

Early in a project, Bonneville contacts people who may be interested in or affected by the project, to learn what issues should be studied in the EIS. Because those issues help define the scope of the EIS, this process is called "scoping."

In "scoping" this EIS, we contacted people throughout the Northwest, including Federal and state land management agencies; state and local governments; and Indian Tribes and special interest groups like the Sierra Club. Comments were sought and received in several ways.

- Published Notice of Intent to prepare an EIS, June 1997;
- Mailed letter, fact sheet (*fyi*), and comment form to about 1,500 people, June 1997;
- Held scoping meeting in Portland, July 10, 1997;
- Conducted one-on-one meetings, June-August, 1997;

- Researched public comments from earlier, similar Bonneville projects.

In all, we received about 650 comments. The focus was on what vegetation management methods to consider, what resources need to be protected, which vegetation is particularly troublesome to electric facilities, and how to coordinate with other public agencies when Bonneville facilities cross their lands. As expected, the comments were diverse and even contradictory. Here is a summary of the issues raised. (**Appendix A** offers more detail.)

- When selecting among methods, consider manual, mechanical, fire, herbicide, biological, grazing, selective cutting, herbicides, and the promoting of low-growing plant communities. (See **Chapters II and IV**.)
- When analyzing impacts, consider these resources: cultural resources, fish and wildlife, rare plants, aquatic communities, terrestrial communities, water quality, native plants and their ecological communities, wildlife habitat, hydrology, soil, soil microbes, historic and archeological resources, cultural/ traditional use plants, human and wildlife health, recreation, cost, visual resources, timber, fisheries, downstream resources and use, watersheds, and fuel management areas. (See **Chapter VI**.)
- Other advice: Fit the technique to the resource; our area (Pacific Northwest) is diverse, so the techniques must be diverse. Be sensitive to the seasonal needs of wildlife (such as nesting, giving birth, and feeding). Be sensitive to the seasonal activities of humans (such as outdoor recreation, and farming). Limit pesticide use to the extent practical through implementation of IVM. Convey the values behind the alternatives. We know you need to consider cost, but balance cost with other needs such as resource protection. (See **Chapters III, IV, and VI**.)

Cooperating Agencies

The USFS and BLM are Federal agencies that manage publicly owned lands to meet the diverse needs of people for resources such as timber, recreation, range, and minerals, and for environmental values such as wilderness and wildlife.

About 2,300 km (1,400 mi.) of Bonneville's transmission-line corridors and a number of Bonneville substations are located on lands managed by either the USFS or BLM. Because we all have strong interests in how vegetation and land along these corridors is managed, these agencies are cooperating agencies with Bonneville in developing this vegetation management program EIS.

Their cooperation should help Bonneville to analyze or coordinate vegetation management work on BLM or USFS land in an effective, efficient, consistent, and timely way.

Managing Vegetation at Bonneville Facilities

To operate our facilities safely, the vegetation around them must be controlled. Some facilities require only minimal control; others require that no vegetation at all be allowed. This section gives details on our need, outlines the requirements for safe operation, and identifies our current vegetation management program.

Where

We manage vegetation in three main areas.

- **Rights-of-way** - We manage vegetation on our rights-of-way (along transmission lines, microwave beam paths, and access roads). Here is where our vegetation management program is most visible.
- **Electric yards** - We manage vegetation in our electric yards (substations, switching stations, and around line sectionalizing switches).
- **Non-electric facilities** - We manage vegetation around "non-electric" facilities (microwave sites, parking lots, and building landscaping).

How

We use four different methods—alone or in combinations—to manage vegetation:

- **Manual cutting** (for instance, cutting brush or tree limbs with chainsaws),
- **Mechanical cutting** (such as using tractors or large mowers to remove brush),
- **Biological agents** (insects or pathogens for noxious weed control only), and

- **Herbicides** and growth regulators (using chemicals that will check or regulate vegetation growth).

The next sections describe vegetation management requirements for each facility to ensure safe and reliable operation, and what we are doing now to meet those requirements.

Transmission Lines

Rights-of-way

Transmission-line rights-of-way make up the largest area of land where we manage vegetation. As noted earlier, we deliver electric power over a network of more than 24,000 km or 15,000 mi. of transmission lines. Each line is located on a right-of-way that varies in width from a few feet (ft.) for a pole line easement[3] up to 305 meters (m) or 1000 ft. for a corridor where several transmission lines are built side-by-side. The Bonneville system contains about 93,078 hectares (ha) or 230,000 acres (ac.) of rights-of-way.

Requirements. When transmission lines are built, we clear the corridors of brush and trees in order to build the line safely. We then manage the corridors over time to limit tall-growing vegetation.

As required by law, we use the National Electrical Safety Code (NESC, 1997) as the basis for tree clearing: it defines the minimum safe distances between objects or workers and energized lines. There are two NESC requirements: vegetation must not interfere with workers maintaining, upgrading, or repairing the line; and vegetation must not create a safety hazard.

If vegetation is too close to a line, electricity can "arc over" and can create a fire or injure or kill anyone nearby. This can also happen when a line heats up on a hot day or when it is carrying a high power load and, as a result, stretches and sags closer to the vegetation below. The NESC requires us to remove any trees or other vegetation that is a hazard to the power system or that *could* become a hazard to the system.

Past Practices. Beginning in 1937, when Bonneville was created by Congress, and for the next 30 years, our vegetation maintenance program reflected the clearing we did to build new lines. This clearing was called "clean and green": all trees (and just about

[3] Pole line easements are generally used just for electric lines strung on wood poles. The easement is just for the land the pole is on, not for the strip of land under the line. These easements also include a general right to prevent obstructions to the transmission of electricity.

everything else) were cut in a straight swath to create the right-of-way. The edges of that swath are called the "backline." Any trees that later grew in this right-of-way swath were cut when maintenance personnel could no longer see over them.

Original clearing for Vancouver-Eugene transmission line

Beginning in the late 1960s/early 1970s, we were more selective in what we cut for construction. We created curved backlines by using the natural curves of the land (topography), the differing tree heights, and the swing of the line (conductor) back and forth in the wind. (This swing area helps determine how far trees can be from the line.) The curved backlines produced a "scalloped" right-of-way. Bonneville also "feathered" the rights-of-way by leaving some trees in the right-of-way. Individual, hand-marked "save trees" were left in the right-of-way. These trees were relatively short and did not pose a near-term threat to the transmission line. In general, trees in the rights-of-way may not grow over 3 m (10 ft.) tall, unless they are in a deep canyon so they could not possibly grow into the line.

Using these techniques meant that the rights-of-way no longer had the harsh straight-line look. However, the trees then grew too close to the conductors. We often found that we had to come back and reclear the right-of-way or start our first regular maintenance clearing earlier than planned.

Up until the mid-1980s, Bonneville (and the USFS and BLM) used herbicides, including some aerial and high-volume spraying, as well as manual cutting to control vegetation on rights-of-way. We used only those herbicides approved by the Environmental Protection Agency (EPA). However, as noted earlier, in 1984 an injunction against herbicide use halted USFS and BLM use of herbicides on

their lands in Washington and Oregon, including herbicide use by Bonneville on those lands. Bonneville also voluntarily cut back on our use of herbicides on other rights-of-way, including our infrequent use of aerial spraying to control noxious weeds. Instead, we hand-cut most vegetation during maintenance cycles, and used very limited amounts of herbicides to keep stumps from re-sprouting or to control weeds. As a result, however, the effectiveness of our vegetation program declined to a point that the safety and reliability of the power grid were threatened. Even with increased funding, we were unable to keep up with the growth of vegetation along many of our rights-of-way.

Current Practice. On our rights-of-way now, Bonneville currently balances the use of all four vegetation control methods: manual cutting, mechanical cutting, herbicide controls, and biological agents (for noxious weeds).[4] We are also working to inform and educate the public on our need to keep vegetation away from our facilities.

When we build a new line, we still design backlines that take into consideration the lay of the land, tree heights, tree growth, and conductor swing and sag. When necessary, we scallop and/or feather the right-of-way, depending on the trees on the site, the design and type of the transmission line, and the visual sensitivity of the area. We scallop and feather less than in the past because of the difficulty in maintaining those rights-of-way.

In special circumstances, we still leave shorter "save trees," but only when they are *not* under the conductors of the transmission line.

Once a line is in place, we routinely patrol the rights-of-way to monitor tree and shrub growth along the powerlines and access roads. We schedule maintenance *before* vegetation is inside the minimum safe distance for a non-electric worker to cut next to or under the energized line—as required by the Occupational Safety and Health Administration (OSHA). We control vegetation on the rights-of-way to achieve a maintenance-free period, which tends to be 2 - 8 years on the West side of the Cascades, and 10 - 15 years on the East side of the Cascades.

---

[4] Biological agents are sometimes used to control noxious weeds. For example, working with the Oregon Department of Agriculture, Bonneville has used helicopters to drop spider mites over gorse-infested areas. These insects feed on gorse and may be able to keep these noxious weeds from forming impenetrable thickets under power lines.

We also selectively remove "danger trees"—trees that could potentially grow, fall, or bend into the lines—from the area *next to* the right-of-way. We select them for removal based on the overall condition of the tree: the stability of the ground around the tree, the tree species, and any other defect that might cause the tree to be "unstable" and likely to fall into the transmission line. If a tree is healthy and stable, it is usually not designated for removal, even if it is tall enough to fall into the transmission line. Sometimes we trim the limbs of trees adjacent to the right-of-way so those branches will not grow into the conductors.

The rights-of-way are maintained using mostly manual cutting—by chainsaws—and occasionally mechanical cutting. We also spray herbicides on smaller trees or do follow-up herbicide treatments on stumps. Noxious weed control is usually done in conjunction with other agencies, using either herbicides or biological agents.

Access Roads

We have over 13,680 km (8500 mi.) of access road to maintain. Maintenance crews use access roads to get to the transmission-line towers, substations, and other facilities.

Requirements. Access roads have to be sufficiently free of vegetation so that our crews and their necessary machinery and vehicles can safely and efficiently travel over them to the electric facility for emergency and routine maintenance work.

Access roads—no woody-stem vegetation is allowed to grow.

Current Practice. Access roads that we maintain are generally unimproved dirt or gravel roads. We keep them clear of trees and brushy vegetation, using manual cutting tools, machines on wheels or tracks, and herbicide sprayed with backpack sprayers and truck-mounted booms. Some roads are public, some are private. Some are maintained by Bonneville, some by the underlying landowner. Some are open to public use, while others are available for use only by Bonneville and the underlying landowners.

Microwave Beam Paths

Microwave stations are used to send information quickly from point to point to help us control and regulate the flow of power across the system. Microwave stations are generally located on a series of hilltops or mountain peaks.

Requirements. Sending these signals requires that nothing obstruct the beam's path or line-of-sight.

Current Practice. Maintenance crews cut trees with chainsaws when they are found to be growing into the beam path.

Electric Yards

Substations

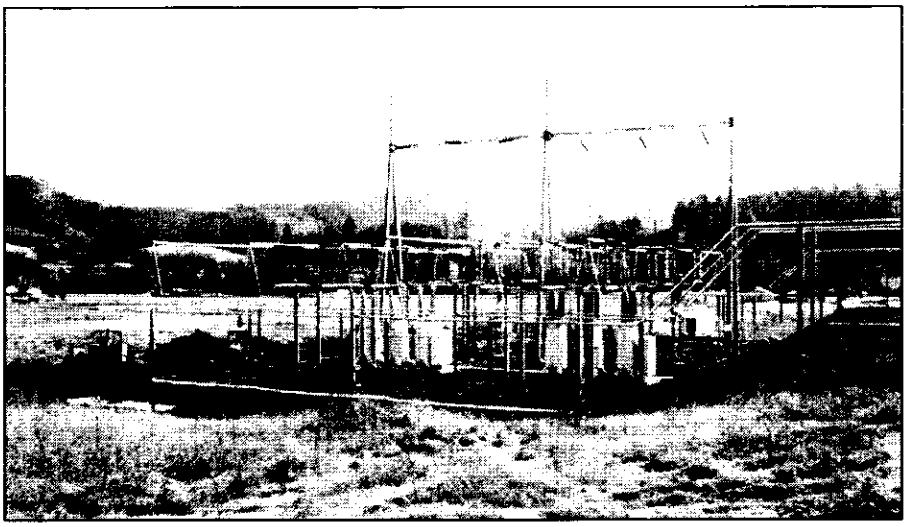
Bonneville owns and operates more than 350 substations or electric yards throughout our service area. Substations are facilities that connect transmission lines, direct electricity, and convert voltage as needed to meet customer requirements. Many of our customers supply power to businesses and residents through a distribution system. To meet our customer requirements, we need to convert or "step-down" the voltage that travels over our transmission lines to a level appropriate for their distribution system.

For safety reasons, a fence surrounds substations. Inside the fence the land is graveled and graded flat. The fenced area can range from less than 0.2 ha (0.5 ac.) up to about 16 ha (40 ac.), depending on the size of the substation. Altogether, we have about 930 ha (2300 ac.) of substation yards.

Outside the substation fence, there is typically a 3-m (10-ft) buffer of rock/gravel. Beyond that buffer, the substation property may range in size from less than an acre to over about 283 ha (700 ac.). That property may be forest, field, or landscaped shrubs.

Requirements. Vegetation is not allowed to grow in electric yards or in the 3-m (10-ft.) buffer around the yard because it could interfere with the operation of the ground mat. A ground mat is a metal grid

buried under the soil to "ground" the electrical equipment of the substation. A plant growing up through the ground mat could provide another grounding path for electricity. If a person were to touch the plant during a fault in or near the substation, he or she could be electrocuted.



Substations and electric yards—no vegetation is allowed to grow inside the area, so that electrical "grounding" of equipment and the safety of workers are maintained.

Current Practice. Currently, we control vegetation inside a substation fence and in the 3-m (10-ft.) buffer zone beyond, using herbicides and occasionally using steamers or burners. In addition, trees or other vegetation that could fall across the fence and into the substation are manually cut.

Line Sectionalizing Switches

Line sectionalizing switches are located on transmission towers that redirect electricity on the right-of-way. Generally there is a metal grated platform on the tower where a worker stands to operate the switching equipment.

Requirements. Just as in a substation (and for the same reasons), the area below the sectionalizing switch platform needs to be kept completely clear of vegetation. The function of the ground mat in the substation is identical to that of the platform on the tower. If a plant grows up through or near the platform, it can create a difference in the potential. If there is a fault in the area, and a worker touches or comes close to that plant while on the platform, the worker could be injured or killed.

Current Practice. Current practice is to remove all vegetation by herbicides, usually with a backpack sprayer or hand-applied granular method.

Non-electric Facilities

Radio/Microwave Stations

Bonneville operates about 381 microwave or radio stations with antennae or repeaters; about 146 of these stations are co-located at Bonneville substations. Together, they form the backbone of our communication system, carrying information from substation to substation for the protection and control of the Bonneville transmission system as well as for voice communication for Bonneville's radios and telephones.

These fenced stations are typically located at prominent points in the landscape, on hilltops or mountaintops.

Requirements. In order to access the towers and buildings easily, the area within the station fence is graveled and kept clear of most vegetation.

Current Practice. We use herbicide to keep the fenced area clear.

Landscaping Maintenance Buildings and Yards

Landscaping is in place outside many of our substation yards and buffers, as well as at many of our maintenance buildings and other "yard" facilities. Depending on their function, these maintenance facilities vary in size from 0.8 – 8 ha (2 – 20 ac.). Typically, most of the land has been developed with buildings, landscaping, and pavement with few or no natural features.

Landscape vegetation outside St. Johns substation in Oregon.

Requirements. Vegetation is managed in these areas for aesthetics, ease of handling equipment, maintenance of a firebreak, and prevention of the spread of noxious weeds.

Current Practice. We maintain landscaping by manual and mechanical cutting, as well as by spraying herbicide on turf, shrub beds, and gravel or dirt work yards and parking lots.

Related Projects and Planning Activities

The following Bonneville documents or projects are related to managing vegetation in the Bonneville transmission service area.

Bonneville Documents/ Projects

- **Transmission Facilities Vegetation Management Program Environmental Impact Statement (1983)** - This is our most recent program-wide vegetation management EIS. (USDOE/Bonneville, 1983)
- **Columbia Gorge Vegetation Management Project Environmental Assessment (July 1996)** (USDOE/Bonneville, 1996)
- **Bonneville-Hood River Vegetation Management Environmental Assessment** (USDOE/ Bonneville,1998a)

Forest Service and Bureau of Land Management Documents/ Projects

The following USFS and/or BLM documents or projects are related to managing vegetation in the Bonneville transmission service area.

- **Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl (Northwest Forest Plan) (April 1994)** - This USFS/BLM plan was developed to help find strategies to manage Federal forestlands west of the Cascade Range in Oregon and Washington. (USDA/USFS and USDOI/BLM, 1994b)
- **Interior Columbia Basin Ecosystem Management Project East Draft Environmental Impact Statement (May 1997)** - This draft statement was developed by four Federal land management agencies to help select an ecosystem-based management strategy for the lands that the agencies administer east of the crest of the Cascade Range in Oregon and Washington. (USDA/USFS and USDOI/BLM, 1997a)

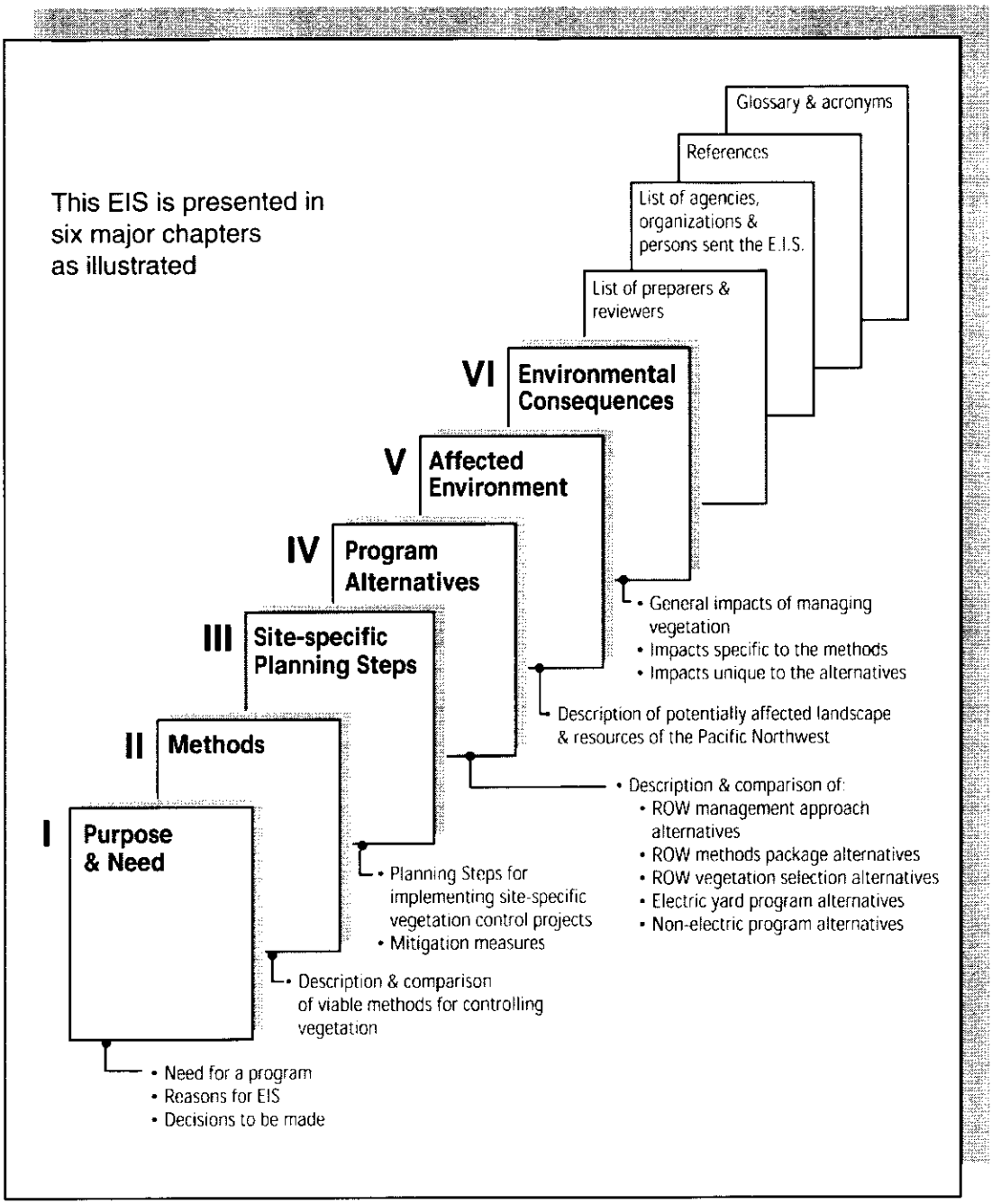
- **Interior Columbia Basin Ecosystem Management Project Upper Columbia River Basin Draft Environmental Impact Statement (May 1997)** - This draft statement was developed by four Federal land management agencies to help select an ecosystem-based management strategy for the lands that the agencies administer in the upper Columbia River Basin. (USDA/USFS and USDOI/BLM, 1997b)
- **Vegetation Treatment on BLM Lands in Thirteen Western States (May 1991)** - This BLM document analyzes the environmental impacts of vegetation treatment on BLM lands, using integrated pest management methods. (USDOI/BLM, Wyoming, 1991b)
- **A Guide to Conducting Vegetation Management Projects in the Pacific Northwest Region (1992)** - This USFS document is the guide for implementing vegetation management on Forest Service land in Washington and Oregon. It summarizes information contained in the 1992 Amended ROD for Managing Competing & Unwanted Vegetation (FEIS) published in 1988 (USDA/USFS Pacific Northwest Region, 1998b) and the Mediated Agreement from 1989. (USDA/USFS, 1992a)
- **Western Oregon Program-Management of Competing Vegetation (August 1992)** - This document presents the provisions to govern the BLM's integrated management treatment program for undesirable plants and competitive levels of vegetation on public lands in western Oregon. (USDOI/BLM, 1992c)
- **Northwest Area Noxious Weed Control Program (December 1985)** - This BLM document covers a five-state program for the control of noxious weeds on BLM-administered lands. (USDOI/BLM, 1987a)

How This DEIS Is Organized

An EIS follows a guide[5] for what must be covered and (generally) in what order. Because this EIS covers so many different choices and alternatives (including different techniques), the figure on the next page shows what kind of information is provided, and where. Some people like to go straight to particular topics of interest; others like to read through chapter by chapter. In either case, Figure I-3 will help you find what you want to know.

[5] The National Environmental Policy Act (NEPA) specifies the need for environmental studies of major Federal actions that might affect the environment; the Regulations of the Council on Environmental Quality spell out the approach and content.

Figure 1-3: How This DEIS Is Organized



ROW = Right-of-way

This page intentionally left blank.