

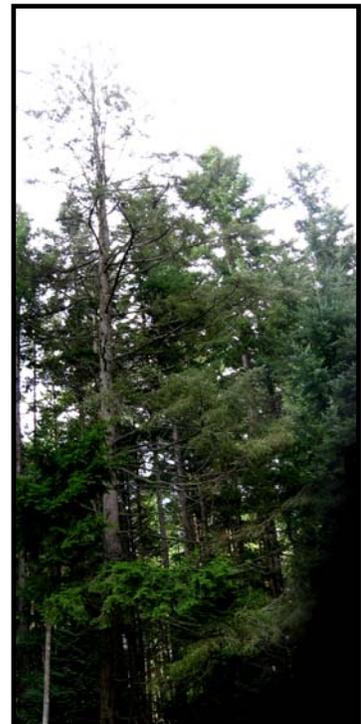
**SEATTLE CITY LIGHT
VEGETATION MANAGEMENT PLAN**

FOR

BRIDLE TRAILS STATE PARK

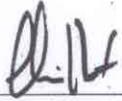
**PREPARED BY
SEATTLE CITY LIGHT
ENVIRONMENTAL AFFAIRS DIVISION**

MAY 2, 2008



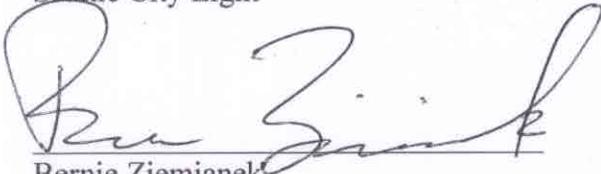
ACCEPTANCE STATEMENT

This Vegetation Management Plan for Bridle Trails State Park has been prepared by Seattle City Light in cooperation with Washington State Parks and with review by the Bridle Trails Foundation. Seattle City Light and Washington State Parks hereby agree to the management and coordination protocols provided in the Plan. The Plan will be reviewed and revised as needed every four years. In the event of irreconcilable differences either Party, as represented by the signatories below, can withdraw from this Plan with 30 days notice after September 1, 2008. Within the 30-day notice period both Parties will make a good-faith effort to mutually to resolve differences and amend the Plan and practices as needed.



5/2/08

Chris Heimgartner
Officer of Customer Service and Energy Delivery
Seattle City Light



5-2-2008

Bernie Ziemianek
Director of Energy Delivery Operations
Seattle City Light

Judy Johnson
Deputy Director
Washington State Parks and Recreation Commission

TABLE OF CONTENTS

1.0 INTRODUCTION	1
1.1 PARK SETTING.....	1
1.2 TRANSMISSION LINE ROW DESCRIPTION	3
1.3 REGULATORY BACKGROUND - SCL.....	4
1.4 REGULATORY BACKGROUND – STATE PARKS	5
1.5 PLAN PURPOSE AND INTENT	5
1.6 PLAN DEVELOPMENT.....	6
2.0 ROUTINE HAZARD TREE INSPECTION AND MANAGEMENT	8
2.1 INSPECTION AND IDENTIFICATION OF HAZARD TREES.....	9
2.1.1 Rating System	9
2.1.2 Inspection and Identification Process	10
2.2 HAZARD TREE MANAGEMENT.....	11
2.2.1 Coordination with State Parks.....	11
2.2.2 Tree Removal and Disposal Procedures	12
2.3 REPLANTING AND NOXIOUS WEED CONTROL.....	13
2.3.1 Coordination with State Parks	14
2.3.2 Process.....	14
2.3.3 Monitoring and Weed Control	15
2.4 SCHEDULE.....	15
3.0 ANNUAL ROW INSPECTION AND CLEARANCE	16
3.1 ANNUAL INSPECTION	16
3.2 CLEARANCE	18
3.3 SIDE-TRIMMING	18
3.4 SLASH AND DEBRIS MANAGEMENT	19
4.0 EMERGENCY INSPECTION AND RESPONSE	20
4.1 EMERGENCY INSPECTION	20
4.2 EMERGENCY TREE REMOVAL	20
5.0 SERVICE ROAD MAINTENANCE	21
5.1 ROUTINE MAINTENANCE	21
5.1.1 Planning and Coordination with State Parks	21
5.1.2 Procedures.....	21
5.2 ROAD RESURFACING	22
5.2.1 Planning and Coordination with State Parks	22
5.2.2 Procedures	22
6.0 COORDINATION PROTOCOL SUMMARY	23

7.0 REFERENCES 26

APPENDIX B GLOSSARY
APPENDIX B EASEMENT
APPENDIX C HAZARD TREE RATING FORM

FIGURES AND TABLES

Figure 1 Eastside transmission line through Bridle Trails State Park.....2
Figure 2 Schematic (plan view) of transmission line ROW and easement
through Bridle Trails State Park.....3
Figure 3 Management of trees with laminated root rot.....13
Figure 4 Example of small trees designated for clearance in the wire (orange)
and border zones (yellow) within the cleared portion of the
transmission line ROW through Bridle Trails State Park.....17
Table 1. Coordination protocol summary.....23

SEATTLE CITY LIGHT VEGETATION MANAGEMENT PLAN

BRIDLE TRAILS STATE PARK

1.0 INTRODUCTION

On April 5, 2007 representatives from Seattle City Light (SCL) and Washington State Parks met at Bridle Trails State Park (Park) to discuss several ongoing issues related to vegetation and road maintenance along a section of SCL's transmission line right-of-way easement (ROW) that runs through this Park. As outcome of this meeting SCL and State Parks agreed to prepare a cooperative management agreement for the ROW and adjacent forest within the Park (see Washington State Parks Bridle Trails Resource Stewardship Report, May 3, 2007). As the foundation for this agreement SCL committed to producing this site-specific Vegetation Management Plan (Plan) for the ROW through Bridle Trails State Park.

This introductory section describes the Park and SCL's ROW, provides the regulatory background for vegetation management, and presents the goals and objectives developed for the Plan. The organization of the remainder of the Plan is as follows:

- Chapter 2** – Routine Hazard Tree Inspection and Management
- Chapter 3** – Annual ROW Inspection and Clearance
- Chapter 4** – Emergency Inspection and Response
- Chapter 5** – Service Road Maintenance
- Chapter 6** – Coordination Protocol Summary
- Chapter 7** – References

A glossary of terms is provided in Appendix A.

1.1 PARK SETTING

Bridle Trails State Park (Park) is a 482-acre day-use park in Bellevue, Washington (Figure 1) that is well-known for its horse trails and equestrian shows. The Park includes some old-growth trees but consists mostly of second-growth lowland coniferous forest typical of the Puget Sound region. The dominant tree species is Douglas-fir (*Pseudotsuga menziesii*), although western hemlock (*Tsuga heterophylla*), western red cedar (*Thuja plicata*), big-leaf maple (*Acer macrophyllum*), and red alder (*Alnus rubra*) occur as well. Douglas-fir trees in the Park generally range from 65 to 250 years old and are 80 to 180 feet tall (personal communication, J. Erckmann, Bridle Trails Park Foundation, October 9, 2007). The Park receives great deal of use by equestrians, and many horse shows and events are held annually. With 28 miles of trails, the Park is also a popular area for hiking and running.

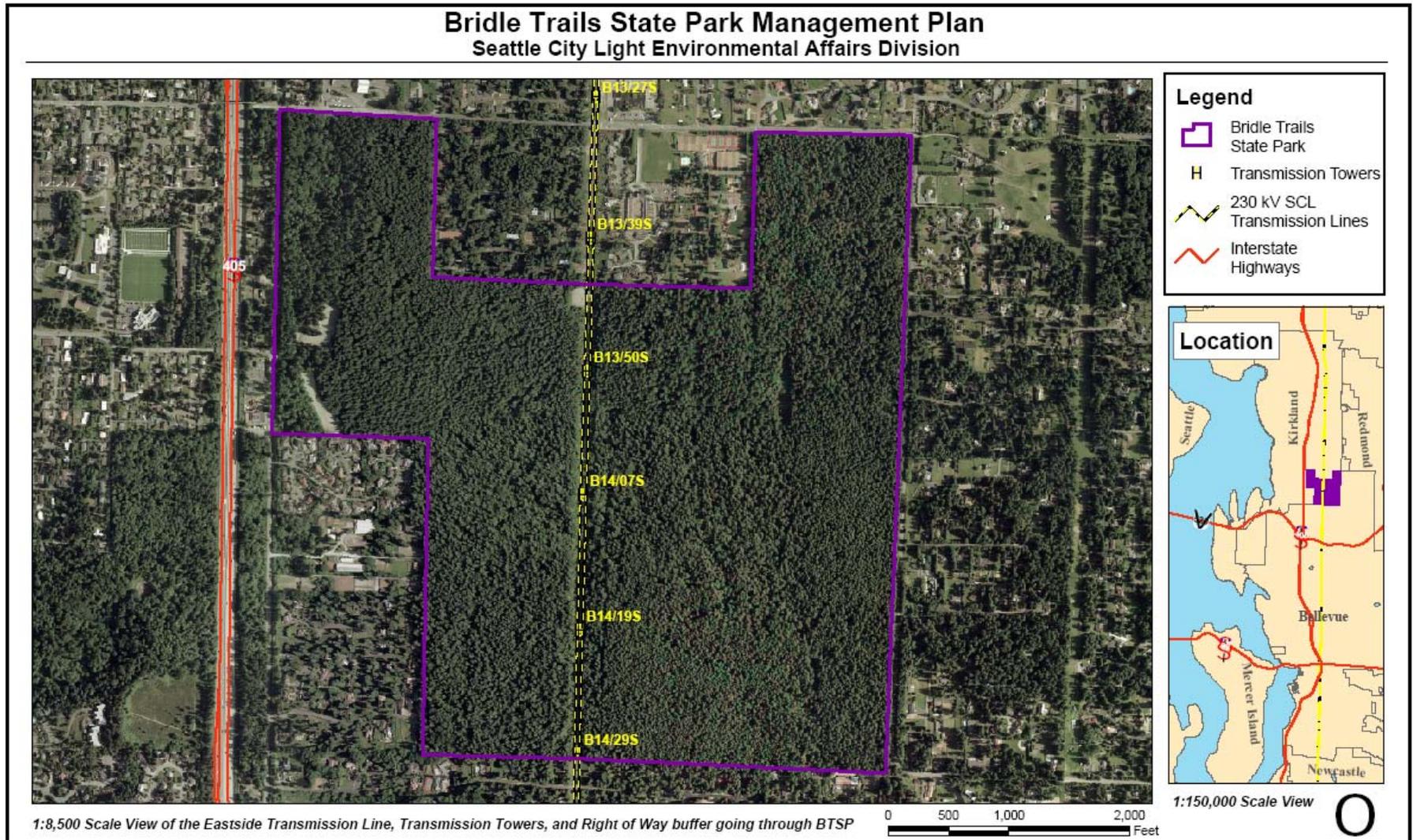


Figure 1. Eastside transmission line through Bridle Trails State Park.

1.2 TRANSMISSION LINE ROW DESCRIPTION

SCL's 230-kV Eastside Transmission Line extends 27 miles from the Bothell Substation in Snohomish County south to the Maple Valley Substation near Renton. The line carries two circuits; the wires on the east side were energized when the line was constructed, while those on the west side were energized in 2000. The lines are 30-50 feet above the ground depending on temperature and load-related sag. Bridle Trails State Park includes about 0.75 mile of the Eastside transmission line, four towers, and an associated service road (Figure 1).

The transmission line ROW easement in the Park is 150 feet wide and includes the area approximately 112 feet to the east of the transmission centerline and 38 feet to the west (Figure 2). The area within the ROW that is kept clear of tall trees (cleared area) is 38 feet on the west side of the line and a minimum of 38 feet (typically 50 feet) on the east side. SCL has an easement that allows trees to be cut within the ROW and up to 200 feet on either side of the transmission line centerline (see Appendix B for easement). This 400-foot wide easement was logged in about 1936 and the trees outside the cleared portion of the ROW are 80-120 feet tall. A maintenance road runs through the cleared area on the west side of the ROW.

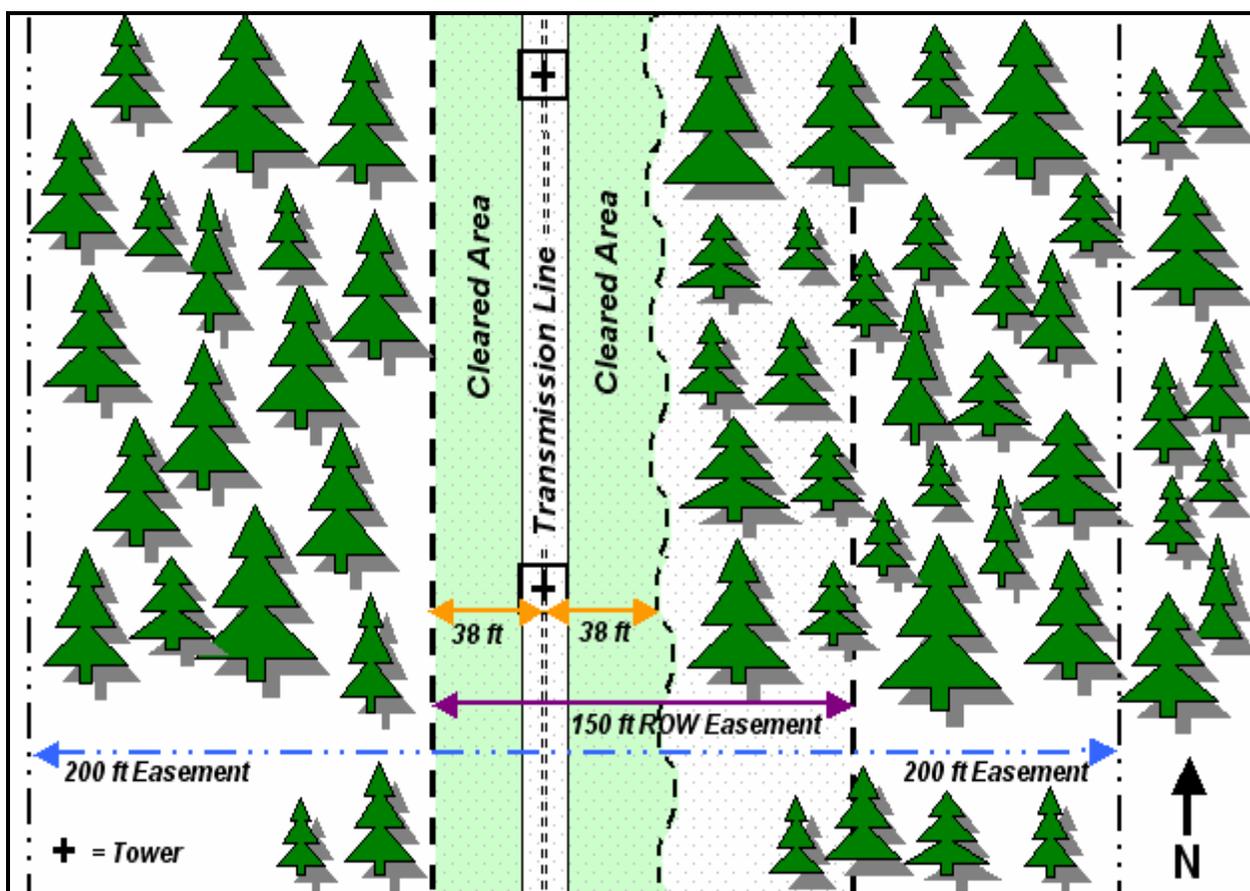


Figure 2. Schematic (plan view) of SCL's transmission line ROW and easement through Bridle Trails State Park. *Notes: (1) Cleared area on east side of ROW is a minimum of 38 ft in width and ranges from 38-62 ft; (2) 400 ft-wide easement extends 200 ft from either side of the center of the transmission line.*

In general, SCL follows the “wire zone-border zone” concept, as recommended by the American National Standard Institute (ANSI) A300 (Part 7), for managing vegetation within transmission line ROWs (ANSI 2006). The wire zone for the Eastside Line extends 33.5 feet on either side of the centerline and includes the 17.5 feet-wide area beneath the tower arm and wires and an additional 16 feet beyond the edge of the energized conductor. The border zone extends from the edge of the wire zone to the outer edge of the established ROW. The goal for vegetation management in the wire zone is to develop and maintain grasses, forbs, and low growing shrubs (<10 feet tall at maturity). The goal for the border zone is to establish and maintain tall shrubs or small trees (10-25 feet tall at maturity). Conifers, cottonwoods (*Populus balsamifera*), big-leaf maple, and red alder trees are typically removed from both the wire and border zones of transmission line ROWs in most areas, although this has not been the case in the Park.

1.3 REGULATORY BACKGROUND - SCL

On August 14, 2003, an electric power blackout affected large portions of the Northeast and Midwest United States and Ontario, Canada. A joint U.S.-Canada Power System Outage Task Force (Task Force) investigated the causes of the blackout and concluded that one of the four primary causes was inadequate vegetation management (Federal Energy Regulatory Commission [FERC] 2004). As a result, the North American Electric Reliability Corporation (NERC 2006) developed new standards for transmission vegetation management programs (TVMPs), in effect as of April 7, 2006, that are intended to improve the reliability of electric transmission systems by:

- Preventing outages from vegetation located on ROWs;
- Minimizing outages from vegetation adjacent to ROWs
- Maintaining clearances between transmission lines and vegetation on and along transmission ROW; and
- Universal reporting of vegetation-related outages of the transmission systems to the respective regional reliability organizations (RROs) and NERC.

The new standards for reporting categorize an outage as one of the following:

Category 1 — Grow-ins: Outages caused by vegetation growing **into** lines from vegetation inside and/or outside of the ROW;

Category 2 — Fall-ins: Outages caused by vegetation falling into lines from **inside** the ROW;

Category 3 — Fall-ins: Outages caused by vegetation falling into lines from **outside** the ROW.

Vegetation management is one of 83 reliability standards enforced by the NERC. As of June 2007, penalties for non-compliance with one or more of the standards range from sanctions that impose limitations or restrictions on activities; remedial action directives designed to correct

conditions, practices or other actions posing a threat to reliability; and fines of \$1,000 to \$1 million per day (NERC 2007).

Information from the literature suggests that trees growing into power lines (Category 1) account for less than 15 percent of all tree-related outages. The numbers of trees capable of striking power lines from outside the ROW (Category 3) overwhelm the numbers of trees on the ROW and are typically the cause of most outages, particularly under severe weather conditions (Guggenmoos 2001).

SCL is in the process of applying the new NERC standards for maintaining electric transmission reliability and reducing power outages. These standards increase the requirement for vegetation management maintenance and reporting within SCL's easements. Vegetative management includes identifying high risk trees (living and dead) which have high potential to fail and endanger powerlines. Consequently, SCL must have:

- (1) Clear guidelines for vegetation management activities which their vegetation maintenance staff and crews can easily understand, explain, and implement;
- (2) Reasonable inspection schedule and tree removal approval timeframes with State Parks to efficiently protect the transmission line, schedule work crews, and be responsive after impacts from storm events; and
- (3) Procedures and communication protocols that allow the utility to respond to emergencies and to remove trees that represent an imminent danger to the transmission lines because they are dead, dying, diseased, cracked, split, or leaning over the line or into the wire zone.
- (4) The ability to remove small trees within the wire zone before they become significant trees. This does not refer to all small trees, but to those species considered unsuitable because they have a mature height incompatible with conductor clearance requirements.

1.4 REGULATORY BACKGROUND – STATE PARKS

State Parks has a statewide program to manage high risk trees within target recreation areas. State Parks strives to be good stewards to the forest environment. State Parks cannot accept extensive pruning, topping, or removal of trees along utility easements that could damage overall forest structure, lead to forest edge unraveling, and otherwise create further high risk tree conditions. Removal of any tree >10 inches diameter-at-breast-height (dbh) within the boundary of Bridle Trails State Park must meet the statewide program requirements and be documented through a Tree Activity Report and approval process.

1.5 PLAN PURPOSE AND INTENT

The Eastside Line has a history of tree-related outages, particularly in the 15-miles south of the King-Snohomish county line. There have been seven tree-related outages recorded along the Eastside Line from 2001-2007 and five of these have been in the Park (December 2001, October

2005, January 2006, December 2006, and December 2007). Most of the outages have been associated with severe weather, such as the wind storm on December 13, 2006, and several have involved multiple trees. The last major vegetation management work on the ROW through the Park was in 1998-1999 in preparation for energizing the wires on the west side of the line.

SCL has recently updated the Transmission Vegetation Management Plan for its entire transmission system (TVMP). However, the TVMP does not include protocols for working within a state park or other sensitive locations, such as the ROW through Bridle Trails State Park. The **purpose** of this site-specific Plan is to guide vegetation management now and in the future along SCL's ROW through the Park. The overall **goals** for the Plan are to:

- Reduce power outages caused by tree failure within or adjacent to the ROW;
- Protect the health, aesthetics and integrity of the forest within Bridle Trails State Park and its recreational opportunities, particularly the equestrian activities;
- Facilitate clear communications between SCL and State Parks staff and clarify responsibilities; and
- Establish an intact, low growing native plant community in the cleared area of the ROW that is resistant to invasion by trees.

As adopted by SCL and State Parks, this site-specific Plan will be wholly incorporated into the TVMP as an appendix and will provide the primary guidance for vegetation management in and adjacent to the ROW through Bridle Trails State Park.

1.6 PLAN DEVELOPMENT

This Plan was developed by SCL's Environmental Affairs Division in cooperation with SCL's Vegetation Management Unit and the State Parks' Forestry-Natural Resources Manager, who is also a certified arborist and certified utility arborist. Expert consultation on how to best manage trees with laminated root rot in proximity to "sensitive targets" was provided by a forest pathologist from the U.S. Forest Service, Westside Forest Insect and Disease Service Center in Portland.

The Plan focuses on managing hazard trees because these trees represent the greatest risk to the transmission line. This approach is based on the best available science, as summarized below:

- Healthy Douglas-fir trees less than 15 inches dbh can withstand wind speeds of 150 miles per hour or more before stem failure. The minimum wind speed to cause stem failure of Douglas-fir trees between 20 and 40 inches dbh is about 125 mph (Harvey and Hessburg 1992).
- The healthy Douglas-fir trees along the edge of the ROW provide a natural barrier to wind penetration of the stand. The roots and stems of these edge trees have developed under wind-stressed conditions and removing them can cause "unraveling" of the forest

edge. These occurs because the stems and root systems of interior trees have developed under less wind-stressed conditions, and are therefore more vulnerable to being uprooted by winds they could have withstood when protected by the adjacent edge trees (Norse 1990).

A concentrated effort will be made to recognize these recommended best management practices and put them to use when designating and/or marking trees for maintenance or removal, and performing actual utility vegetation maintenance activities on-site.

2.0 ROUTINE HAZARD TREE INSPECTION AND MANAGEMENT

In the terminology of ROW management, a hazard tree is defined as a structurally unsound tree on or off the ROW with a high probability of falling and contacting transmission conductors, guy wires, or structures (ANSI A300). Hazard trees include those that are dead, dying, diseased, deformed, or otherwise unstable. Managing hazard trees in and adjacent to the ROW through Bridle Trails State Park presents some obvious challenges for both SCL and Park staff for the following reasons:

- Douglas-firs bordering the cleared area along the ROW are 80-120 feet tall, and trees of this size could contact the transmission line if they fell. The west side of the transmission line is particularly problematic because the cleared area extends to the edge of the ROW and is only 38 feet wide (see Figure 2). In addition, the prevailing winds are from the southwest. Reducing the risk of tree-related outages clearly requires management of trees outside the ROW.
- The Park receives a great deal of recreational use, with associated concerns for aesthetics and public safety. In addition, the forest stands in the park represent some of the best remaining wildlife habitat in an area that is otherwise residential.

State Parks and SCL recognize these challenges and have agreed to “*intensive management of the forest edge by SCL along the utility easement; inspecting and assessing tree stands within the adjacent park’s forestland (outside the ROW), locating pockets of disease or damaged trees and removing those hazards, replanting, and thereby promoting enhancement of forest health and a more stable forest structure*” (Bridle Trails Resource Stewardship Report May 3, 2007).

A good hazard tree identification and removal program can substantially improve line reliability, particularly along transmission lines (Guggenmoos 2003). The objective of such a program is to target and remove trees with a high probability of failure that could fall and contact the lines. This chapter describes the procedures that SCL will use to:

- Identify and remove hazard trees, as defined above, from the forest adjacent to the transmission line through the Park;
- Replant to mitigate the removal of these trees; and
- Coordinate these activities with Park staff.

Annual inspection and management of brush and smaller trees within the wire zone of the ROW (≈ 67 feet) is addressed in Chapter 3. *Under this Plan it is worth noting that in Bridle Trails State Park SCL will not remove danger trees, which are defined as trees that could contact the transmission line if they fall, unless also identified as hazard trees.* This could change, however, if NERC requirements become stricter in the future. If this occurs SCL would work with State Parks to produce a Plan that meets the new NERC requirements. NERC compliance is a mandatory obligation for SCL.

2.1 INSPECTION AND IDENTIFICATION OF HAZARD TREES

Of the 400-foot wide transmission line easement through the Park, only about 90 feet are cleared and do not support large trees. Inspection will therefore be focused on large trees growing outside the cleared area but within 200 feet of either side of the transmission centerline (see Figure 2), a total area of about 28 acres (13 acres on the east side and 15 acres on the west side). Inspection and identification of hazard trees will be conducted every **four** years by a certified arborist with expertise in diseases specific to Douglas-fir, particularly root rot, and the State Parks' Forestry-Natural Resources Manager. Laminated root rot has been identified by the State Parks' Forestry-Natural Resources Manager and a SCL consultant arborist in a number of locations in the forest adjacent to the ROW (personal communication, P. Carris, State Parks' Forestry-Natural Resources Manager, April 5, 2007; personal communication, D. Thompkins and K. Russell, The Evergreen Arborist, April 7, 2008), and these trees are especially susceptible to failure. Laminated root rot, which is caused by the fungus *Phellinus weirii*, spreads through tree roots at a rate of approximately 1 foot per year (Nelson et al. 1981) and is often difficult to detect in early stages of infection, particularly in older Douglas-fir (Washington State University [WSU] 2007). SCL will contract with a City of Seattle or consultant arborist with expertise in identifying trees with this disease.

2.1.1 Rating System

The system for identifying and rating hazard trees in the Park under this Plan was adapted by SCL from the hazard tree assessment methods used by the City of Seattle's Department of Planning and Development (2007), American Forest Pathology Committee (2007), and Forestech, LLC (n.d.). It is a simplified version of the evaluation process used by the International Society of Arboriculture (ISA) and is focused on identifying trees that need to be removed in the current year management cycle or monitored over the next 4-year cycle. The hazard risk rating system that will be used to assess trees within the easement through the Park for disease and defects is as follows:

Risk Level 1 – Trees that represent a high risk hazard to the transmission line, with failure possible during normal weather. Includes trees that:

- are completely dead;
- are partially dead;
- have cracks or splits in the trunk or major branches;
- are leaning at >20 degree angle;
- show evidence of disease, including:
 - loose or cracked bark,
 - decay,
 - cankers encompassing more than half of the circumference of the tree,
 - conks or mushroom bracts,
 - infestation by ants, termites, or boring insects, or
 - thin, yellowish (necrotic) foliage
- have an obviously weak or diseased root system;

- are apparently healthy Douglas-fir but within 15 feet of a tree with an obviously diseased root system.

Risk Level 2 – Trees that represent a potential threat to the transmission line, with failure likely to occur during a storm. Includes trees that:

- have defective branches;
- have cavities and holes;
- have forks, crooks, or multiple stems, which if failure occurs, could contact the lines;
or
- show evidence of minor root system decay

Risk Level 3 – Trees that are apparently healthy and with no obvious structural defects. These trees have a low failure probability under normal weather or typical storm conditions. However, there is no guarantee that these trees will not fail, particularly in severe winds or ice/snow-loading. The literature suggests that as many as half the trees that fail along power lines ROWs have no obvious defects (Guggenmoos 2003), underscoring the importance of a careful inspection program.

2.1.2 Inspection and Identification Process

Hazard tree inspection and identification in the forested portion of transmission line easement through the Park will be jointly conducted by SCL's consultant arborist and State Parks' Forestry-Natural Resources Manager, with assistance provided by other SCL staff as needed. The Manager of Energy Delivery Services will contact the State Parks' Forestry-Natural Resources Manager to determine a mutually acceptable time for the joint inspection. The State Parks' Forestry-Natural Resources Manager will notify the Park Manager of the planned inspection dates. Park staff may participate in the inspection if desired.

The boundaries of the 400-foot wide easement through the Park were surveyed and marked in 2008 by Seattle Public Utilities under a contract to SCL. A map and information on potential hazard trees is available from SCL's consultant arborists (Thompkins and Russell, April 2008) for the initial tree inspection and identification process (2008).

Inspection will involve the following steps:

- Marking Risk Level 1 trees with flagging and assigning them an identification number that will correspond to the rating sheet that will be filled out for each tree (See Appendix C for Hazard Tree Rating Form). Risk Level 1 trees may also be marked with paint in a location on that is not visible from Park roads or trails as a backup measure in case the flagging comes off the tree.
- Marking Risk Level 2 trees with a paint dot near the base of the north side of the tree.
- Mapping Risk Level 1 and 2 trees using a Global Positioning System (GPS).

- Assessing Risk Level 1 trees to determine if they will be:
 - converted to a wildlife tree or snag by topping to a height that does not represent a threat to the line if the tree were to fail;
 - felled with the entire log or log segments left on site as down wood for wildlife;
or
 - felled to preserve commercial value, if possible.

The treatment of each tree will be marked on the flagging and recorded on the rating sheet. The ability to fell a tree for commercial value will depend on its location as this can be difficult to accomplish for single trees growing in dense stands. Similarly, whether or not a tree can be safely topped, or if an entire log can be left for wildlife, will also depend on site conditions.

Risk Level 3 trees will not be flagged or mapped, nor will a rating sheet be filled out for them. It is expected that the survey can be complete within 2-3 days (personal communication, P. Carris, State Parks' Forestry-Natural Resources Manager, December 13, 2007). Following the survey, the locations of Risk Level 1 and 2 trees will be entered into SCL's Geographic Information System (GIS) to produce a map.

Within two weeks of completing the inspection, the SCL Plant Ecologist will provide the Park Manager with copies of the rating sheets and the GIS map for review. State Parks' staff will be responsible for using the rating forms and map to prepare the Tree Activity Report needed for SCL to obtain approval to remove hazard trees from the Park. State Parks' staff will complete the Tree Activity Report within 2 weeks, and file it as needed to meet State Park requirements.

2.2 HAZARD TREE MANAGEMENT

During each cycle of hazard tree management (every four years), all Risk Level 1 trees will be felled or topped to create wildlife trees. Risk Level 2 trees will be monitored for a change in status or failure. If two or more Risk Level 2 trees fail within the typical four-year inspection cycle, SCL will discuss additional management options with the State Parks' Forestry - Natural Resources Manager and Park Manager.

2.2.1 Coordination with State Parks

Prior to implementing hazard tree management, the SCL Energy Delivery Support Services Manager will contact the State Parks' Forestry-Natural Resources Manager and Park Manager to set a mutually acceptable schedule and to agree on stump heights and methods for disposal of branches and other debris (see Section 2.2.2). Coordination will be via a written letter or e-mail. The SCL Crew Chief will then draft a Work Plan that references the Hazard Tree Rating Forms and State Parks Tree Activity Report and includes the agreed upon schedule and procedures for hazard tree management. The Work Plan will be signed by the State Parks' Forestry-Natural Resources Manager, Park Manager, and SCL Energy Delivery Support Services Manager. Once

signed by State Parks, the Work Plan will serve as approval for SCL to proceed with hazard tree management activities in the Park.

Park staff will be responsible for notifying the public of planned hazard tree management activities in the Park via signs and/or community meetings. For safety reasons it may be necessary to close portions of the Park during tree removal activities. Park staff will be responsible for informing the public about closures and for enforcement. SCL crews will receive documented training on the importance of minimizing impacts to adjacent trees and any other applicable Park requirements. Similarly, SCL crews will provide State Park staff with documented information and training on how to recognize electrical hazards.

2.2.2 Tree Removal and Disposal Procedures

General Procedures

Hazard trees will be felled or topped to create wildlife trees by SCL crews or by powerline clearance crews under contract to SCL. Crews will follow safety standards set by the Occupational Safety and Health Administration (OSHA), Washington Industrial Safety and Health Administration (WISHA), and SCL Safety Division, as well as State Department of Natural Resource (DNR) fire precaution levels and other measures as required by State Parks.

To the extent possible, trees will be cut in a manner that minimizes damage to the trunk and root systems of adjacent healthy trees. Trees felled for commercial value will be cut near the base and left in place for pick-up by State Park staff. State Parks will be responsible for the marketing, sale, preparation, and transport of commercial timber if necessary. If desired by Park staff and where possible, trees to be retained as down wood will be cut to create “high stumps,” 3-7 feet tall. In addition to contributing to coarse woody debris on the forest floor, high stumps have been shown to enhance seedbed conditions for shrub species, provide substrate for epiphyte growth, and be used as nest sites and escape cover for arboreal rodents (Carey and Johnson 1995). In areas where high stumps are not desired, tree stumps will be 1-2 feet high unless located near trails or other public use sites. In these locations stumps will be cut close to the ground (< 2 inches high) to avoid being a trip hazard. The branches of trees to be felled and left in place will be cut flush with the trunk, so that tree trunks lie directly on the ground.

There are several ways for disposing of branches resulting from hazard tree removal. They can either be: (1) chipped, with the residual chips blown on site; (2) chipped, with the residual chips removed from the site; (3) lopped and scattered on site; or (4) piled on site. SCL typically lops and scatters branches on site, provided that they do not block access or represent a safety or fire hazard, but can use other methods.

Procedures in Laminated Root Rot Pockets

In laminated root rot pockets it will be necessary to cut some healthy trees in addition to those marked as hazardous because of obvious symptoms of disease. This is because an infected Douglas-fir has a high potential of failure before it shows obvious crown symptoms (Harvey and Hessburg 1992). The known infected tree will be cut along with all Douglas-fir within 15 feet

(Figure 3). The SCL Crew Chief, Plant Ecologist and/or State Parks' Forestry-Natural Resources Manager will examine the freshly cut stumps of the apparently healthy Douglas-fir trees for the characteristic crescent-shaped brown stain. If any of these trees show the characteristic stain, cutting will proceed for another 15 feet from the tree with the stain (as recommended by W. Theis, Ph.D., Pacific Northwest Research Station, U.S. Forest Service, Corvallis, Oregon, as cited in an e-mail from, D. Hildebrand, Ph.D., Westside Forest Insect and Disease Service Center, U.S. Forest Service, Portland, Oregon to P. Carris State Parks' Forestry-Natural Resources Manager, March 14, 2008). This process will continue until none of the cut trees show evidence of laminated root rot (Figure 3). The SCL Crew Chief or Plant Ecologist will fill out hazard rating forms for the potentially infected trees, mark their locations on the map, and provide this information to Park staff. Park staff will be responsible for amending the Tree Activity Report but will allow the additional trees to be felled.

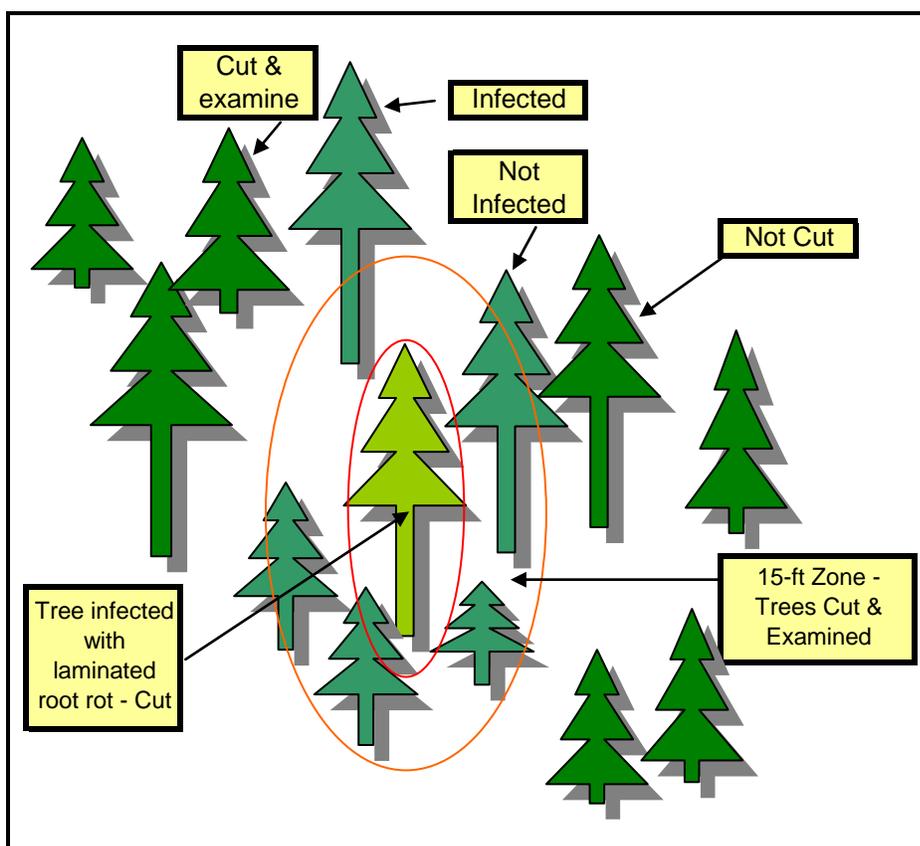


Figure 3. Management of trees with laminated root rot.

2.3 REPLANTING AND NOXIOUS WEED CONTROL

Depending on the year and conditions, hazard tree management may result in the removal of a substantial number of trees, particularly if pockets of laminated root rot are cleared. SCL will replant areas where hazard trees have been removed from the easement outside the cleared area with the objectives of:

- Improving forest health and structural diversity;
- Promoting a mix of tree species with heights that are compatible with a nearby transmission line; and
- Maintaining or improving aesthetics.
- Choosing species with low susceptibility to laminated root rot.

Species selected for replanting will depend on the size of the hazard tree removal area, site conditions, and distance from the transmission line. For example, Douglas-fir or other tall conifer species may be replanted at distances >150 feet from the line. Special consideration will be given to sites that previously supported trees with laminated root rot. If >100 feet from the line these sites will be planted with resistant conifer species, such as western red-cedar or western white pine (*Pinus monticola*), depending on site conditions. Big-leaf maple may also a possibility at more distant sites since it is typically reaches a maximum height of 100 feet at maturity and would increase the species and structural diversity of Park forestlands. Sites <100 feet from the line will be replanted with small trees and tall shrubs to provide screening cover and wildlife habitat. Species may include Pacific dogwood (*Cornus nuttallii*), vine maple (*Acer circinatum*), black hawthorn (*Crataegus douglasii*), Indian plum (*Oemleria cerasiformis*), serviceberry (*Amelanchier alnifolia*), red-flowering current (*Ribes sanguineum*), oceanspray (*Holodiscus discolor*), Pacific rhododendron (*Rhododendron macrophyllum*), and huckleberries (*Vaccinium* spp.). Shrub/tree size at time of planting will be large enough to ensure high likelihood of survivability under normal conditions. SCL typically uses gallon-size or greater stock, depending on availability from native plant nurseries.

2.3.1 Coordination with State Parks

Within one month following the removal of hazard trees, SCL's Plant Ecologist will visit the Park to estimate the size of each area where trees were felled and evaluate site conditions. This site visit will be conducted with Park staff to determine site specific objectives for species composition and forest structure. SCL will then prepare a draft Planting Plan which will identify the species and planting density by site, as indicated on the GIS map of the easement, as well as monitoring and weed control measures. Unless otherwise directed by Park staff, only native species will be used for replanting. SCL will submit a draft planting plan to the Park Manager and the State Parks' Forestry-Natural Resources Manager. Replanting will occur only after the plan is finalized and agreed to by State Parks.

2.3.2 Process

Plant placement will be directed on-site by SCL's Plant Ecologist. Planting work will be performed by SCL crews. Planting density will depend on the size and location of the site. Only one or two small trees may be replanted at site where a single tree was removed. Larger sites close to areas that receive more public use may be planted more densely with a mixture of shrubs and trees. The number of trees and shrubs planted will be recorded, by species, and referenced to

the map of the tree removal sites. Each site will also be photographed to provide a reference for future monitoring.

2.3.3 Monitoring and Weed Control

SCL's Plant Ecologist will monitor the replanted sites for 3 years to determine planting success and to control noxious weeds that may have established since planting. Additional planting will occur only if the overall survival rate drops below 80 percent. Noxious weed control, using treatment methods agreed upon with Park staff, is expected to occur in each of the monitoring years.

After each monitoring visit SCL's Plant Ecologist will prepare a brief report documenting the number of surviving plants, the locations of noxious weed control activities, methods used for control, and any issues/problems related to the site. Photographs will also be taken from the same location established at planting and included in the report. The report will be provided to the Park Manager and the State Parks' Forestry-Natural Resources Manager by December of each year.

2.4 SCHEDULE

The initial cycle of hazard tree inspection and identification is tentatively planned for early spring 2008. Pending approval by Park staff, hazard tree management activities are proposed to occur in spring-summer 2008. To maximize plant survival, replanting will usually be scheduled in the fall (October-November) after hazard tree removal. Subsequent inspection, removal, and replanting cycles will typically occur every **four** years, but may be adjusted over time.

3.0 ANNUAL ROW INSPECTION AND CLEARANCE

SCL inspects and clears vegetation along its transmission line ROWs annually. Routine ROW inspection and clearance activities include the following:

- Annual inspection
- Clearance
- Side-trimming
- Slash and debris management

The objective of these activities is to efficiently manage vegetation in the ROW to maintain transmission line reliability. This chapter describes the procedures that SCL will use annually for managing incompatible small trees, tree limbs, and brush in the approximately 90-foot wide cleared area (Figure 4) of the transmission line ROW through the Park, and how these activities will be coordinated with the Park Manager. While SCL annually inspects the transmission and ROW, clearance, side-trimming, and associated slash and debris management are conducted as needed and may not be required every year. SCL typically schedules these activities on a four year cycle, but may do some minor clearance more often.

3.1 ANNUAL INSPECTION

Inspection involves examining a transmission line ROW with the objective of determining the extent of vegetation maintenance needed during annual clearance. In addition, the line and towers are inspected for any damage or normal wear requiring maintenance. Prior to conducting the annual inspection, the SCL Manager of Energy Delivery Support Services will notify the Park Manager in writing by letter or e-mail.

During the annual inspection SCL staff will flag and record the number of small trees in the cleared area of the ROW that need to be removed. The heights of trees designated and flagged for clearance will vary by location within the cleared area:

- Wire Zone (33.5 feet on either side of the transmission centerline) - Any tree or shrub \geq 12 feet tall or that could reach 12 feet in height within 4 years. In practice this means that small trees are cut when they \geq 8 feet tall (Figure 4).
- Border Zone (4.5 feet beyond the wire zone on the west side of the line and an average of 16.5 feet beyond the wire zone on the east side) - Any tree that could contact the transmission lines if it were to fall (Figure 4).

In addition, trees with branches growing into the wire zone (<16 feet from the conductors) will be marked for pruning using a different colored flagging. Trees will be marked for side-trimming only if < 50 percent of the branches are growing into the wire zone. If > 50 percent of the crown would need to be pruned out of the wire zone SCL will consult with the State Parks' Forestry-Natural Resources Manager to consider removal. According to ANSI 300, crown reduction of >50 percent stresses a tree and can contribute to instability.

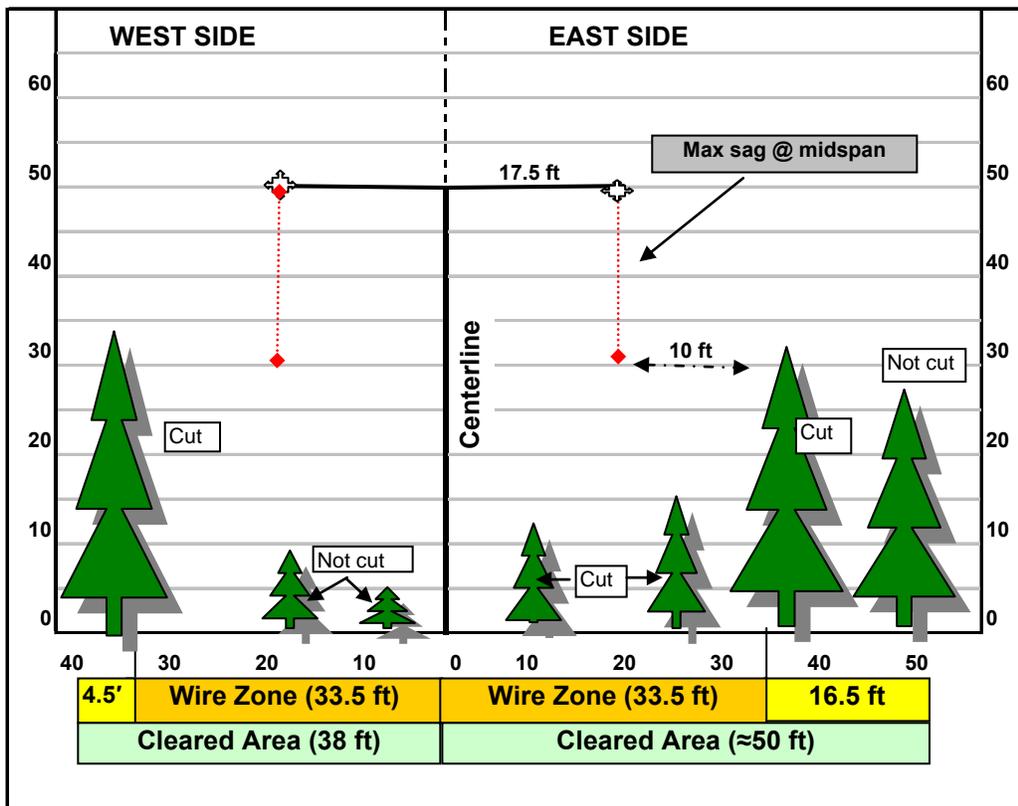


Figure 4. Example of small trees designated for clearance in the wire (orange) and border zones (yellow) within the cleared portion of the transmission line ROW through Bridle Trails State Park. (Note: The border zone on the east side of the transmission line extends an additional 62 feet, on average, to the outer edge of the ROW but trees in this area will not be subject to annual clearance).

Following the ROW inspection, SCL's Energy Delivery Support Services Manager will notify the Park Manager if clearance activities are needed that year. Notification will be in writing by letter or e-mail and provide the following information:

- Number of small trees flagged for clearance;
- The number of trees marked for pruning;
- Towers requiring maintenance or conductors requiring replacement; and
- Proposed schedule for clearance and line/tower maintenance

The Park Manager will follow up with the SCL Energy Delivery Support Service Manager within one week by phone. The purpose of this call will be to discuss any issues and to coordinate on the following:

- Current year transmission line/tower maintenance plans;
- Plans for pruning large trees and clearing the small trees flagged during inspection, and slash/debris management; and
- The schedule for vegetation clearance and any required line/tower maintenance activities.

State Parks will be responsible for preparing the Tree Activity Report for removal of any trees \geq 10 inches diameter-at-breast height (dbh) scheduled for clearance (WAC 352-28). Prior to beginning vegetation clearance, the SCL Energy Delivery Support Service Manager will notify the Park Manager in writing (via letter or e-mail) of the dates that crews will be working in the Park.

3.2 CLEARANCE

Vegetation clearance will be accomplished using manual (i.e. lopping by hand crews) and/or mechanical (i.e., chainsaws, mowing) methods. In general, small trees will be cut below the lowest live limb to eliminate the continued growth of lateral branches. Stumps will be cut parallel to the ground for safety. Because the Park receives a great deal of equestrian use, stumps are to be \leq 2 inches from the ground to minimize injury to horses near trails and paths. Some small trees, such as willow (*Salix* spp.), may be girdled to stop growth and left in place as long as they will not block horse trails or hiking paths when they fall. Objectives for slash/debris management will determine if the cut trees are removed from the site or left within or near the ROW (see Section 3.4).

Trees will be felled in a manner that minimizes soil disturbance and damage to low-growing native shrubs and other vegetation in and near the ROW. As permitted by State Parks, stumps of all individual hardwoods trees will be treated to prevent regrowth with an herbicide labeled for cut surface treatment. Stumps will be treated as soon as practical following cutting, with herbicide applied to the outermost bark ring and the remaining trunk and root collar. Pathfinder 2 (active ingredient triclopyr) is the only herbicide currently used by SCL for stump treatment. Application will be consistent with label instructions and standard work practices.

3.3 SIDE-TRIMMING

Pruning will be used to reduce the risk of branches contacting the conductors, and will apply primarily to trees growing along the cleared area on the west side of the ROW. Trees will be side-trimmed, targeting only the branches currently growing in the wire zone (<16 feet of the conductor), or those that would be expected to reach the wire zone within a year. All work will be done in accordance with ANSI A300 (Part 1) by SCL crews using manual and mechanical methods. ANSI A300 (Part 1) standard practices for utility pruning recommend using the minimum number of cuts needed to accomplish the objective; considering the natural structure of the tree; and cutting to the laterals or parent branch.

Crews will follow safety standards set by the Occupational Safety and Health Administration (OSHA), Washington Industrial Safety and Health Administration (WISHA), and SCL Safety Division, as well as DNR fire precaution levels and other measures as required by State Parks.

Objectives for slash/debris management will determine if the limbs are removed from the site or left within or near the ROW (see Section 3.4).

3.4 SLASH AND DEBRIS MANAGEMENT

Slash is defined as brush and limbs <6 inches in diameter that are removed during clearance and hazard tree management activities. Debris is woody material >6 inches in diameter, and includes tree trunks and large limbs. The objective of slash/debris management is to ensure that these materials are disposed of in a manner consistent with Park staff objectives, which will be determined in the planning phase of the work (see Section 3.1).

There are four primary ways of managing slash and debris resulting from vegetation maintenance along the transmission line ROW. It can either be: (1) chipped, with the residual chips blown on site; (2) chipped, with the residual removed from the site; (3) lopped and scattered on site; or (4) piled on site. SCL typically lops and scatters slash and debris on site, provided that these materials do not block access or represent a safety or fire hazard. Branches are cut flush with the trunk, so that tree trunks lie directly on the ground; stems and limbs are lopped and scattered. However, it may be desirable to use chipping in the Park because of aesthetics and/or safety concerns. Slash/debris that is chipped can either be removed from the site or scattered or blown on-site to a depth of ≤ 4 inches.

4.0 EMERGENCY INSPECTION AND RESPONSE

Periodically, SCL needs to inspect transmission lines and ROWs on an emergency basis and to repair damage to the line or remove trees that have failed and threaten the line. This chapter describes these activities relative to Bridle Trails State Park and coordination with Park staff.

4.1 EMERGENCY INSPECTION

Emergency inspection is the process of examining a transmission line and associated ROW with the objective of identifying damage or hazardous conditions requiring immediate repair or maintenance to avoid a power outage, fire, or public safety concerns. SCL conducts such inspections after severe storms or fires and during outages. Inspections are typically conducted by SCL line crews who drive and/or walk along ROW service roads.

It is typically very difficult to implement notification procedures during emergency situations. Prior notification of the Park Manager will not be part of emergency inspections. Following an emergency inspection, however, SCL Crew Chief will immediately inform the Park Manager of any condition that might present a public safety concern. Similarly, Park staff who observe any conditions near the transmission line or ROW that need immediate attention should promptly notify SCL. An up to date contact list for each responsible staff member for both the Park and SCL will be provided by each organization on an annual basis.

4.2 EMERGENCY TREE REMOVAL

High winds, storms, ice, and snow can cause even apparently healthy trees to fail. In extreme weather conditions, trees without external indicators of risk can also occasionally fail. Emergency tree removal is needed when trees fall into the transmission lines. Emergency tree removal is also needed when after-storm or outage inspection identifies trees in or near the ROW that represent an imminent threat to the lines because they are cracked, split, or leaning over the line or into the wire zone. Trees on the lines or trees identified in after-storm or outage inspections as imminent threats to the lines, as defined above, will be removed immediately by SCL crews. Trees will be felled and left in place provided they do not block access or Park trails. The SCL Crew Chief will notify the Park Manager by phone or e-mail within 24 hours of an emergency tree removal activity. Park staff will be responsible for retroactively filling out the State Park Tree Activity Report and noting the emergency tree removal.

5.0 SERVICE ROAD MAINTENANCE

The ROW through Bridle Trails State Park includes a service road that SCL uses for purposes of maintaining and inspecting the transmission line and towers. The road is gated to prevent vehicle access by anyone except SCL and Park staff, and as a result, it also serves as a trail for runners, hikers, and equestrians. This chapter describes SCL's procedures for routine road maintenance and periodic resurfacing and coordination with Park staff.

5.1 ROUTINE MAINTENANCE

Routine service road maintenance through the Park includes:

- Clearing the associated drainage ditches and culverts to prevent water from ponding during wet weather;
- Brushing along the road sides to prevent vegetation from encroaching; and
- Minor road surface repairs.

SCL is responsible for maintaining the service road to standards that allow use by the utility's large bucket trucks, as well as by smaller trucks and equipment. In general, routine road maintenance occurs on an as needed basis and is often scheduled concurrently with annual vegetation clearance.

5.1.1 Planning and Coordination with State Parks

Planning related to service road maintenance will start with inspection by the SCL Crew Chief to assess road conditions and identify the specific tasks that need to be conducted. SCL's Energy Delivery Support Services Manager will then notify the Park Manager, in writing (letter or e-mail), of the planned maintenance tasks and proposed schedule. The Park Manager will follow up by phone within 2 weeks to resolve any questions and coordinate on the schedule. Prior to beginning road maintenance, the SCL Energy Delivery Support Service Manager will notify the Park Manager in writing (via letter or e-mail) of the dates that crews will be working.

5.1.2 Procedures

Drainage ditches are typically cleared using a backhoe. Vegetation and other debris removed from the ditches will be mulched at the road edge. Brushing along the roadsides is accomplished using a mower with the arms set to cut all vegetation encroaching on the road edge. Brush is also mulched at the road edge. Minor road repairs include filling potholes and grading to smooth out the surface. Potholes are filled using 5/8 inch-minus gravel; grading is accomplished using a backhoe to make small repairs. To the extent possible, SCL crews will minimize disturbance to soil and native vegetation away from the road edge from mowing and ditch clearing activities.

5.2 ROAD RESURFACING

Occasionally it is necessary to resurface the service road through the Park to repair major damage or simply address degradation that occurs over time. This process typically requires grading and adding a layer of new gravel. SCL understands the importance of scheduling road resurfacing at a time when this activity will not interfere with any planned public events in the Park.

5.2.1 Planning and Coordination with State Parks

Prior to any planned road resurfacing project, the SCL Crew Chief will develop a Work Plan describing the extent of the planned resurfacing, gravel size, schedule, and any other requirements. The SCL Energy Delivery Support Services Manager will submit this plan to the Park Manager for review and will follow up with a phone call to discuss any needed clarifications or revisions. Prior to beginning road resurfacing, the SCL Energy Delivery Support Service Manager will notify the Park Manager in writing (via letter or e-mail) of the dates that crews will be working.

5.2.2 Procedures

Road resurfacing and grading will be conducted by SCL crews. Unless otherwise specified by the Park Manager, all new road surface material will consist of 5/8 inch-minus gravel, which is considered the largest size that will not cause problems for equestrians and other trail users. Resurfacing and grading will be conducted in a way that minimizes damage to adjacent vegetation. Any excess gravel will be removed from the Park.

Following project completion, the Park Manager and the SCL Energy Delivery Support Services Manager will jointly inspect the road and agree to the resolution of any identified problems. Inspection will occur the within one week of project completion, with any problems resolved in the next two weeks.

6.0 COORDINATION PROTOCOL SUMMARY

A number of coordination protocols between SCL and State Parks have been included in Chapters 2-5 of this Plan regarding vegetation management in Bridle Trails State Park. The purpose of these protocols is to provide a formalized a process for coordination between State Parks and SCL to foster understanding and communication. These protocols are summarized in Table 1 for reference.

In addition to these following these protocols, SCL and State Parks will meet every four years (on the same cycle as hazard tree management) to review this Plan and make any necessary revisions. The intent of this meeting will be to assess how the various coordination protocols and activities are functioning, identify any problems, and develop solutions. The review will include the SCL Energy Delivery Support Services Manager, SCL Natural Resources and Environmental Permitting Manager, the Park Manager, and State Parks' Forestry-Natural Resources Manager.

Table 1. Coordination protocol summary.

Activity	Protocol	Timing	Staff & Task ¹
Hazard tree inspection & identification	Inspection notification & scheduling	Once every 4 yrs, late winter, early spring	SCL Energy Delivery Support Services Manager contacts the State Parks' Forestry-Natural Resources Manager to identify a mutually acceptable time for a joint inspection of the forested portion of the transmission line easement.
	Joint inspection	Once every 4 yrs, by mutual agreement	State Parks' Forestry-Natural Resources Manager notifies the Park Manager of the planned inspection dates. SCL consultant arborist & State Parks' Forestry-Natural Resources Manager jointly inspect & identify hazard trees. Other SCL staff & Park staff may participate.
	Hazard tree rating forms and map	2 weeks after inspection visit	SCL Plant Ecologist provides to Park Manager & State Parks' Forestry-Natural Resources Manager.
	Tree Activity Report	2 weeks after tree rating forms are received.	State Parks' staff completes & submits; Park Manager notifies SCL Energy Delivery Support Services Manager.
Hazard tree management	Coordination on schedule, stump heights, & slash/debris disposal	Once every 4 yrs, prior to initiating hazard tree management	SCL Energy Delivery Support Services Manager coordinates with the Park Manager (letter or e-mail).
	Work Plan	After coordination between SCL and Park	SCL Crew Chief prepares Work Plan with review by SCL Energy Delivery Support Services Manager. Work Plan signed by State Parks' Forestry-Natural Resources Manager, Park Manager, & SCL Energy Delivery Support Services Manager.

Activity	Protocol	Timing	Staff & Task¹
	Public notification	Prior to beginning management activities	Parks notifies the public of planned hazard tree removal activities via signs &/or a community meeting.
Replanting & weed control	Site visit	Within 1 month of hazard tree removal	SCL Plant Ecologist & Park staff participate.
	Planting Plan	Prior to planting	SCL Plant Ecologist prepares Planting Plan for review by Park staff & State Parks' Forestry-Natural Resources Manager.
Annual ROW Inspection & Clearance	Notification of inspection	Annually, prior to inspection	SCL Manager of Energy Delivery Support Services notifies Park Manager in writing (letter or e-mail).
	Notification of inspection results	Following inspection if clearance is needed	SCL Energy Delivery Support Services Manager provides results to the Park Manager (letter or e-mail) and consults with State Parks' Forestry-Natural Resources Manager for any trees that may need >50% crown reduction.
	Coordination phone call	1 week after notification of inspection results	Park Manager & SCL Energy Delivery Support Services Manager coordinate on clearance plans & schedule.
	Tree Activity Report, if needed	Not set	State Parks' staff completes.
	Notification of clearance work dates	Prior to beginning work	SCL Energy Delivery Support Services Manager notifies Park Manager (e-mail or letter).
Emergency inspection	Follow up phone call if public safety issue identified	Immediately following inspection	SCL Crew Chief calls Park Manager.
Emergency tree removal	Follow up phone call	Within 24 hours of emergency removal	SCL Crew Chief calls or e-mails Park Manager
	Tree Activity Report	Not set	Park staff completes.
Routine service road maintenance	Notification of maintenance plans & schedule	After inspection	SCL Energy Delivery Support Services Manager notifies Park Manager (e-mail or letter).
	Coordination phone call	Within 2 weeks of inspection notification	Park Manager & SCL Energy Delivery Support Services Manager coordinate on maintenance plans & schedule.
	Notification of maintenance work dates	Prior to beginning work	SCL Energy Delivery Support Services Manager notifies Park Manager (e-mail or letter).
Road resurfacing	Work Plan	After inspection & prior to scheduling work	SCL Energy Delivery Support Services Manager submits written Work Plan to Park Manager for review.
	Coordination phone call	Within 2 weeks of Work Plan submittal	Park Manager & SCL Energy Delivery Support Services Manager coordinate on resurfacing plans & schedule.

Activity	Protocol	Timing	Staff & Task¹
	Notification of resurfacing work dates	Prior to beginning work	SCL Energy Delivery Support Services Manager notifies Park Manager (e-mail or letter).
	Inspection	Within 1 week of project completion	SCL Energy Delivery Support Services Manager, SCL Crew Chief, & Park Manger participate.

¹ Listed staff may delegate responsibilities for any given task.

7.0 REFERENCES

- American Forest Pathology Committee. 2007. Hazard trees. *In*: Forest and shade tree pathology. <http://www.forestpathology.org/hazard.html>. Accessed August 14, 2007.
- American National Standards Institute. 2006. Standards A300 (Part 7) for tree care operations—tree, shrub, and other woody plant maintenance—standard practices (Integrated vegetation management a. Electric utility rights-of-way).
- American National Standards Institute. 2001. Standards A300 (Part 1) for tree care operations—tree, shrub, and other woody plant maintenance—standard practices (pruning). Revision of ANSI 300-1995.
- Baumert, J. and M. Heffley. 1990. Seattle City Light rights-of-way maintenance plan (1989 update/1990 goals). Seattle, WA. 38 pp.
- Carey, A.B. and M.L. Johnson. 1995. Small mammals in managed, naturally young, and old-growth forests. *Ecol. Appl.* 5(2) 536-552.
- City of Seattle. 2007. Environmentally critical areas: Hazard trees. Application instructions and submittal requirements. Department of Planning and Development. www.seattle.gov/dpd/publications/cam/cam331b.pdf. Accessed August 14, 2007.
- FERC (Federal Energy Regulatory Commission). 2004. Utility vegetation management final report. 2004. Prepared by CN Utility Consulting, March 2004. Commissioned to support the federal investigation of the August 14, 2003 Northeast Blackout. 131 pp.
- Forestech, LLC. n.d. Hazard tree rating system. <http://hazardtree.com/rating.php>. Accessed August 14, 2007.
- Guggenmoos, S. 2003. Effects of tree mortality on power line security. *Journal of Arboriculture* 29(4): 181-196
- Guggenmoos, S. 2001. Managing tree-conductor conflicts by risk assessment. *UAA Quarterly* Summer 2001 9(4):1-10.
- Harvey, Jr., R.D. and P.F. Hessburg. 1992. Long-range planning for developed sites in the Pacific Northwest. The context of hazard tree management. United States Department of Agriculture, Forest Service, Pacific Northwest Region. Portland, Oregon. 106 pp.
- NERC (North American Electric Reliability Corporation). 2006. Standard FAC 0003-1. Transmission vegetation management program. 5 pp. ftp://www.nerc.com/pub/sys/all_updl/standards/rs/FAC-003-1.pdf. Accessed July 30, 2007.

- NERC. 2007. New era in United States electric industry starts June 18. Mandatory reliability standards enforceable for the first time. Memo from NERC, June 1, 2007. Contact: Susan Boucher, Princeton, NJ.
- Nelson, E.E., N.E. Martin, and R.E. Williams. 1981. Laminated root rot of western conifers. Forest Insect and Disease Leaflet 195. U.S. Department of Agriculture, Forest Service. <http://www.fs.fed.us/r6/nr/fid/fidls/fidl159.htm>. Accessed August 2, 2007.
- Norse, E.A. 1990. Ancient forests of the Pacific Northwest. Island Press. Covelo, CA. 327 pp.
- Parks (Washington State Parks). 2007. Bridle Trails Resource Stewardship Report. Prepared by Parks and SCL. May 3, 2007.
- Thompkins, D. and K. Russell. 2008. Bridle Trails Tree Evaluation. Prepared for Seattle City Light. April 2008. 14 pp.
- Washington State University. 2007. Forest health notes: Laminated root rot, yellow ring rot. Cooperative Extension, Department of Natural Resources Science Extension. <http://ext.nrs.wsu.edu/forestryext/foresthealth/notes/laminatedrootrot.htm>. Accessed September 24, 2007.

APPENDIX A

GLOSSARY

Easement – The 400-foot wide area through the Park where SCL has the right to cut trees to ensure the safe and reliable delivery of power; extends 200 feet on either side of the transmission centerline.

Border Zone - The border zone for a 230 kV transmission line typically extends from the edge of the wire zone to the edge of the ROW and is usually managed to maintain a cover of tall shrubs or small trees (10-25 feet at maturity). The border zone for the Eastside Line through Bridle Trails State Park extends from the edge of the wire zone (33.5 feet from the center line) to the outer edge of the cleared area (about 4.5 feet on the west side of the line and 16.5 feet on the east side).

Cleared Area – The area within the ROW that is typically kept clear of tall trees. In the Park this area is 38 feet on the west side of the line and a minimum of 38 feet (typically 50 feet) on the east side.

Danger Tree – Any tree that could contact the transmission line if it were to fall.

Federal Energy Regulatory Commission (FERC) – The federal agency that regulates and oversees energy industries in the economic, environmental, and safety interest of the American public.

Hazard Tree - Trees that represent a high risk hazard to the transmission line, with failure possible during normal weather, due to damage or disease, or because they are dead, dying, or otherwise unstable.

North American Electric Reliability Corporation (NERC) – The agency charged by the FERC to ensure the reliability of the bulk power system in North America. NERC develops and enforces reliability standards; assesses adequacy annually via 10-year and seasonal forecasts; monitors the bulk power system; evaluates users, owners, and operators users for preparedness; and educates, trains, and certifies industry personnel.

Right-of-way Easement (ROW) – The area on either side of a transmission line where SCL has the right to clear vegetation to ensure the safe and reliable delivery of power. The ROW through the Park is 150 feet wide and includes the area approximately 112 feet to the east of the transmission centerline and 38 feet to the west.

Transmission Vegetation Management Plan (TVMP) – Plans developed by utilities, as required by the NERC, to manage vegetation to ensure the reliable delivery of power.

Wire Zone – The wire zone for a 230 kV transmission line typically extends 33.5 feet on either side of the centerline and includes the 17.5 feet-wide area beneath the tower arm and wires and an additional 16 feet beyond the edge of the energized conductor. The goal for vegetation management in the wire zone is to develop and maintain grasses, forbs, and low growing shrubs.

APPENDIX B

EASEMENT

34
a 82V
5/31/27

(Personal Land)

WASHINGTON STATE - Dept of Public Lands

RETURN TO LIGHT DEPT.
RIGHT OF WAY FILES

DEPARTMENT OF PUBLIC LANDS
Office of Commissioner

April 30, 1927

In Re Applications by the City of
Seattle for Rights of Way for Trans-
mission Line over Certain State Lands
in King County.

*
O R D E R .
*

It appearing to the Commissioner at this time that the City of Seattle has filed in this office the applications hereinafter enumerated for easements for rights of way for a transmission line under the provisions of Chapter 97 of the Session Laws of 1919; and

It further appearing that the applicant is a municipal corporation, proposing to construct across the lands covered by the said applications, a transmission line for the purpose of transmitting electric power; that the land within the rights of way so applied for is limited to an amount necessary for the purpose required, together with sufficient land on either side thereof for ingress and egress to maintain and repair the same, and there being no reason why the said rights of way should not be granted; it is, therefore

ORDERED and DETERMINED that the full value of the land included within the said applications be and the same is hereby fixed and assessed at \$506.50; that the total amount, together with the statutory fee has been paid, and the right, power, privilege and authority to construct, operate and maintain a transmission line upon and over the lands hereinafter described, including the right to cut standing timber, if any, within a radius of two hundred (200) feet on either side of said transmission line which may be dangerous to the operation and maintenance of the said line, may be exercised in accordance with the statute; the lands included within these rights of way, the application numbers and the appraised value thereof being as follows:

Application No. 12913: (240516-3-001) geocoded

NOTED
C. E. W.
5/2/27

All that portion of the NE $\frac{1}{4}$ of SW $\frac{1}{4}$ of section 16, township 24 north, range 5 east, W. M., included in a strip of land 50 feet in width lying west of, parallel and contiguous to the east line of said subdivision and extending from the south line thereof northerly about 975 feet to the south line of the school house site deeded by the State of Washington to School District No. 134 August 23, 1910, under application No. 6631,

The right of way hereinabove described has an area of 1.12 acres according to the plat thereof on file in the office of the Commissioner of Public Lands at Olympia, Washington, appraised at \$28.00.

Subject, however, to an easement for right of way for county road granted to the County of King, June 20, 1925, under application No. 1106.

Application No. 12914: (250516-4-001)

C.F.# 903

Those portions of the SW $\frac{1}{4}$ of NE $\frac{1}{4}$, the SE $\frac{1}{4}$ of

250516-4-001

~~240516-3-001~~

A

(250516-1,2,3,4-001)

of NW $\frac{1}{4}$, the E $\frac{1}{2}$ of SW $\frac{1}{4}$ and the W $\frac{1}{2}$ of SE $\frac{1}{4}$ of section 16, township (25) north, range 5 east, W. M., included within the limits of a strip of land 100 feet in width having 50 feet of such width on each side of the north and south center line of said section.

The right of way hereinabove described has an area of 9.00 acres according to the plat thereof on file in the office of the Commissioner of Public Lands at Olympia, Washington, appraised at \$360.00.

Application No. 12915: (260516-2,3-00?)

Those portions of the SE $\frac{1}{4}$ of NW $\frac{1}{4}$ and the E $\frac{1}{2}$ of SW $\frac{1}{4}$ of section 16, township (26) north, range 5 east, W. M., included in a strip of land 50 feet in width lying west of, parallel and contiguous to the north and south center line of said section.

The right of way hereinabove described has an area of 4.74 acres according to the plat thereof on file in the office of the Commissioner of Public Lands at Olympia, Washington, appraised at \$118.50.

Subject, however, to an easement for right of way for county road granted July 6, 1910, under application No. 391; also

Subject, as to the NE $\frac{1}{4}$ of SW $\frac{1}{4}$, to an easement for right of way for electric transmission line granted to Puget Sound Traction, Light & Power Company, under application No. 9121.

Dated this 30th day of April, A. D. 1927.

C. V. SAVIDGE
Commissioner of Public Lands

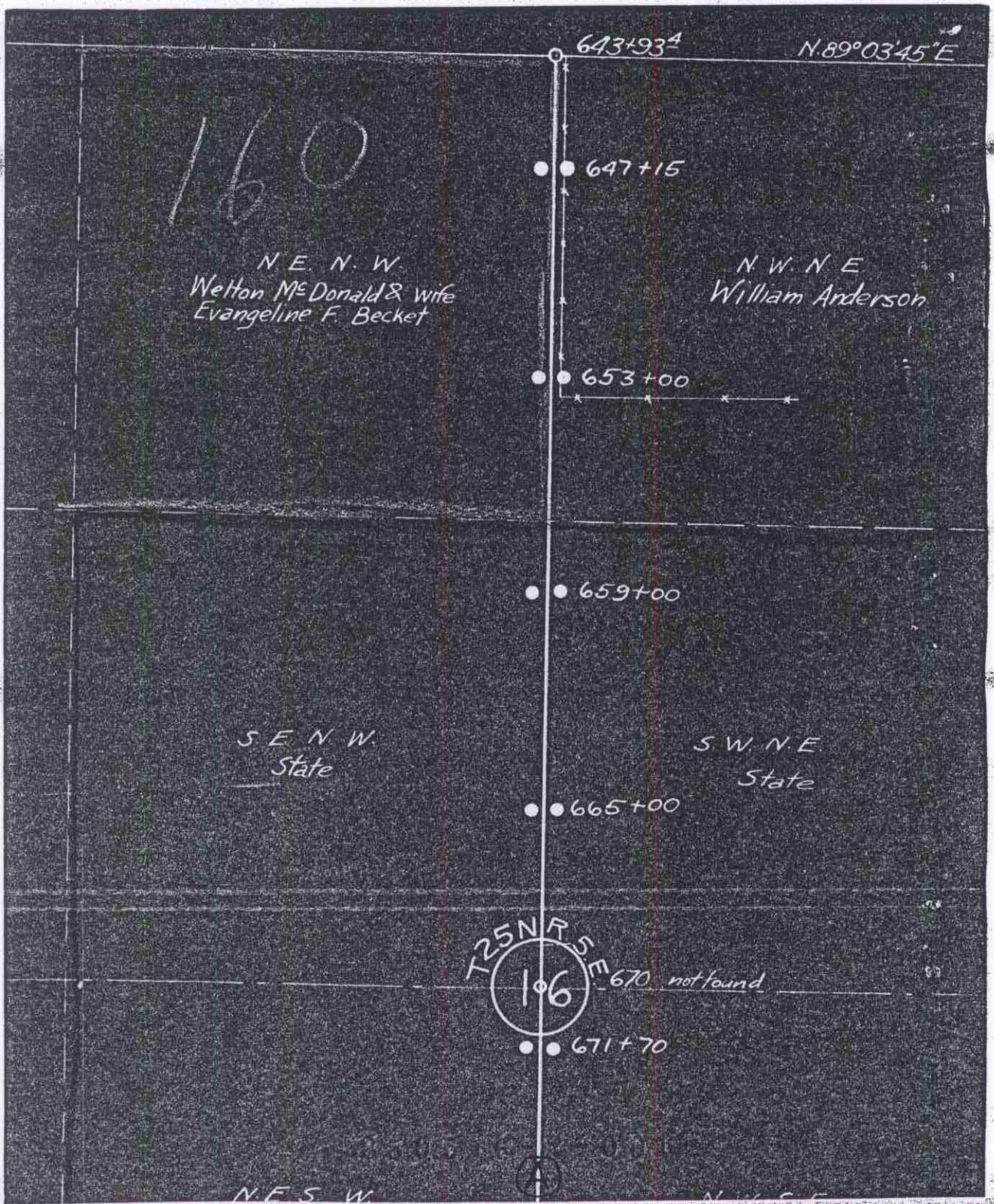
~~240516-3-001~~

250516-4-001

4/21/58 - compared copy with original in Comp File - OK

melann

PARTIAL MAP - DRILL MISSING



250516-4-001

Copy
EASEMENT

Know All Men by these Presents, That Evangelina H. Becket, a
Mellie McDonald, a widow, his wife, of

County, State of Washington, for and in consideration of the sum of Fifty
(50⁰⁰/₁₀₀) Dollars, in hand paid, and other good and valuable considerations, hereby

convey to the City of Seattle, a municipal corporation, an easement for the construction, operation
tenance of an electric transmission system consisting of Two (2) towers and the
wires, anchors, guys and other appurtenances over, along and across the following described real
situated in King County, Washington, to-wit:

The Northeast quarter of Northwest quarter
(NE¹ NW¹) section 16, Township 25
Range 58, W.M.

as the same is shown upon blueprints
hereto attached and made part hereof,
together with the right to remove trees that by falling might endanger the transmission system.

Dated this 18th day of April, 1927

(Signed)

Mellie McDonald
Evangelina H. Becket

NOTED
C.E.W.

250516-2-001

A

643+934

N. 89° 03' 45" E

647+15

N. W. N. E.
William Anderson

653+00

N. E. N. W.
Welton McDonald & wife
Evangeline F. Becket

659+00

S. E. N. W.
State

S. W. N. E.
State

665+00



670 not found

43 - Verdict No. 94. That the just compensation to be paid to the owners, occupants and persons otherwise interested therein for the taking of a perpetual easement for a right-of-way over and across the following described real property in the County of King, State of Washington, to-wit:

East 25 feet of east 75 feet of northeast quarter of northwest quarter, Section 16, Township 25 North, Range 5 East, W. M.;

for the construction, operation and maintenance of an electric transmission system, consisting of one (1) tower, approximately located at Engineer's Station 652-00, together with the necessary wires, anchors, guys and other appurtenances, together with the right of access thereto for said purposes, which the defendants King County, heirs of Walton McDonald, deceased, Nellie McDonald, a widow, and Evangeline F. Becket, a widow, claim to own, or to be otherwise interested in, is the sum of Nineteen (\$19.00) Dollars.

This verdict is made upon the condition that the owners of the said property, and their successors and assigns, shall retain the right to go upon and across said above described property at any and

250516-2-001

(B)

all times and to use all of said land not occupied by petitioner's one (1) tower for the purpose of raising crops of any kind, animal husbandry, and all other agricultural and farming purposes whatsoever, and upon the condition that the petitioner shall use the said property only for the purpose of constructing, operating and maintaining an electric transmission system thereon, consisting of one (1) tower.

And upon the further condition that the petitioner has acquired no rights hereby to fence the land or to build any roadways, except such temporary way as may be necessary for construction purposes, and that any stumps within the easement boundary may be taken out as before, except where the blasting method is used, in which event the property owner shall give ten (10) days written notice to the petitioner herein, and the work is to be done under the supervision of a representative of the petitioner.

And upon the further condition that should the petitioner at any time in the course of its maintenance and operation of its transmission system, or if it shall in the construction of any of its lines, other than the first line to be constructed, damage or destroy any crop or crops then growing within said easement boundary, it shall reimburse the then owner of such crop or crops for the damage so caused.

250516-2-001

Copy

165

EASEMENT

Know All Men by these Presents, That Louis W. Suter and Clara M. Suter, his wife, of King County, State of Washington, for and in consideration of the sum of Forty (\$ 40⁰⁰/₁₀₀) Dollars, in hand paid, and other good and valuable considerations, hereby grant and convey to the City of Seattle, a municipal corporation, an easement for the construction, operation and maintenance of an electric transmission system consisting of Two (2) towers and the necessary wires, anchors, guys and other appurtenances over, along and across the following described real property, situated in King County, Washington, to-wit:

The South 30 rods of the Northeast quarter of Northwest quarter and North 10 rods of the Southeast quarter of Northwest quarter, Section 21, Township 25 North, Range 5 E. W.M.

As the same is shown upon blueprint hereto attached and made part hereof.
together with the right to remove trees that by falling might endanger the transmission system.

Dated this 4th day of April, 1927

NOTED
C. E. W.

(Signed)

Louis W. Suter
Clara M. Suter

250521-2-001

©

241252
45 - Verdict No. 90. That the just compensatio. to be paid to the owners, occupants and persons otherwise interested therein for the taking of a perpetual easement for a right-of-way over and across the following described real property in the County of King, State of Washington, to-wit:

West 25 feet of east 75 feet of south 30 rods of north-east quarter of northwest quarter, Section 21, Township 25 North, Range 5 East, W. M. ALSO west 25 feet of east 75 feet of north 10 rods of southeast quarter of north-west quarter of Section 21, Township 25 North, Range 5 East, W. M.;

for the construction, operation and maintenance of an electric transmission system, consisting of one (1) tower, approximately located at Engineer's Station 705-50, together with the necessary wires, anchors, guys and other appurtenances, together with the right of access there-to for said purposes, which the defendants King County, Louis W. Suter and Clara M. Suter, his wife, claim to own, or to be otherwise interested in, is the sum of Nine and 50/100 (\$9.50) Dollars.

This verdict is made upon the condition that the owners of the said property, and their successors and assigns, shall retain the right to go upon and across said above described property at any and all times and to use all of said land not occupied by petitioner's one (1) tower for the purpose of raising crops of any kind, animal husbandry, and all other agricultural and farming purposes whatsoever, and upon the condition that the petitioner shall use the said property only for the purpose of constructing, operating and maintaining an electric transmission system thereon, consisting of one (1) tower.

And upon the further condition that the petitioner has acquired no rights hereby to fence the land or to build any roadways, except such temporary way as may be necessary for construction purposes, and that any stumps within the easement boundary may be taken out as before, except where the blasting method is used, in which event the property owner shall give ten (10) days written notice to the petitioner herein, and the work is to be done under the supervision of a representative of the petitioner.

And upon the further condition that should the petitioner at any time in the course of its maintenance and operation of its transmission system, or if it shall in the construction of any of its lines, other than the first line to be constructed, damage or destroy any crop or crops then growing within said easement boundary, it shall reimburse the then owner of such crop or crops for the damage so caused.

250521-2-001

(D)

CONSIDERED, ORDERED, ADJUDGED and DECREED, as follows:

241252

97 - Verdict No. 1. That the just compensation to be paid to the owners, occupants and persons otherwise interested therein for the taking of a perpetual easement for a right-of-way over and across the following described real property in the County of King, State of Washington, to-wit:

East 75 feet of south 132 feet of north 297 feet of northeast quarter of southeast quarter of northwest quarter, Section 21, Township 25 North, Range 5 East, W. M.,

for the construction, operation and maintenance of an electric transmission system, the right-of-way being 75 feet on the west side of center line of survey, together with the necessary wires, anchors, guys and other appurtenances, together with the right of access thereto for said purposes, which the defendants King County and Marine National Bank, a corporation, claim to own, or to be otherwise interested in, is the sum of Twenty Dollars (\$20.00).

This verdict is made upon the condition that the owners of the said property, and their successors and assigns, shall retain the right to go upon and across said above described property at any and all times and to use all of said land for the purpose of raising crops of any kind, orcharding, animal husbandry, and all other agricultural and farming purposes whatsoever, and upon the condition that the petitioner shall use the said property only for the purpose of constructing, operating and maintaining an electric transmission system thereon.

and upon the further condition that the petitioner has acquired no rights hereby to fence the land or to build any roadways, except such temporary way as may be necessary for construction purposes, and that any stumps within the easement boundary may be taken out as before, except where the blasting method is used, in which event the property owner shall give ten (10) days' written notice

Copy

EASEMENT

Know All Men by these Presents, That William ~~Mc~~ Raine and Mary ~~Mc~~ Raine, his wife, ^{and} William McLeod Raine and Florence A. Raine, his wife, ^{by} William Raine, their attorney in fact, County, State of Washington, for and in consideration of the sum of

(\$ 40⁰⁰) Dollars, in hand paid, and other good and valuable considerations, hereby grant and

convey to the City of Seattle, a municipal corporation, an easement for the construction, operation and maintenance of an electric transmission system consisting of Two (2) towers and the necessary wires, anchors, guys and other appurtenances over, along and across the following described real property, situated in King County, Washington, to-wit:

The Southeast quarter of Northwest quarter (SE 1/4 NW 1/4) Section 21, Township 25 North, Range 5 E. N. M., less the north 297 feet thereof

as the same is shown upon blueprint hereto attached and made part hereof.

together with the right to remove trees that by falling might endanger the transmission system.

Dated this 2nd day of April, 1927

Signed William Raine
Mary Raine
William McLeod Raine
Florence A. Raine
By William Raine
their attorney in fact.

NOTED
C.E.W.

250521-2-001

F

EASEMENT

Know All Men by These Presents, That William Raine and Mary Raine, his wife and
of Denver, Colorado
William McLeod Raine and Florence A. Raine, his wife, of Bellevue, King
by William Raine, their attorney-in-fact
County, State of Washington, for and in consideration of the sum of One hundred & no/100

(\$ 100.00) Dollars, in hand paid, and other good and valuable considerations, hereby grant, convey

and warrant to the City of Seattle, a municipal corporation, a perpetual easement for the construction, operation and maintenance of an electric transmission system consisting of one (1) towers and the necessary

wires, anchors, guys and other appurtenances over, along and across the following described real property, situated in

King County, Washington, to-wit:

The Southeast Quarter of Northwest Quarter, less north 10 rods and less
south 132 feet of north 297 feet of northeast quarter, Section 21,
Township 25 North, Range 5 East, W.M. The easement limits extend 75
feet on the west side of center line of survey of said system as the
same is shown on blueprint hereto attached and made a part hereof. No
buildings to be upon said easement limits.

APPROVED AS TO FORM
A.C.VAN SOELEN, Corp. Counsel
By: R.B. McClinton

A portion of the rights herein conveyed is contained in that certain
easement heretofore executed by the grantors herein, bearing date
April 2, 1927, and recorded in Volume 1353 Page 57 of Deeds, records
of King County, Washington.

together with the right to remove trees that by falling might endanger the transmission system.

Dated this 16th day of July, 1931.

WILLIAM McLEOD RAINE
FLORENCE A. RAINE
By: WILLIAM RAINIE
their Attorney-in-fact

WILLIAM RAINE
MARY RAINE

250521-2-001

(G)

Copy

164

EASEMENT

Know All Men by these Presents, That L. A. Stebbins and Kate S. Stebbins, his wife, of Cook County, State of Illinois, for and in consideration of the sum of Twenty-five (\$ 25⁰⁰/₁₀₀) Dollars, in hand paid, and other good and valuable considerations, hereby grant and convey to the City of Seattle, a municipal corporation, an easement for the construction, operation and maintenance of an electric transmission system consisting of One (1) towers and the necessary wires, anchors, guys and other appurtenances over, along and across the following described real property, situated in King County, Washington, to-wit:

The North 25 acres of the northeast quarter of northwest quarter (N 25 acc of NE 4 NW 4) section 27, Township 25 North Range 5 E. W.M.

as the same is shown upon blue print hereto attached and made part hereof.
together with the right to remove trees that by falling might endanger the transmission system.

Dated this 11th day of April, 1927

(Signed) L. A. Stebbins
Kate S. Stebbins

NOTED
C.E.W.

250521-2-001

(A)

That the just compensation to be paid to the owners, occupants and persons otherwise interested therein for the taking of a perpetual easement for a right-of-way over and across the following described real property in the County of King, State of Washington, to-wit:

West 25 feet of east 75 feet of north 50 rods of north-east quarter of northwest quarter of Section 21, Township 25 North, Range 5 East, W. M.;

for the construction, operation and maintenance of an electric transmission system, together with the necessary wires, anchors, guys and other appurtenances, together with the right of access thereto for said purposes, which the defendants King County, L. A. Stebbins and Katie S. Stebbins, his wife, claim to own, or to be otherwise interested in, is the sum of Twelve (\$12.00) Dollars.

This verdict is made upon the condition that the owners of the said property, and their successors and assigns, shall retain the right to go upon and across said above described property at any and all times and to use all of said land for the purpose of raising crops of any kind, animal husbandry, and all other agricultural and farming purposes whatsoever, and upon the condition that the petitioner shall use the said property only for the purpose of constructing, operating and maintaining an electric transmission system thereon.

And upon the further condition that the petitioner has acquired no rights hereby to fence the land or to build any roadways, except such temporary way as may be necessary for construction purposes, and that any stumps within the easement boundary may be taken out as before, except where the blasting method is used, in which event the property owner shall give ten (10) days written notice to the petitioner herein, and the work is to be done under the supervision of a representative of the petitioner.

And upon the further condition that should the petitioner at any time in the course of its maintenance and operation of its transmission system, or if it shall in the construction of any of its lines, other than the first line to be constructed, damage or destroy any crop or crops then growing within said easement boundary, it shall reimburse the then owner of such crop or crops for the damage so caused.

250521-2-001

(B)

(PARTIAL) RELEASE OF EASEMENT

The City of Seattle, a municipal corporation of the State of Washington, hereby releases the following described real property situated in Seattle, King County Washington, to-wit:

165- "The South 30 rods of the Northeast quarter of the Northwest quarter, except the East 75 feet; the North 10 rods of the Southeast quarter of the Northwest quarter, except the East 75 feet; all in Section 21, Township 25 North, Range 5 East, W.M."

from the lien of that certain Easement dated April 4, 1927, and recorded in Volume 1353 of Deeds, Page 27, records of King County, Washington.

IN WITNESS WHEREOF the City of Seattle has caused these presents to be executed and its corporate seal affixed hereto by its Mayor and City Comptroller thereunto duly authorized pursuant to Ordinance No. 80516

this 4th day of January 1951

THE CITY OF SEATTLE

By: W. F. Devin
Mayor

ATTEST:

A. S. Holmes
City Comptroller & Ex-officio
City Clerk.

STATE OF WASHINGTON)
) SS.
COUNTY OF KING)

THIS IS TO CERTIFY that on this 4th day of January, 1951 before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared WILLIAM F. DEVIN and W. C. THOMAS, to me personally known to be the Mayor and City Comptroller, respectively, of THE CITY OF SEATTLE, the Municipal corporation that executed the foregoing instrument, and acknowledged to me that they signed and sealed the same as the free and voluntary act and deed of said municipal corporation, and on oath stated that they were authorized to execute said instrument and that the seal affixed is the seal of said municipal corporation.

WITNESS my hand and official seal the day and year in this certificate first above written.



C. G. Elandson
Notary Public in and for the State
of Washington, residing at Seattle.

250521-2-001

GEW:EC 11-19-51

ORDINANCE NO. 80516

AN ORDINANCE relating to the Department of Lighting; and releasing an easement over certain property in Section 21, Township 25 North Range 5 E. W. M.

WHEREAS, the City under date of April 4, 1927 accepted an easement for electric distribution line purposes over the property hereinafter described, which easement is recorded in Volume 1353 of Deeds, Page 27, records of King County; and

WHEREAS, the property hereinafter described has not and will not be used or useful to the City and the owner has requested and the Superintendent of Lighting has recommended (Comptroller's File No. 214332) that said easement be released as to said property; Now, Therefore,

BE IT ORDAINED BY THE CITY OF SEATTLE AS FOLLOWS:

Section 1. That the Mayor and City Comptroller are hereby authorized for and on behalf of The City of Seattle to execute and deliver a release substantially in the form of Exhibit "A" attached hereto of the following described real property in Seattle, King County, Washington, to-wit:

"The South 30 rods of the Northeast quarter of the Northwest quarter, except the East 75 feet; the North 10 rods of the Southeast quarter off the Northwest quarter, except the East 75 feet; all in Section 21, Township 25 North, Range 5 East, W.M."

from the lien of that certain easement dated April 4, 1927, and recorded in Volume 1353 of Deeds, Page 27, records of King County, Washington.

Section 2. (30 day ending.)

Approved: Nov. 28, 1951

cc: ERH
Cotton
Nelson
Spowart
Olsen, A.O.
Swensen
R/W
x-file

(copied 12-4-51 pjs)

250521-2-001

February 9, 1968
File: 68M49-2

419 10 10
Descriptions for Seattle City Light (Covers Sec. 21-25-5 only; descrip. for Sec. 16-25-5 missing)

1. All that portion of the West $\frac{1}{2}$ of Section 21, Township 25 North, Range 5 East, W.M. and of Block 72, Burke and Farrars Kirkland Addition, Division No. 23, as recorded in Volume 21 of Plats, Page 46, records of King County, Washington and of NE 28th Street (Maple Avenue), and of Lots 3, 18, 19 and Tracts A and B of Pikes Peak 2nd Addition as recorded in Volume 54 of Plats, Page 41, records of King County, Washington lying within 10 feet of the East line of said West $\frac{1}{2}$ of Section 21;

EXCEPT the West 2 feet thereof lying South of the easterly projection of the North line of Lot 7, Block 1, Pikes Peak Addition, as recorded in Volume 50 of Plats, Page 95, records of King County, Washington and lying North of the easterly projection of the South line of Lot 3, said Block 1;

TOGETHER WITH a temporary construction easement over and across that portion of said West $\frac{1}{2}$ of Section 21 and aforesaid Tracts, Lots, Blocks and Additions lying within 30 feet of the East line of said West $\frac{1}{2}$.

2. The West 10 feet of the East 20 feet of that portion of the NE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 21, Township 25 North, Range 5 East, W.M., lying North of the easterly projection of the North line of Lot 7, Block 1, Pikes Peak Addition, according to plat thereof recorded in Volume 50 of Plats, Page 95, records of King County, Washington.
3. The West 10 feet of Lots 10 and 11, Block 2, Cherry Crest Addition as recorded in Volume 56 of Plats, Page 4 and 5, records of King County, Washington;
TOGETHER WITH a construction easement over the East 20 feet of the West 30 feet of said Lots 10 and 11.
4. That portion of Tract A, Pikes Peak 2nd Addition, according to plat thereof recorded in Volume 54 of Plats, Page 41, records of King County, Washington, lying within the West 10 feet of the NW $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 21, Township 25 North, Range 5 East, W.M.;
TOGETHER WITH a temporary construction easement over that portion of said Tract A lying within the East 20 feet of the West 30 feet of said NW $\frac{1}{4}$ of NE $\frac{1}{4}$.
5. The West 15 feet of Lot 23, Pikes Peak 2nd Addition as recorded in Volume 54 of Plats, Page 41, records of King County, Washington.

February 9, 1968

Descriptions for Seattle City Light Cont'd

6. A temporary construction easement over the West 20 feet of Lots 5, 6, 8, and 9 of Block 2, Cherry Crest Addition as recorded in Volume 56 of Plats, Page 4 and 5, records of King County, Washington.
7. The East 20 feet of Lot 3, Pikes Peak 2nd Addition as recorded in Volume 54 of Plats, Page 41, records of King County, Washington;
TOGETHER WITH a construction easement over the West 20 feet of the East 40 feet of said Lot 3.

250516-4-001

APPENDIX C

HAZARD TREE RATING FORM

SCL HAZARD TREE ASSESSMENT FORM

Date: _____

Tree #: _____ DBH: _____ Height: _____

Species: _____ # of Trunks: _____

Hazard Level 1 (check all that apply)

- | | |
|--------------------------|-----------------------------------------------------------------------------------|
| <input type="checkbox"/> | Completely dead |
| <input type="checkbox"/> | Partially dead |
| <input type="checkbox"/> | Cracks or splits in the trunk or major branches |
| <input type="checkbox"/> | Leaning at >20 degree angle |
| <input type="checkbox"/> | Evidence of disease - loose or cracked bark |
| <input type="checkbox"/> | Evidence of disease-decay |
| <input type="checkbox"/> | Evidence of disease-cankers encompassing more than half the tree circumference |
| <input type="checkbox"/> | Evidence of disease-conks or mushroom brackets |
| <input type="checkbox"/> | Evidence of disease-infestation by ants, termites, or boring insects |
| <input type="checkbox"/> | Evidence of disease-ithin, yellowish (necrotic) foliage |
| <input type="checkbox"/> | Obviously weak or diseased root system |
| <input type="checkbox"/> | Apparently healthy Douglas-fir but within 15 ft of a tree with laminated root rot |

Hazard Level 2 (check all that apply)

- | | |
|--------------------------|------------------------------------------------------|
| <input type="checkbox"/> | Defective branches; |
| <input type="checkbox"/> | Cavities and holes; |
| <input type="checkbox"/> | Forks, crooks, spike branches, or multiple stems; or |
| <input type="checkbox"/> | Evidence of minor root system decay |

Comments: