



**City of Bellevue
Development Services Department
Land Use Staff Report**

Proposal Name: Vegetation Management for Eastside Transmission Line Corridor

Proposal Address: Seattle City Light Eastside Transmission Line Corridor across City

Proposal Description: Programmatic vegetation management and maintenance plan for transmission line corridor

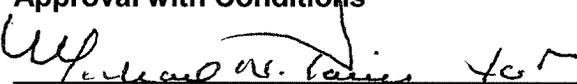
File Number: 10-102653 LO

Applicant: Margaret Duncan, Seattle City Light

Decisions Included: Critical Areas Land Use Permit (Process II. LUC 20.30P)

Planner: Kevin LeClair, Planner

State Environmental Policy Act Threshold Determination: Determination of Non-Significance issued by City of Seattle prior to application for Critical Areas Land Use Permit

Director's Decision: **Approval with Conditions**

Carol V. Helland, Land Use Director
Development Services Department

Application Date: January 5, 2010
Notice of Application Publication Date: February 11, 2010
Decision Publication Date: April 15, 2010
Project/SEPA Appeal Deadline: April 29, 2010

For information on how to appeal a proposal, visit Development Services Center at City Hall or call (425) 452-6800. Comments on State Environmental Policy Act (SEPA) Determinations can be made with or without appealing the proposal within the noted comment period for a SEPA Determination. Appeal of the Decision must be received in the City's Clerk's Office by 5 PM on the date noted for appeal of the decision.

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2. Vegetation Management and Maintenance Plan
3. DNS Completed by City of Seattle – In File

I. Proposal Description

The applicant is requesting a programmatic Critical Areas Land Use Permit for the management of vegetation along Seattle City Light's (SCL) Eastside Transmission Line through Bellevue in environmentally sensitive areas.

The proposed vegetation management plan includes the following activities:

- Hazard Tree Inspection and Management
- Right-of-Way Inspection and Clearance
- Emergency Inspection and Response

Each activity includes procedures for coordination and notification of the City of Bellevue, slash and debris treatment and disposal, mitigation and restoration for areas of vegetation removal, and

The proposal covers approximately 7.3 miles of the Eastside Transmission Line within Bellevue, east of Interstate-405. The Right-of-Way (ROW) is 150 feet wide and extends for 112 feet to the east and 38 feet to the west of the existing transmission line centerline. In total, the ROW covers approximately 132.7 acres.

SCL is required to manage vegetation within transmission line ROWs in a way that ensures the safe and reliable delivery of electricity. This means that trees must be prevented from growing into or contacting the lines to avoid power outages, fires, and other hazards.

The transmission line ROW crosses various regulated critical areas including streams, wetland and steep slopes. The Land Use Code (LUC) Critical Areas Overlay District specifies that modification of vegetation in a critical area or critical area buffer that is not considered routine maintenance may be allowed pursuant to an approved vegetation management plan meeting the requirements of LUC 20.25H.055.C.3.i.vi.

II. Site Description, Zoning, Land Use and Critical Areas

A. Site Description

The SCL Eastside Transmission Line ROW is 7.3 miles long and 150 feet wide. It covers an area of 132.7 acres. The Eastside Transmission Line ROW runs through areas characterized by commercial and residential developments, as well as three designated open space areas and seven public park properties.

The topography crossed by the Eastside Transmission Line is typical of western Washington lowlands, which consists of low ridges, rolling hills, and valleys. Elevations along the line are generally less than 300 feet above sea level. In northern Bellevue, the line crosses rolling hills between the southern border of Bridle Trails State Park and I-520. From I-520 south to Wilburton Hill Park the terrain is fairly flat. South of the park the line drops into the valley associated with Kelsey Creek, heads upslope, and crosses a long ridge crest between Kelsey Creek and I-90. South of I-90 the terrain is relatively level until the Coal Creek drainage. After spanning Coal Creek

the line climbs another slope and again runs along a ridge crest to the northern border of the City of Newcastle. A total of 2,049 lineal feet of the Eastside Line crosses critical area steep slopes.

Information from the National Resource Conservation Service indicates that nearly 50 percent of the Eastside Transmission Line ROW consists of gravelly sandy loams. The remainder consists of sandy loams, loamy fine sands, silt loams, mucks, and urban land.

The Eastside Transmission Line crosses four streams in Bellevue: The West Tributary of Kelsey Creek, Kelsey Creek, Wilburton tributary, and Coal Creek. Kelsey and Coal Creeks are salmon-bearing, Type F waters. The West Tributary of Kelsey Creek and Wilburton tributary are classified as Type N waters. The transmission line also crosses wetlands associated with Kelsey Creek and three others; there are approximately 3.2 acres of wetland in the ROW.

Vegetation in the Eastside Transmission Line ROW consists of a variety of small trees, shrubs, grasses, and forbs and includes both native and non-native species. Taller conifers, such as western red cedar and Douglas-fir, often occur at the outer edge of the east side of the ROW which is wider than the west side and can support larger trees without jeopardizing the line. In some places, such as parks and streetscapes, the ROW has been landscaped and includes a diversity of horticultural species. Areas left in a natural state generally support a mixture of native and non-native plants.

B. Zoning

The area under application crosses multiple zoning districts including R-1, Bel-Red (BR), Office (O), Professional Office (PO), R-15, R-3.5, R-4, R-5, R-10, R-30, Community Business (CB), and R-20.

C. Land Use Context

The Eastside Transmission Line ROW currently runs through areas characterized by commercial and residential developments, as well as three designated open space areas and seven parks.

In some cases, the ROW provides a linear corridor of “undeveloped” land comprised of trees, shrubs and grasses. At times, the corridor contains multi-use public or private trails that serve as non-motorized pedestrian and bicycle linkages. The ROW also runs parallel to many public rights-of-way where it allows for a wider, non-built roadside that can support vegetation.

D. Critical Areas Functions and Values

i. Streams and Riparian Areas

Healthy aquatic environments rely on a dynamic interaction between the stream and the adjacent riparian area. Riparian vegetation in floodplains and along stream banks provides a buffer to help mitigate the impacts of urbanization. Riparian areas support healthy stream conditions by retaining sediments, nutrients, pesticides, pathogens, and other pollutants that may be present in runoff.

Riparian vegetation reduces solar exposure and regulates high ambient air temperatures, slowing or preventing increases in water temperature.

The roots of riparian plants also hold soil and prevent erosion and sedimentation that may affect spawning success or other behaviors, such as feeding.

Both upland and wetland riparian areas reduce the effects of flood flows. Riparian areas and wetlands reduce and desynchronize peak crests and flow rates of floods. Vegetated, non-developed upland and wetland areas infiltrate floodflows, which in turn, are released to the stream as baseflow.

Stream buffers with non-native species may not perform the needed functions of stream buffers. In cases where the buffer is not well vegetated, it is necessary to either increase the buffer width or require that the standard buffer width be restored or revegetated.

ii. Wetlands

Wetlands provide important functions and values for both the human and biological environment—these functions include flood control, water quality improvement, and nutrient production. These “functions and values” to both the environment and the citizens of Bellevue depend on their size and location within a basin, as well as their diversity and quality. While Bellevue’s wetlands provide various beneficial functions, not all wetlands perform all functions, nor do they perform all functions equally well. However, the combined effect of functional processes of wetlands within basins provides benefits to both natural and human environments. For example, wetlands provide significant stormwater control, even if they are degraded and comprise only a small percentage of area within a basin.

iii. Geologic Hazard Areas

Geologic hazards pose a threat to the health and safety of citizens when commercial, residential, or industrial development is inappropriately sited in areas of significant hazard.

Steep slopes may serve several other functions and possess other values for the City and its residents. Several of Bellevue’s remaining large blocks of forest are located in steep slope areas, providing habitat for a variety of wildlife species and important linkages between habitat areas in the City. These steep slope areas also act as conduits for groundwater, which drains from hillsides to provide a water source for the City’s wetlands and stream systems. Vegetated steep slopes also provide a visual amenity in the City, providing a “green” backdrop for urbanized areas enhancing property values and buffering urban development.

iv. Habitat Associated with Species of Local Importance

Increases in human settlement density and associated intensification of land use have a profound and lasting effect on the natural environment and wildlife habitat.

Urban areas can support rich wildlife communities. In fact, species richness peaks for some groups, including songbirds, at an intermediate level of development. Protected areas alone cannot be depended on to conserve wildlife species. Impacts from catastrophic events, environmental changes, and evolutionary processes can be magnified when a taxonomic group or unit is confined to a specific area, and no one area or group of areas is likely to support the biological processes necessary to maintain biodiversity over a range of geographic scales. Habitat protection in urban areas is vital to the process of wildlife conservation in the Puget Sound region and the United States.

III. Consistency with Land Use Code Requirements:

A. Zoning District Dimensional Requirements:

The site is located in the multiple zoning districts. The proposal is for vegetation management to ensure required vegetation clearance for Seattle City Light's Eastside Transmission Line. There are no structures proposed to be constructed or demolished as part of the proposed vegetation management plan, therefore the dimensional requirements of the various zoning districts do not apply.

B. Critical Areas Requirements LUC 20.25H:

i. Performance Standards for Vegetation Management 20.25H.055.C.3.i

The Director may approve proposals for vegetation replacement in a critical area buffer, or within a geologic hazard critical area, pursuant to a Vegetation Management Plan.

A. The Vegetation Management Plan shall be prepared by a qualified professional.

The vegetation management plan was prepared by a qualified professional, Seattle City Light's Environmental Affairs Division.

B. The Vegetation Management Plan shall include (See Attachment 2 for complete copy of applicant's vegetation management plan):

1. A description of existing site conditions, including existing critical area functions and values; The applicant's vegetation management plan includes a thorough description of the existing site conditions and a review of the expected functions and values of the critical areas present within the project area.

2. A site history; The applicant has included a summary of the property history associated with the establishment and development of the Eastside Transmission Line from its establishment in the 1920's up through its ongoing operation.

3. A discussion of the plan objectives; The goals and objectives stated in the vegetation management plan include:

Goal 1. Promote the establishment and maintenance of vegetation within the transmission ROW that is compatible with the continued delivery of electricity in a safe, reliable, and economically effective manner.

Objective 1a: Manage vegetation in the transmission corridor in a way that promotes low-growing tree, shrub, and grass/forb communities appropriate to the surrounding area.

Objective 1b: Replace trees removed from the ROW with tree and shrub species that are compatible with the transmission line and land uses in the ROW.

Goal 2. Protect resources in identified Critical Areas, parks, and designated open space that are bisected by the ROW.

Objective 2a: Manage vegetation in a way that protects fish and wildlife habitat along streams and in wetlands and in associated buffers.

Objective 2b: Manage vegetation in a way that protects soil structure and stability on steep slopes.

Objective 2c: Minimize erosion and the establishment and spread of noxious weeds in site with ground disturbance resulting from vegetation management or transmission line maintenance.

Goal 3. Coordinate annual vegetation management activities along the ROW through Bellevue with the City of Bellevue, residents with property in and along the ROW, and state and federal agencies as needed.

Objective 3a: Meet with the City of Bellevue, Parks and Community Services Department, at the beginning of each year to discuss planned management schedule and activities along the ROW.

Objective 3b: Notify private land owners along the ROW prior to tree removal activities on their land.

Objective 3c: Develop and implement a process to review this Plan every four years, and revise and update as necessary.

Objective 3d: Comply with all applicable local, state, and federal environmental regulations.

4. A description of all sensitive features; The applicant utilized existing data resources including the City of Bellevue's geographic information system, along with Washington Department of Fish and Wildlife Priority Habitat and Species Database to catalog the presence of critical areas within and adjacent to the vegetation management area in the ROW.

5. Identification of soils, existing vegetation, and habitat associated with species of local importance present on the site; The applicant utilized existing data resources including the City of Bellevue's geographic information system, along with Washington Department of Fish and Wildlife Priority Habitat and Species Database to catalog the presence of critical areas within and adjacent to the vegetation management area.

6. Allowed work windows; The applicant has proposed a series of best management practices that include the timing of certain vegetation management practices to specifically avoid impacts to the sensitive resources within the vegetation management areas. This begins with the coordinated timing of routine vegetation inspections and tree hazard evaluations that precipitate anticipated vegetation management activities. The implementation of any vegetation management activities will be further conditioned under the subsequent clearing and grading permit, which will take into account presence of the localized critical areas and their functions and values at the time of the planned entry. The only exception is work covered under the emergency response portion of the vegetation management plan, which does not contain such time parameters. The vegetation removal and treatment BMPs are still applicable.

7. A clear delineation of the area within which clearing and other vegetation management practices are allowed under the plan; The applicant's vegetation management plan covers the entire Eastside Transmission Line Corridor in Bellevue. This corridor is approximately 7.3 miles long (north to south) and 150 feet wide.

8. Short- and long-term management prescriptions, including characterization of trees and vegetation to be removed, and restoration and revegetation plans with native species, including native species with a lower growth habit. Such restoration and revegetation plans shall demonstrate that the proposed Vegetation Management Plan will not significantly diminish the functions and values of the critical area or alter the forest and habitat characteristics of the site over time. The applicant has specified BMPs that strive to maintain, to the greatest extent feasible, the continue functions and values present with the vegetation management

area. When the removal of significant vegetation is unavoidable, the applicant has proposed mitigating measures that will be considered that will lessen the impact, such as the creation of wildlife snags or the replacement of native plants with alternative, lower-growing native plant species that will not conflict with the transmission lines.

ii. Performance Standards for Critical Areas:

A. Performance standards for landslide hazards and steep slopes LUC 20.25H.125

With the exception of the final performance standard in this subsection, the performance standards associated with landslide hazards and steep slopes do not apply to the application for vegetation management.

By definition, vegetation management prescribed by the applicant would be temporary in nature. The BMPs described by the applicant include measures to restore vegetation communities in landslide hazard and steep slope areas when their removal is required to maintain the safe clearance for the transmission lines.

B. Performance Standards for streams LUC 20.25H.080.A

With the exception of the final performance standard in this subsection, the performance standards associated with streams do not apply to the application for vegetation management.

The applicant has supplied BMPs that address the management of vegetation within the buffers of streams that intersect the vegetation management area. The applicants BMPs for stream buffers are consistent with those included within the City's Environmental Best Management Practices. The application of herbicides is specified as a management practice to limit the regrowth of undesired large woody vegetation in these areas, but their use is limited to the fish window.

C. Performance Standards for wetlands LUC 20.25H.100

With the exception of the final performance standard in this subsection, the performance standards associated with wetlands do not apply to the application for vegetation management.

The applicant has supplied BMPs that address the management of vegetation within the buffers of wetlands that intersect the vegetation management area. The applicants BMPs for wetland buffers are consistent with those included within the City's Environmental Best Management Practices. The application of herbicides is specified as a management practice to limit the regrowth of undesired large woody vegetation in these areas, but their use is limited to the fish window.

D. Performance Standards Habitat associated with Species of Local Importance LUC 20.25H.160

The SCL Eastside Transmission Line Corridor is assumed to contain habitat associated with species of local importance. It is understood that certain vegetation management activities may have a short term impact on species of local concern. The applicant has enumerated BMPs that will be employed to avoid impacts to such species and to mitigate for any impacts through the creation of wildlife snags, tall stumps and retention of large woody debris where practical. When significant vegetation must be removed for transmission line clearance in a critical area or stream critical area buffer, a restoration planting plan will be implemented to restore the area and the impacted functions.

IV. Public Notice and Comment

Application Date:	January 5, 2010
Public Notice (500 feet):	February 11, 2010
Minimum Comment Period:	February 25, 2010

The Notice of Application for this project was published in the City of Bellevue weekly permit bulletin on February 11, 2010. One comment letter was received from Karen Walter with the Muckleshoot Indian Tribe Fisheries Division.

The comment letter dealt with four issues: 1) placement of wood in streams, 2) invasive and noxious plant removal, 3) tree and shrub replacement, and 4) notification of the tribe when trees are removed in stream corridors.

The applicant prepared a written response to the commenter. SCL committed to retaining large woody debris in the stream riparian zones when the property owner is amenable to such a practice. When tree removal is required on publicly-owned property, large woody debris and snag creation will be the first option considered.

On the second item, although both the City of Bellevue and SCL agreed that it would be desirable to remove invasive in the corridor it was correctly stated that there is no regulatory requirement to do so unless areas of invasive are removed as a component of the power line clearance activities. In these cases, the disturbed areas will be restored with a native plant palette that is consistent with power line clearance.

The third item is addressed as a requirement that any significant vegetation that is removed within a critical area or critical area buffer must be replaced. It is understood, however, that the replacement trees and shrubs would be of a variety that will not exceed 35 feet in height at maturity.

SCL has agreed to provide the Muckleshoot Indian Tribe Fisheries Division with information on the number of trees removed within the ROW. This is not a

requirement of this permit, but SCL has agreed to do this at their election.

V. Summary of Technical Reviews

Clearing and Grading:

The Clearing and Grading Division of the Development Services Department has reviewed the proposed development for compliance with Clearing and Grading codes and standards. The Clearing and Grading staff found no issues with the proposed development. The applicant is required to obtain a clearing and grading permit for the implementation of the vegetation management activities.

VI. State Environmental Policy Act (SEPA)

The environmental review indicates no probability of significant adverse environmental impacts occurring as a result of the proposal. The Environmental Checklist submitted with the application adequately discloses expected environmental impacts associated with the project. The City codes and requirements, including the Clear and Grade Code, Utility Code, Land Use Code, Noise Ordinance, Building Code and other construction codes are expected to mitigate potential environmental impacts. Therefore, issuance of a Determination of Non-Significance (DNS) is the appropriate threshold determination under the State Environmental Policy Act (SEPA) requirements.

A. Earth and Water

A temporary erosion and sedimentation control plan as a component of a construction stormwater pollution prevention plan is required to be submitted for review and approval as part of the subsequent clearing and grading permit. Erosion and sediment control best management practices include the preservation of all vegetation that is not required to be removed for power line clearance and the use of the resulting tree debris as mulch on the ground. The applicant will also be required to submit information regarding the use of pesticides, insecticides, and fertilizers to avoid impacts to water resources. See Section X for a related condition of approval.

B. Animals

The vegetation management area is a linear corridor spanning 7.3 miles from north to south across the city. It provides a vital wildlife linkage function, by allowing the coordinated and proactive management of vegetation along its length it preserves this corridor as a viable habitat resource linking larger habitat blocks that contain quality habitat for birds and mammals. The management of vegetation along the Eastside Transmission Line corridor may have minimal short term impacts to certain sensitive species, but the management of the vegetation proposed in the Vegetation Management Plan will allow for fewer large-scale management entries with heavy impacts as opposed to more frequent small-scale entries that have modest impacts

which can easily be mitigated for.

C. Plants

Mitigation for temporary disturbance will be approved pursuant to an approved clearing and grading permit. The applicant will be required to install restoration plantings within critical areas and critical area buffers when it is determined that significant vegetation must be removed to keep the transmission lines clear. See Section X for related conditions of approval.

D. Noise

The Eastside Transmission Line ROW is adjacent to single-family residences whose residents are most sensitive to disturbance from noise during evening, late night and weekend hours when they are likely to be at home. The ROW also runs past commercial properties. In both cases, construction noise will be limited by the City's Noise Ordinance (Chapter 9.18 BCC) which regulates construction hours and noise levels. See Section X for a related condition of approval.

VII. Changes to proposal as a result of City review

No substantial changes were made to the applicant's proposal as a result of City review. The vegetation management plan was revised to include a public notification sign that could be used on public properties when vegetation work is to occur where public access may be temporarily disrupted. The plan was also modified to include a standard detail for the creation of wildlife snags to illustrate what is intended in these situations. Finally, management plan was revised to provide additional clarity around roles and responsibilities relative to the management of vegetation under the transmission lines within the developed portion of Wilburton Hill Park.

VIII. Decision Criteria

A. Critical Areas Land Use Permit Decision Criteria 20.30P

The Director may approve or approve with modifications an application for a critical areas land use permit if:

1. The proposal obtains all other permits required by the Land Use Code;

Finding: The proposal is required to obtain a Clearing and Grading Permit. At the time of this writing the permit has been applied for and will be approved with the conditions enumerated in Section X of this report.

2. The proposal utilizes to the maximum extent possible the best available construction, design and development techniques which result in the least impact on the critical area and critical area buffer;

Finding: The applicant has supplied a Vegetation Management and Maintenance

Plan that describes SCL's regulatory requirements relative to power line vegetation clearance and reflects the best available techniques for vegetation management in electricity transmission corridors.

3. The proposal incorporates the performance standards of Part 20.25H to the maximum extent applicable, and ;

Finding: In the applicant's Vegetation Management and Maintenance Plan, the applicant has satisfactorily addressed all of the applicable performance standards for vegetation management within critical areas and critical area buffers. A discussion of this compliance is included in Section III of this report.

4. The proposal will be served by adequate public facilities including street, fire protection, and utilities; and;

Finding: The vegetation management area is currently served by adequate public facilities. Nothing in this proposal will change the need for public services

5. The proposal includes a mitigation or restoration plan consistent with the requirements of LUC Section 20.25H.210; and

Finding: The applicant has provided a programmatic restoration plan that will be implemented when significant vegetation is removed from critical area and critical area buffers. The implementation will be reviewed and inspected under the subsequent clearing and grading permit.

6. The proposal complies with other applicable requirements of this code.

Finding: As discussed in Section IV & V of this report, the proposal complies with all other applicable requirements of the Land Use Code.

IX. Conclusion and Decision

After conducting the various administrative reviews associated with this proposal, including Land Use Code consistency, SEPA, City Code and Standard compliance reviews, the Director of Planning and Community Development does hereby **approve with conditions** the proposal for vegetation management and maintenance within the critical areas and critical area buffers of the Seattle City Light Eastside Transmission Line Right-of-Way.

Note- Expiration of Approval: In special consideration of the extended time required to assess and management vegetation and in accordance with LUC 20.30P.150 this Critical Areas Land Use Permit automatically expires and is void within four (4) years of the effective date of the approval. The subsequent Clearing and Grading Permit shall also have the same expiration date in accordance with Bellevue City Code (BCC)

23.76.

X. Conditions of Approval

The applicant shall comply with all applicable Bellevue City Codes and Ordinances including but not limited to:

<u>Applicable Ordinances</u>	<u>Contact Person</u>
Clearing and Grading Code- BCC 23.76	Janney Gwo, 425-452-6190
Land Use Code- BCC 20.25H	Kevin LeClair, 425-452-2928
Noise Control- BCC 9.18	Kevin LeClair, 425-452-2928

The following conditions are imposed under the Bellevue City Code or SEPA authority referenced:

1. Notification and Coordination: As a component of the Clearing and Grading Permit, and to ensure the goals and objectives of the Plan are being met, along with all applicable codes and regulations complied with, SCL's Manager of Energy Delivery Support Services will arrange an annual coordination (preconstruction inspection) following SCL's annual hazard tree inspection and/or vegetation clearance inspections. Seattle City Light representatives at this meeting shall include, but not be limited to, the Manager of Energy Delivery Support Services, or his or her designee, an Environmental Affairs Division staff member and a Vegetation Management Crew Chief. City of Bellevue representatives at this meeting shall include, but be limited to, a Land Use Planner, Natural Resource Manager or his or her designee, Grounds Division Manager or his or her designee and a Clearing and Grading Inspector.

Authority: Land Use Code 20.30P
Reviewer: Kevin LeClair, Land Use

2. Restoration for Areas of Temporary Disturbance: A restoration plan for all areas of temporary disturbance is required to be submitted for review and approval by the City of Bellevue prior to the issuance of the Clearing and Grading Permit. The plan shall include documentation of existing site conditions and shall identify the restoration measures to return the site to its existing conditions per LUC 20.25H.220.H.

Authority: Land Use Code 20.25H.220.H
Reviewer: Kevin LeClair, Land Use

3. Rainy Season restrictions: Due to the proximity to streams, wetlands and steep slopes, no clearing and grading activity may occur during the rainy season, which is defined as November 1 through April 30 without written authorization of the Development Services Department. Should approval be granted for work during the

rainy season, increased erosion and sedimentation measures, representing the best available technology must be implemented prior to beginning or resuming site work.

Authority: Bellevue City Code 23.76.093.A,
Reviewer: Savina Uzunow, Clearing and Grading

4. Pesticides, Insecticides, and Fertilizers: The applicant must submit as part of the required Clearing and Grading Permit information regarding the use of pesticides, insecticides, and fertilizers in accordance with the City of Bellevue's "Environmental Best Management Practices".

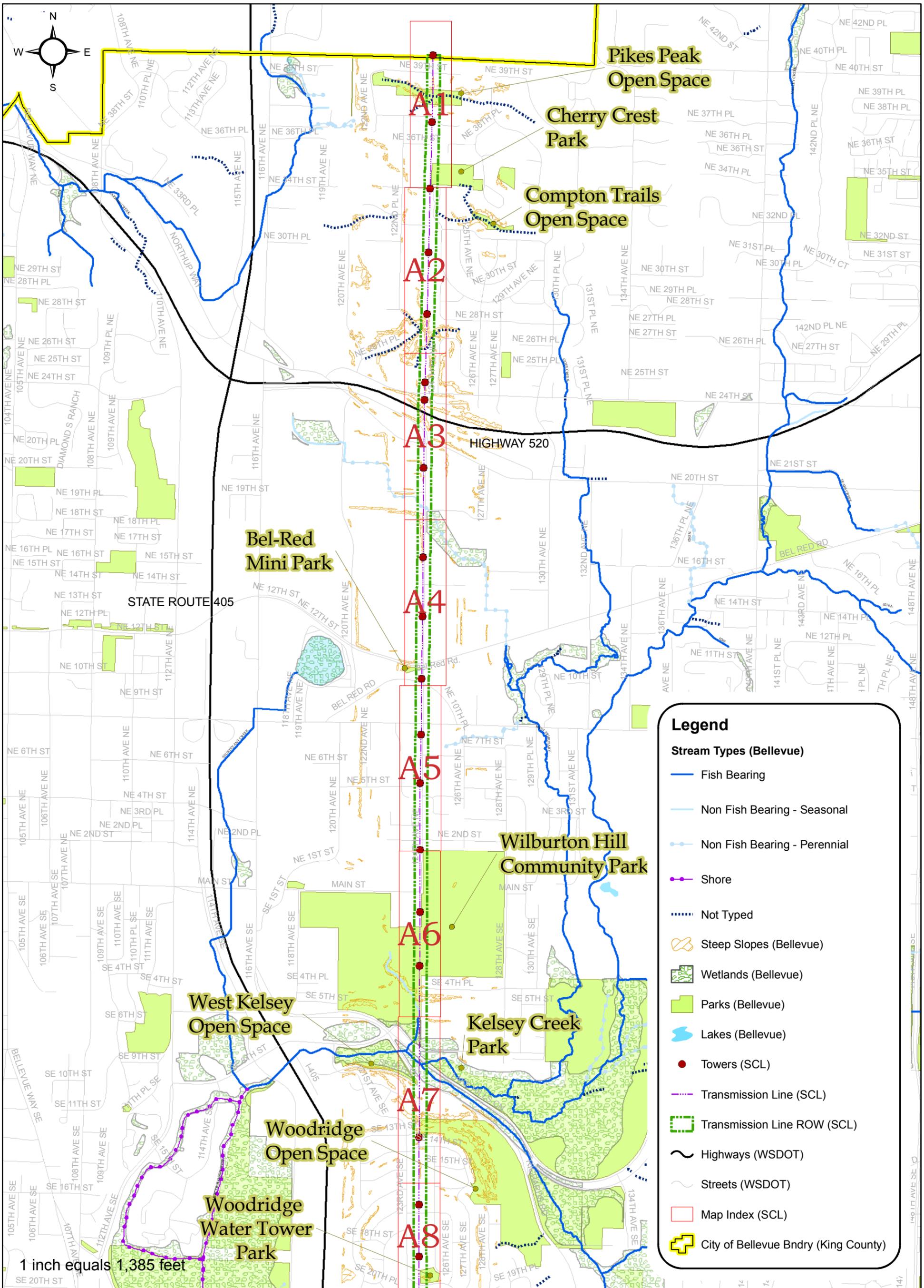
Authority: Land Use Code 20.25H.220.H
Reviewer: Planner, Land Use

5. Noise Control: Noise related to construction is exempt from the provisions of BCC 9.18 between the hours of 7 am to 6 pm Monday through Friday and 9 am to 6 pm on Saturdays, except for Federal holidays and as further defined by the Bellevue City Code. Noise emanating from construction is prohibited on Sundays or legal holidays unless expanded hours of operation are specifically authorized in advance. Requests for construction hour extension must be done in advance with submittal of a construction noise expanded exempt hours permit.

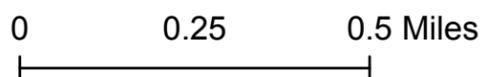
Authority: Bellevue City Code 9.18
Reviewer: Planner, Land Use



Map Index - Seattle City Light Transmission Line (within City of Bellevue)



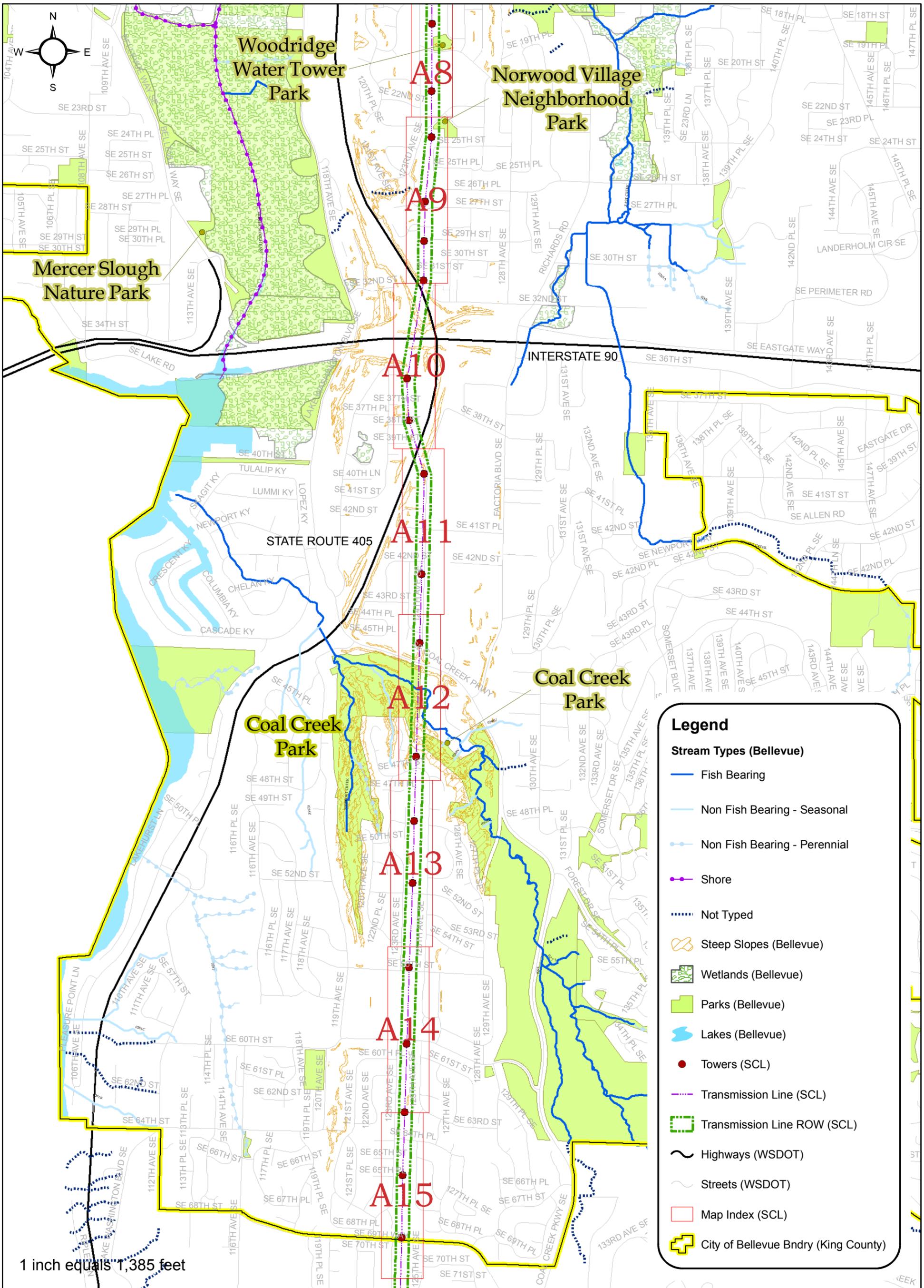
1 inch equals 1,385 feet



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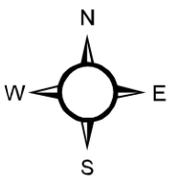
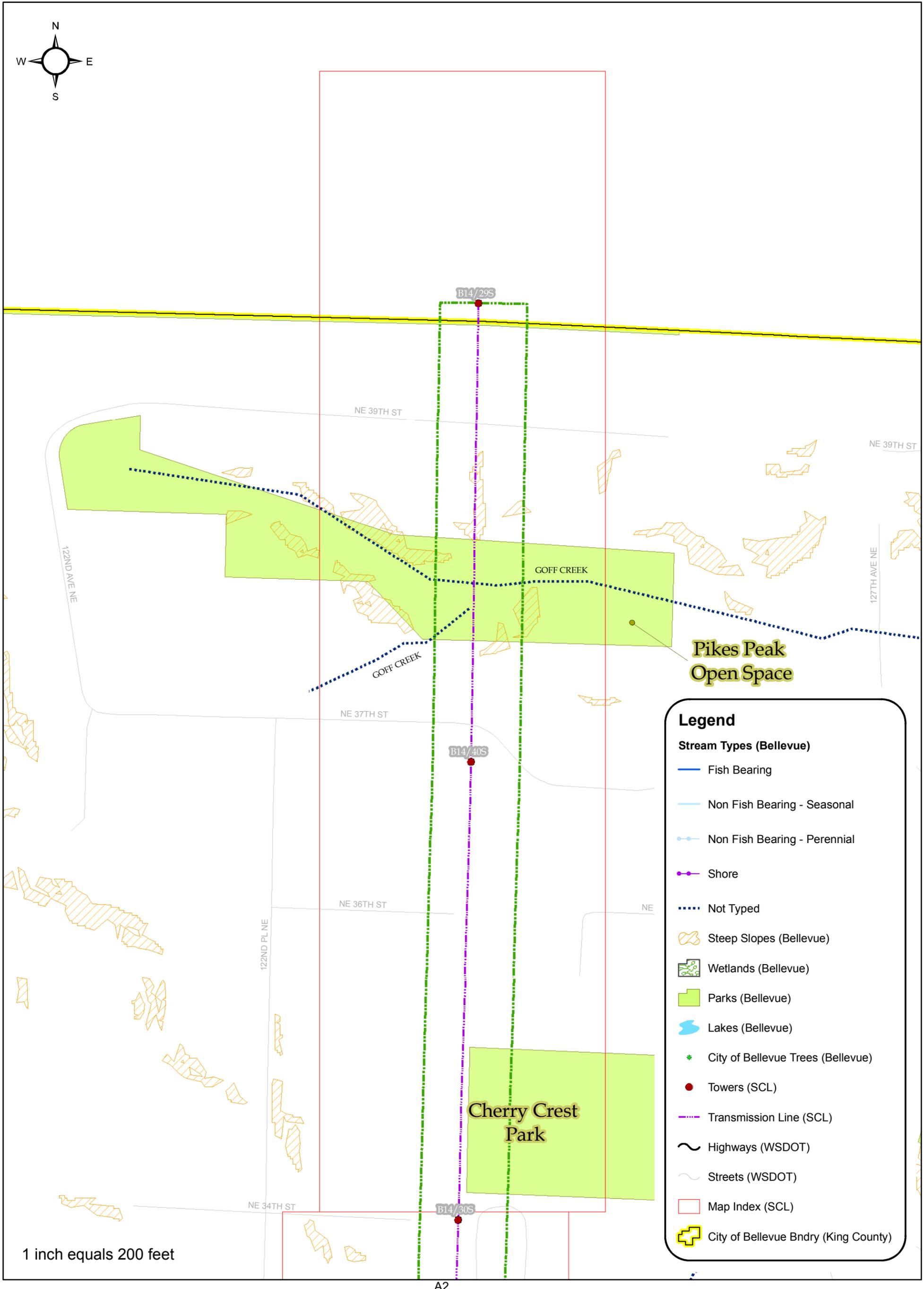


Map Index - Seattle City Light Transmission Line (within City of Bellevue)





Seattle City Light Transmission Line (within City of Bellevue) - Environmental Data



Legend

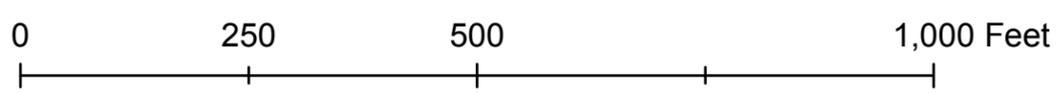
Stream Types (Bellevue)

- Fish Bearing
- Non Fish Bearing - Seasonal
- Non Fish Bearing - Perennial
- Shore
- Not Typed

Other Features

- Steep Slopes (Bellevue)
- Wetlands (Bellevue)
- Parks (Bellevue)
- Lakes (Bellevue)
- City of Bellevue Trees (Bellevue)
- Towers (SCL)
- Transmission Line (SCL)
- Highways (WSDOT)
- Streets (WSDOT)
- Map Index (SCL)
- City of Bellevue Bndry (King County)

1 inch equals 200 feet



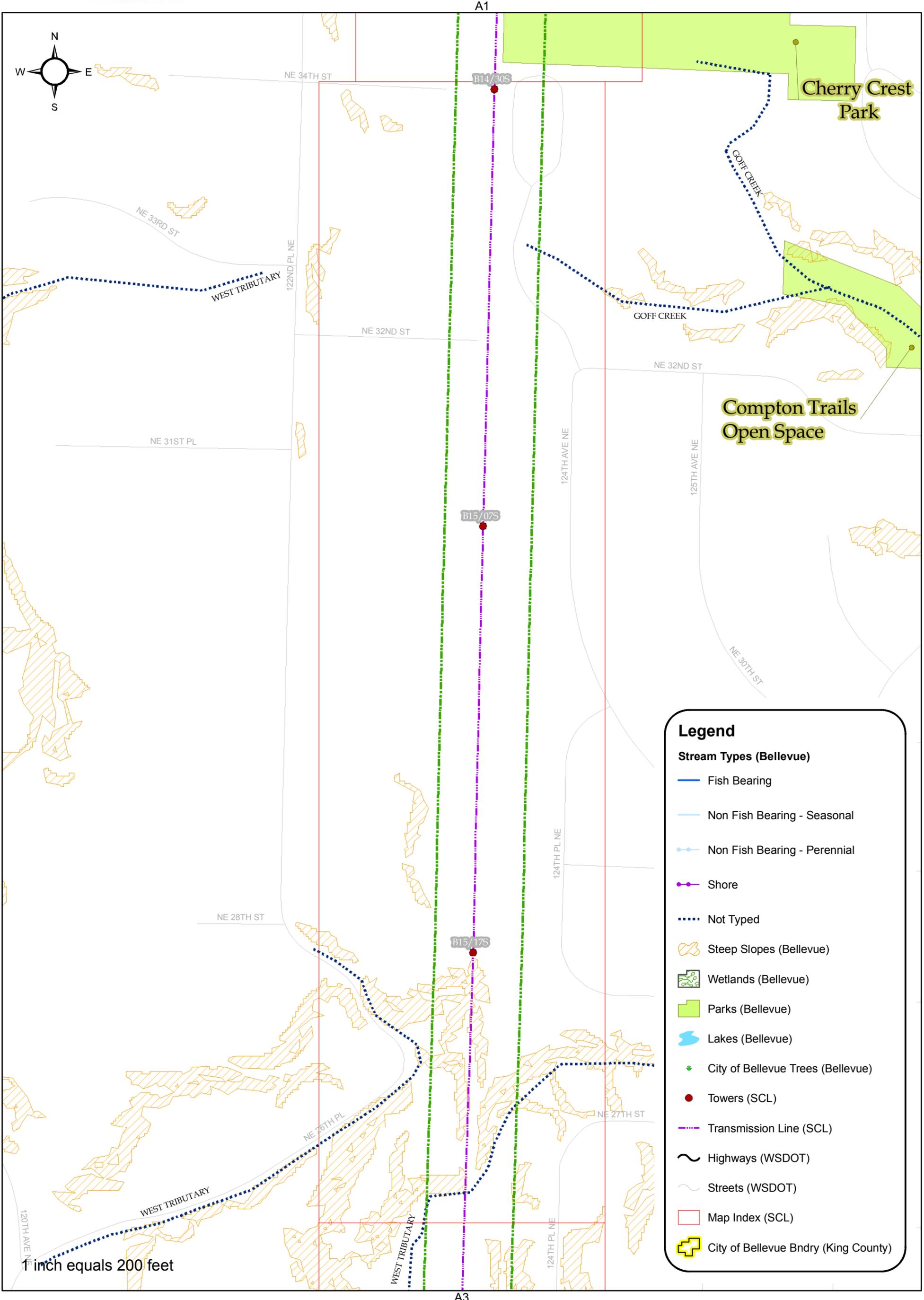
Map Index Number **A1**

Created 03/30/2009 by Seattle City Light, Environmental Affairs Division. No warranty is made to the accuracy, reliability, or completeness of these data.

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Seattle City Light Transmission Line (within City of Bellevue) - Environmental Data



Legend

Stream Types (Bellevue)

- Fish Bearing
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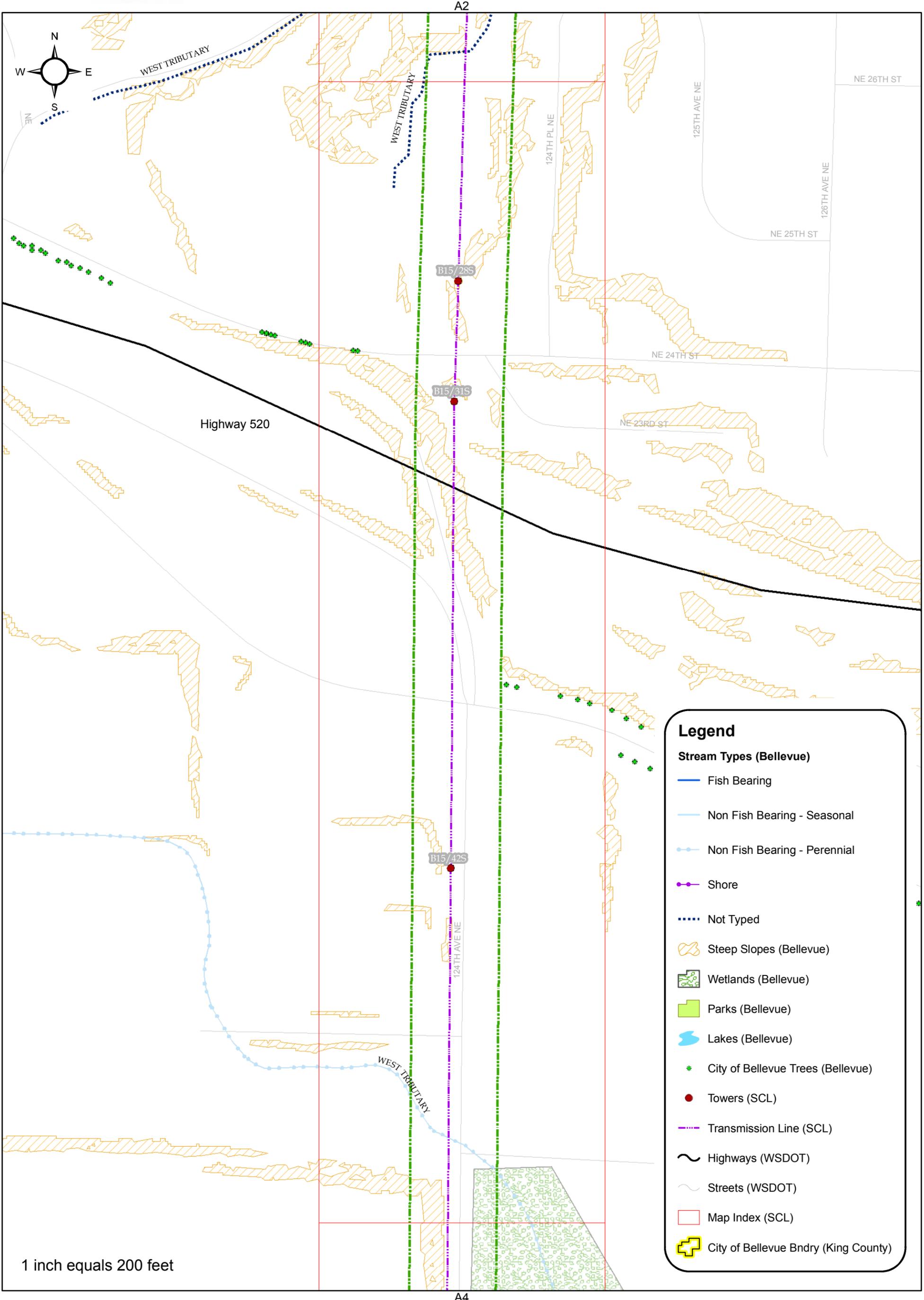
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- Steep Slopes (Bellevue)
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- City of Bellevue Bndry (King County)

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Seattle City Light Transmission Line (within City of Bellevue) - Environmental Data



1 inch equals 200 feet

Legend

Stream Types (Bellevue)

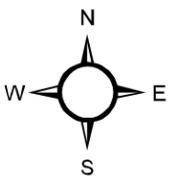
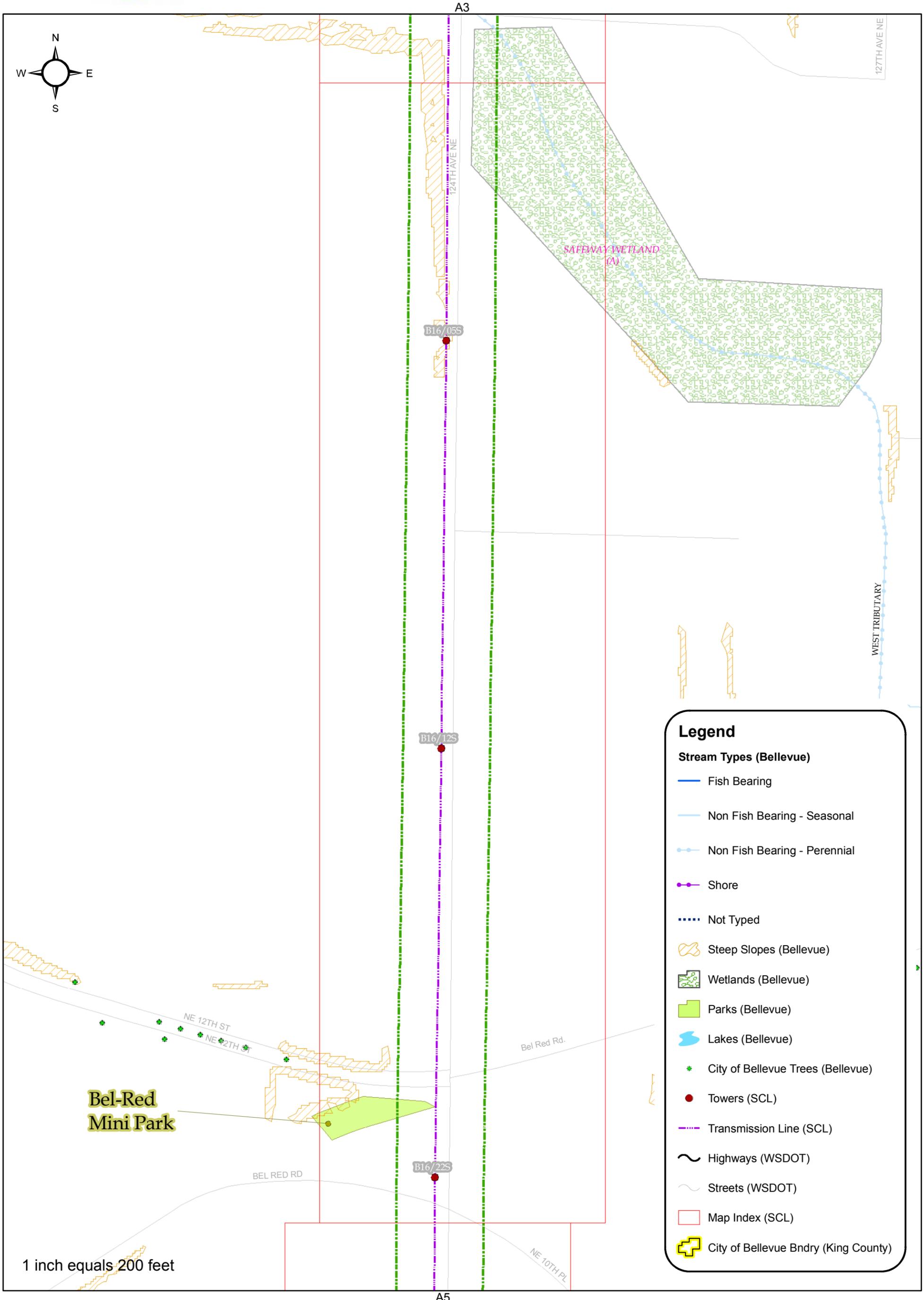
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- Shore
- Not Typed

Other Features:

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Seattle City Light Transmission Line (within City of Bellevue) - Environmental Data



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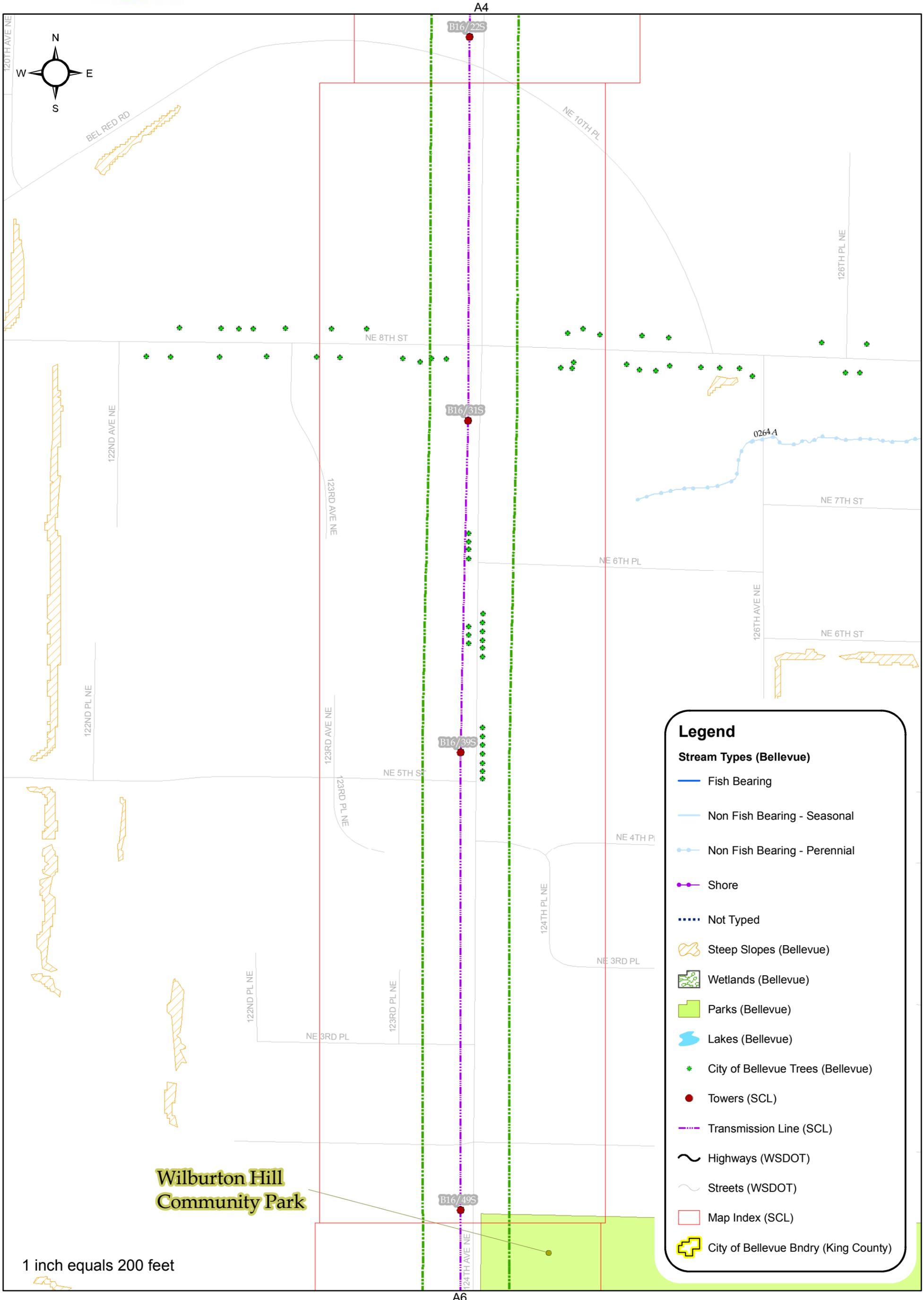
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Other Features:

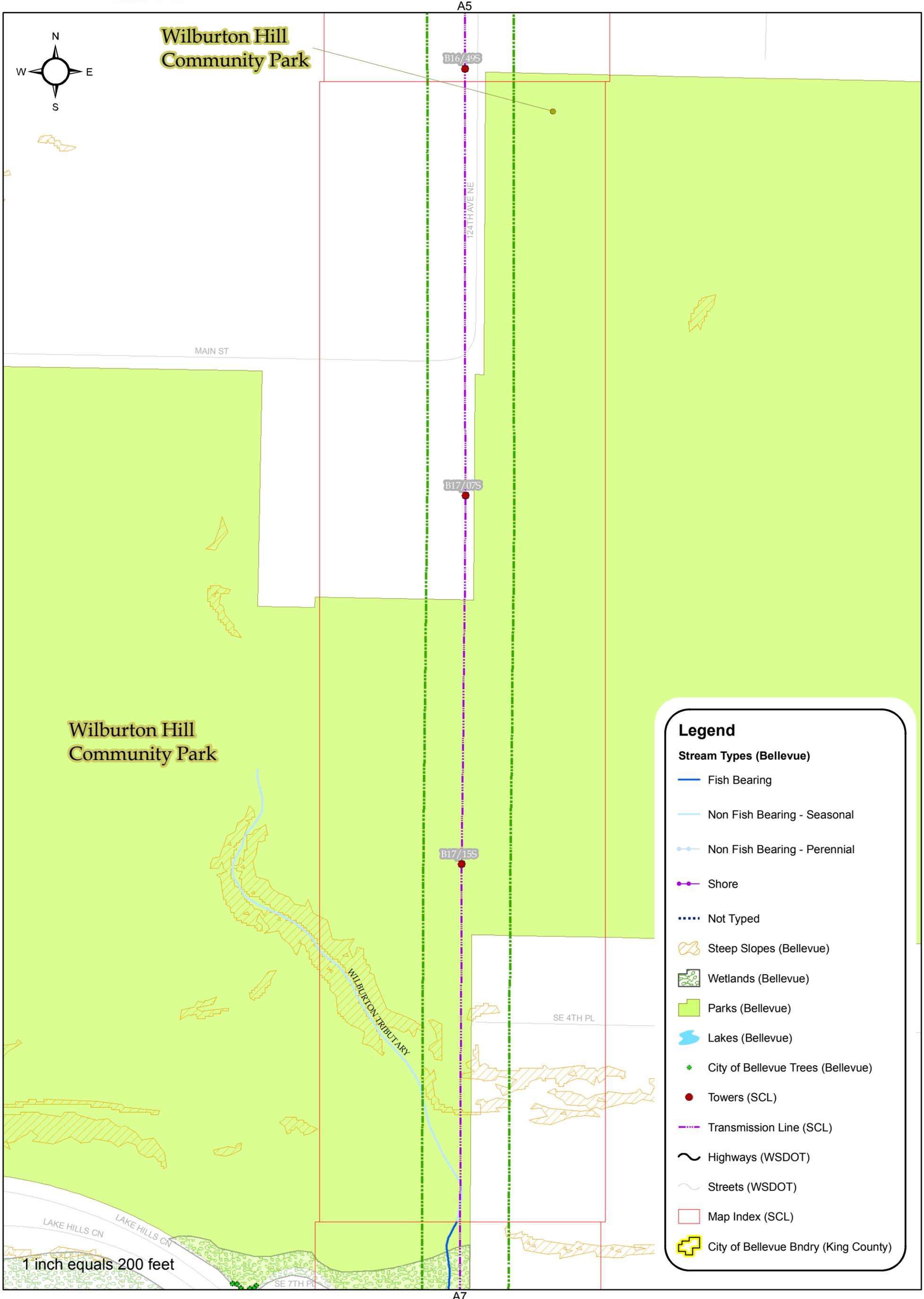
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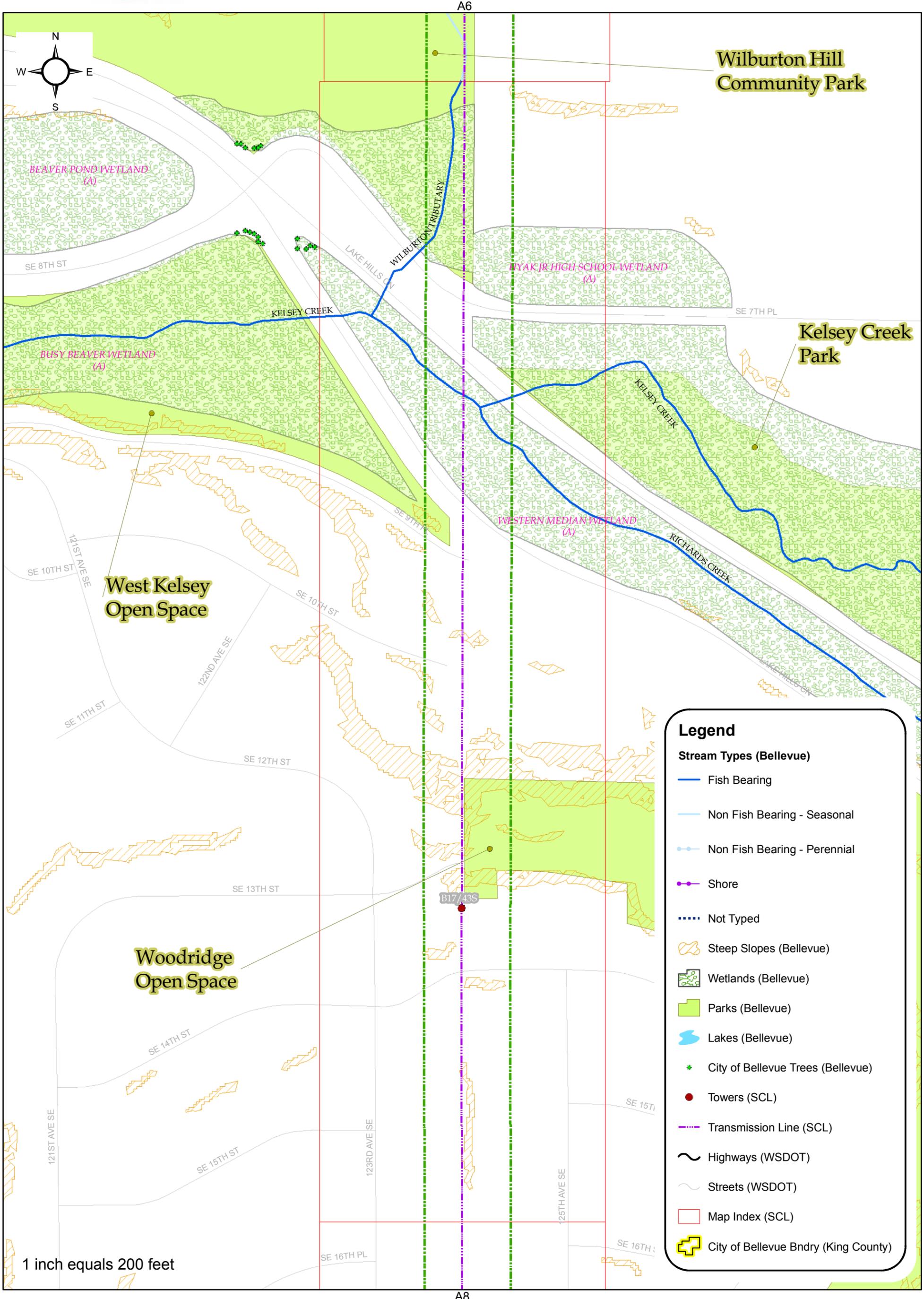
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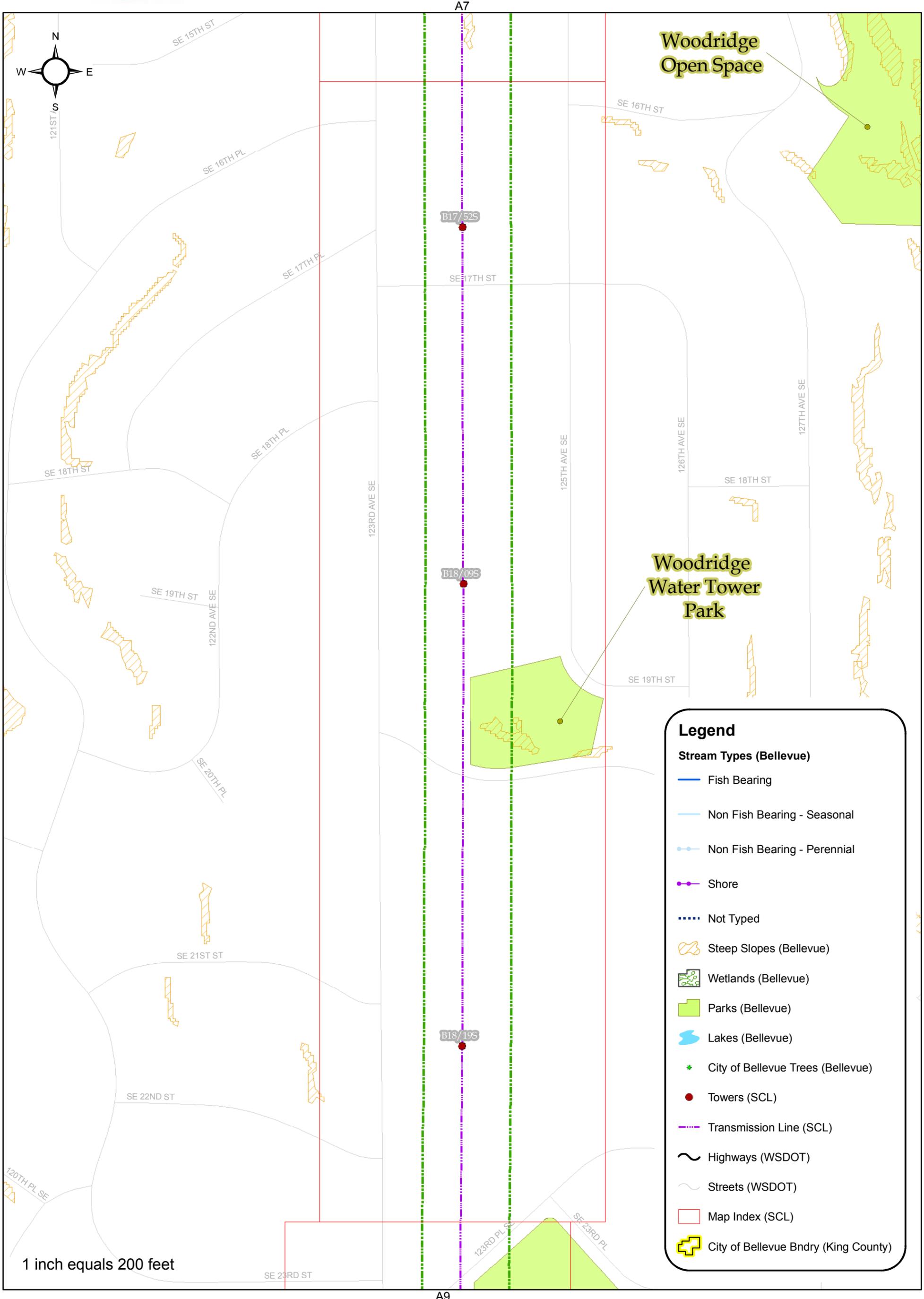
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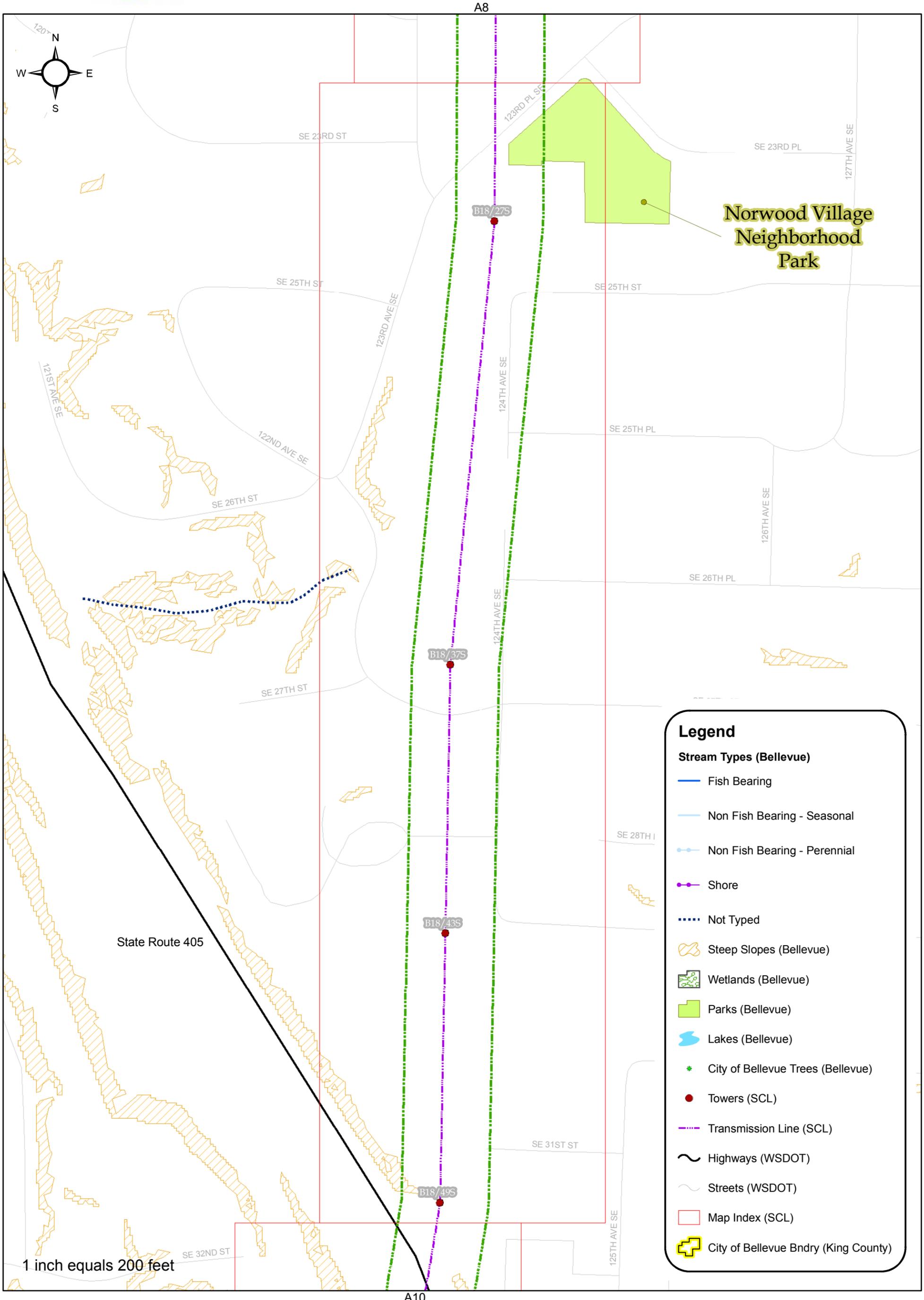
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Seattle City Light Transmission Line (within City of Bellevue) - Environmental Data



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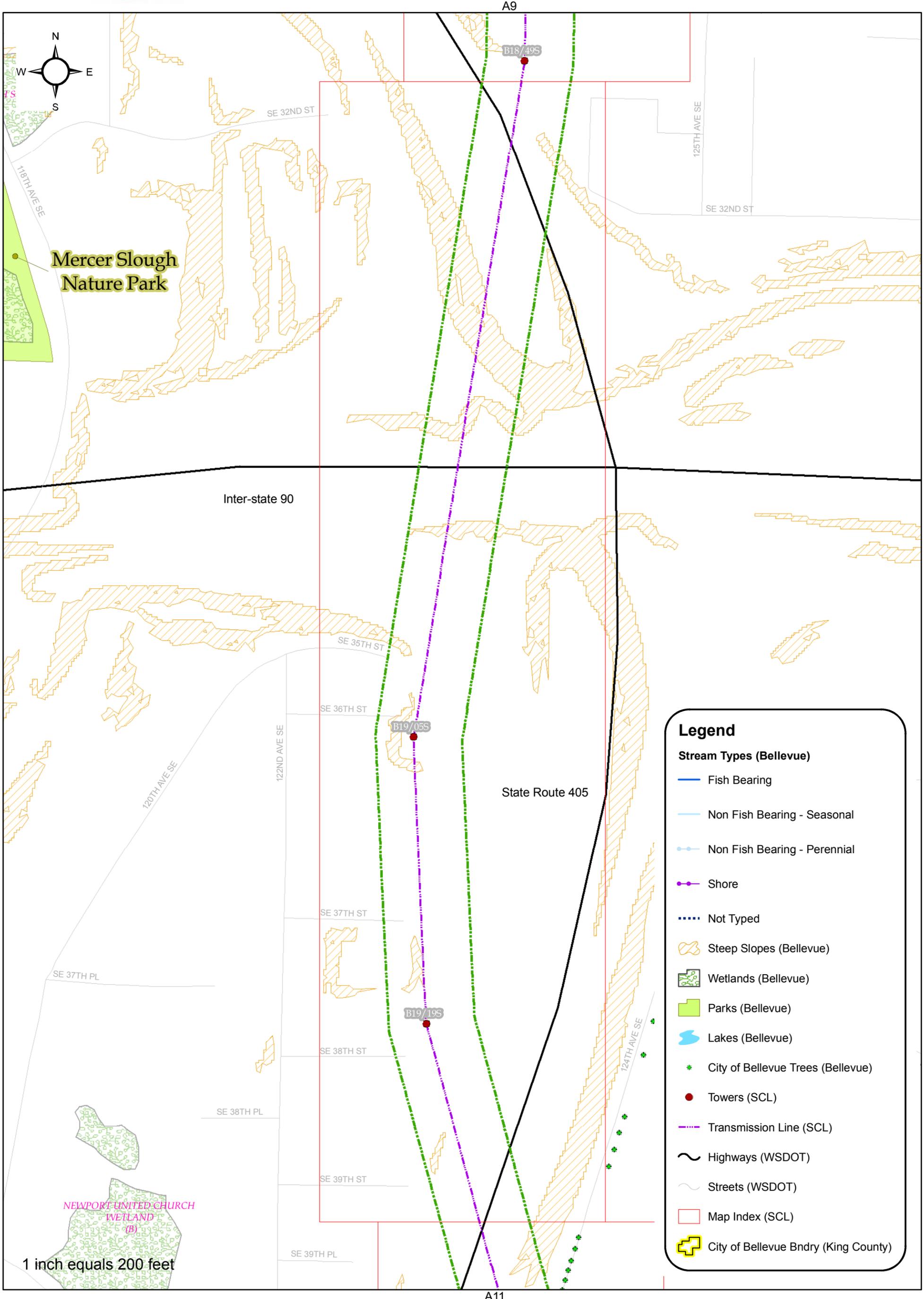
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Seattle City Light Transmission Line (within City of Bellevue) - Environmental Data



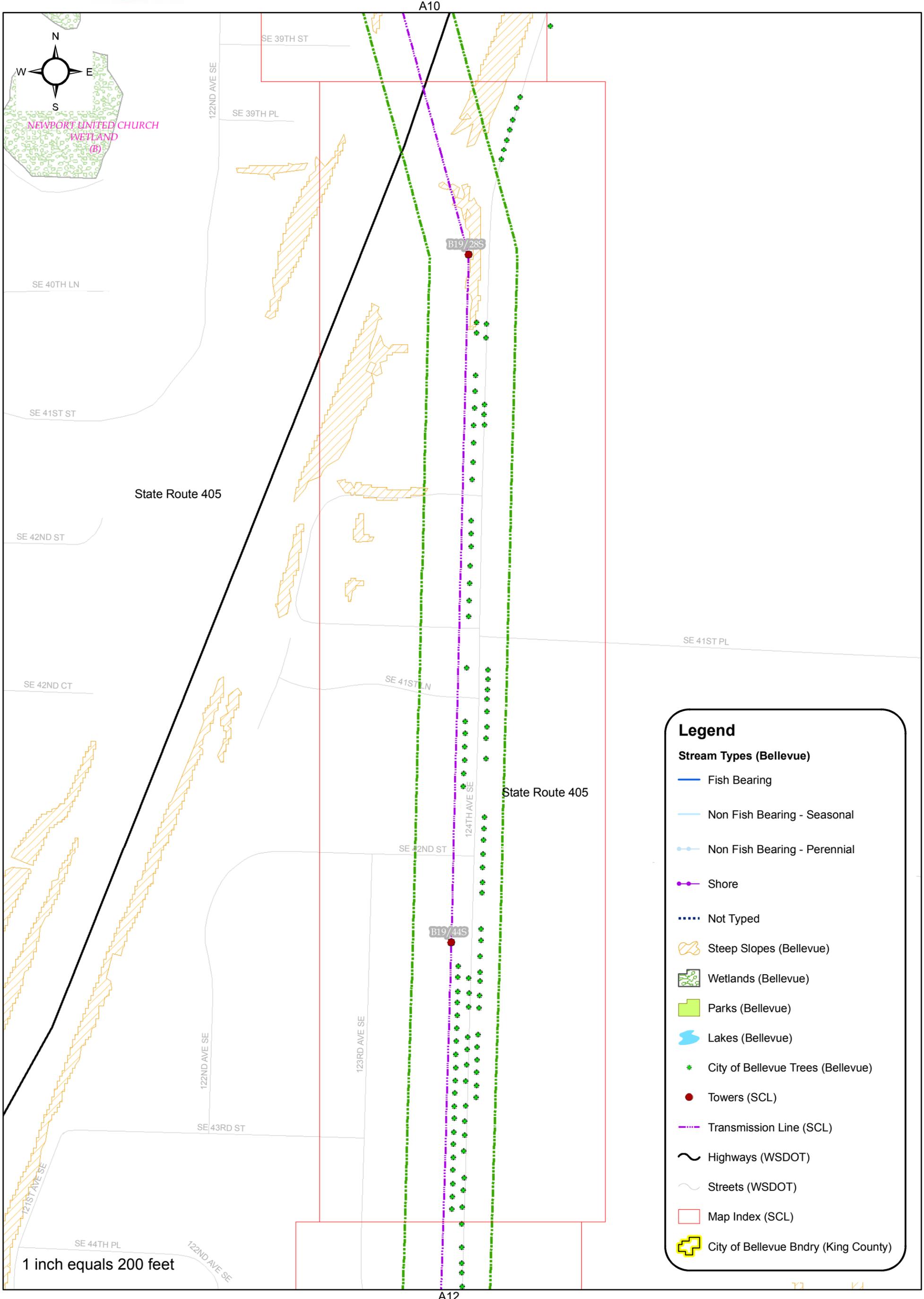
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Map Index Number **A10**



Seattle City Light Transmission Line (within City of Bellevue) - Environmental Data



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Steep Slopes (Bellevue)

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Towers (SCL)

Transmission Line (SCL)

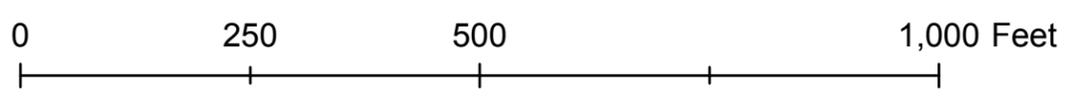
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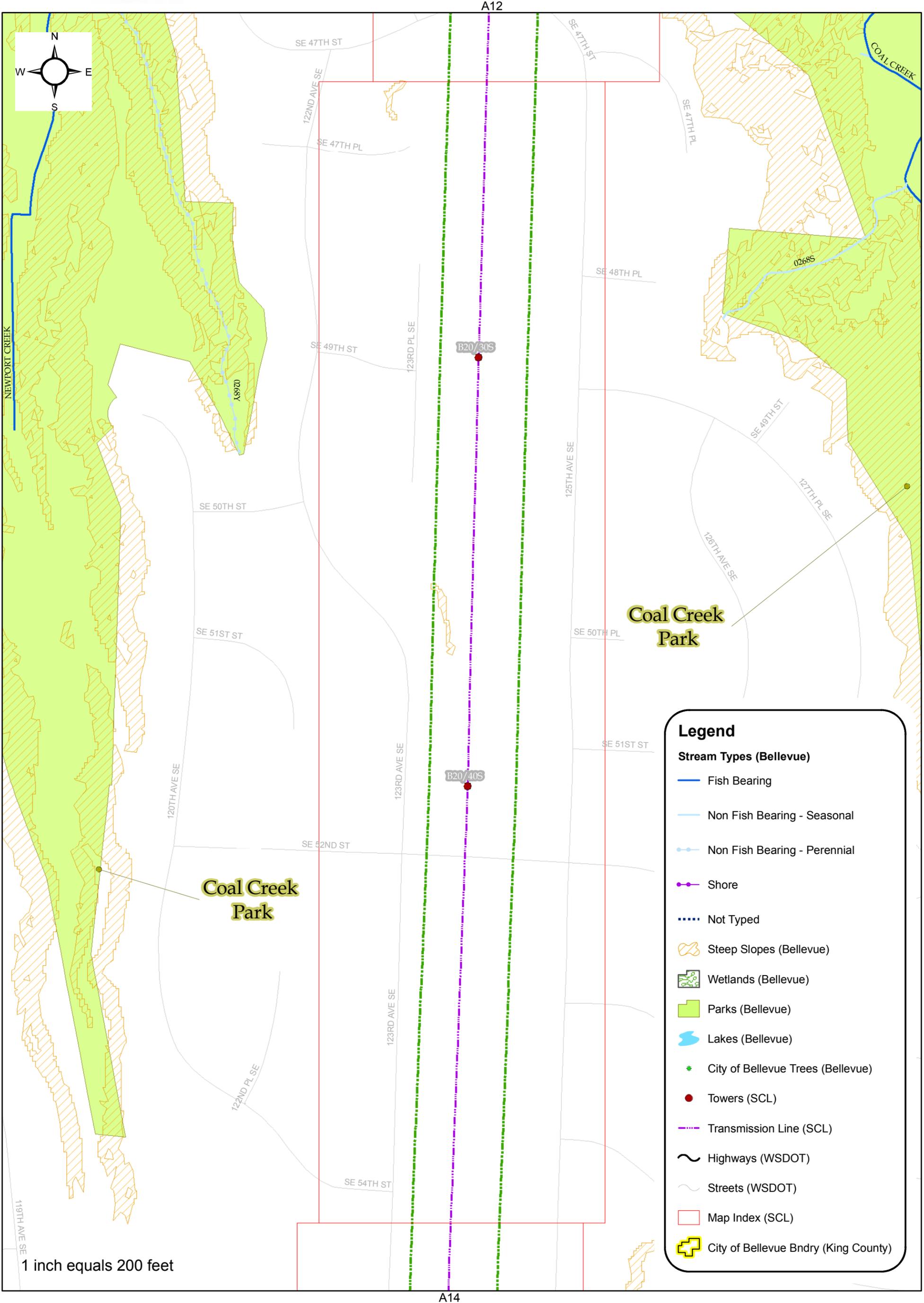


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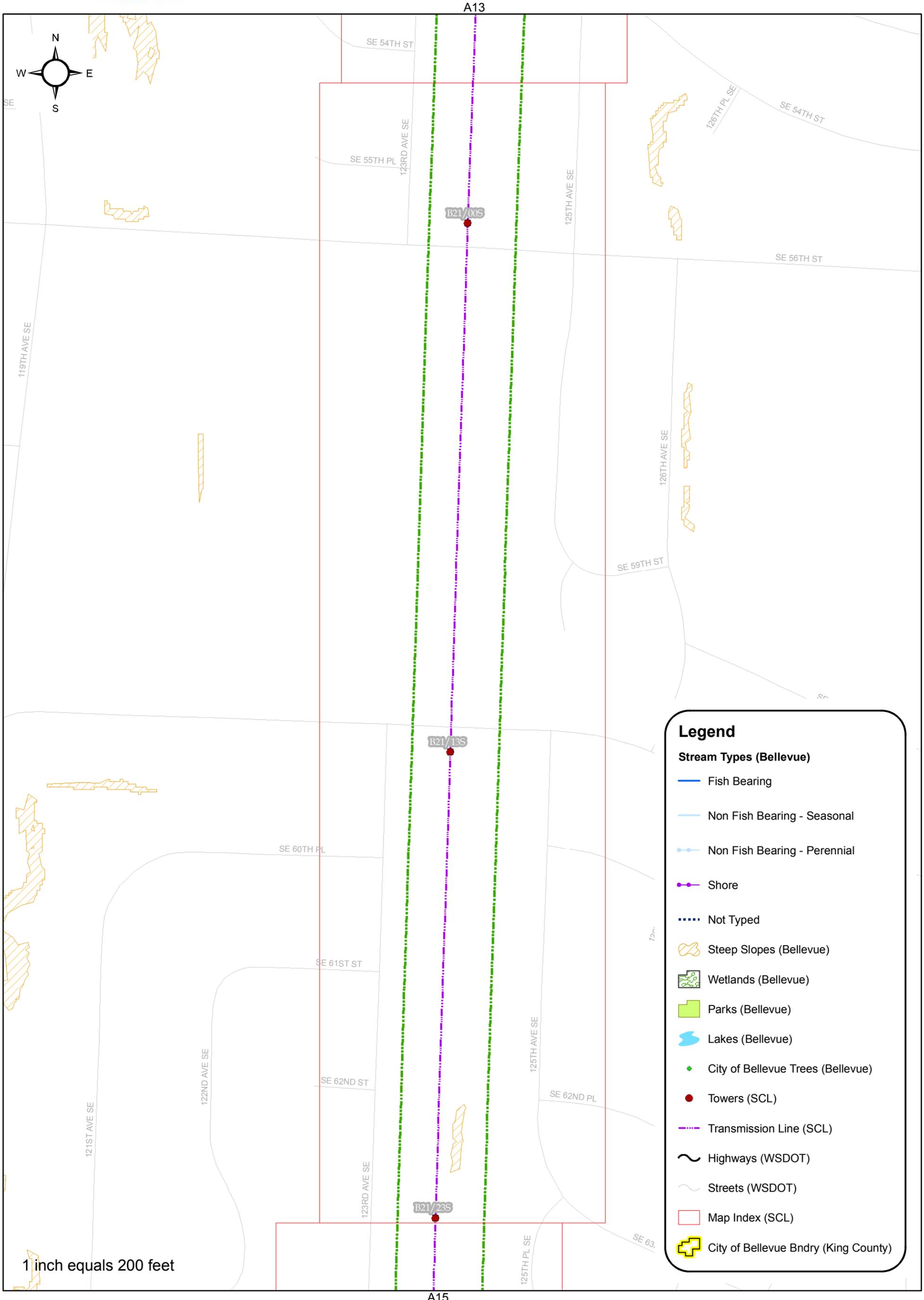


Seattle City Light Transmission Line (within City of Bellevue) - Environmental Data





Seattle City Light Transmission Line (within City of Bellevue) - Environmental Data



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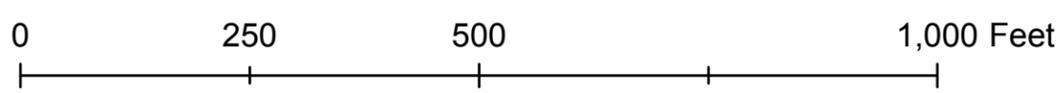
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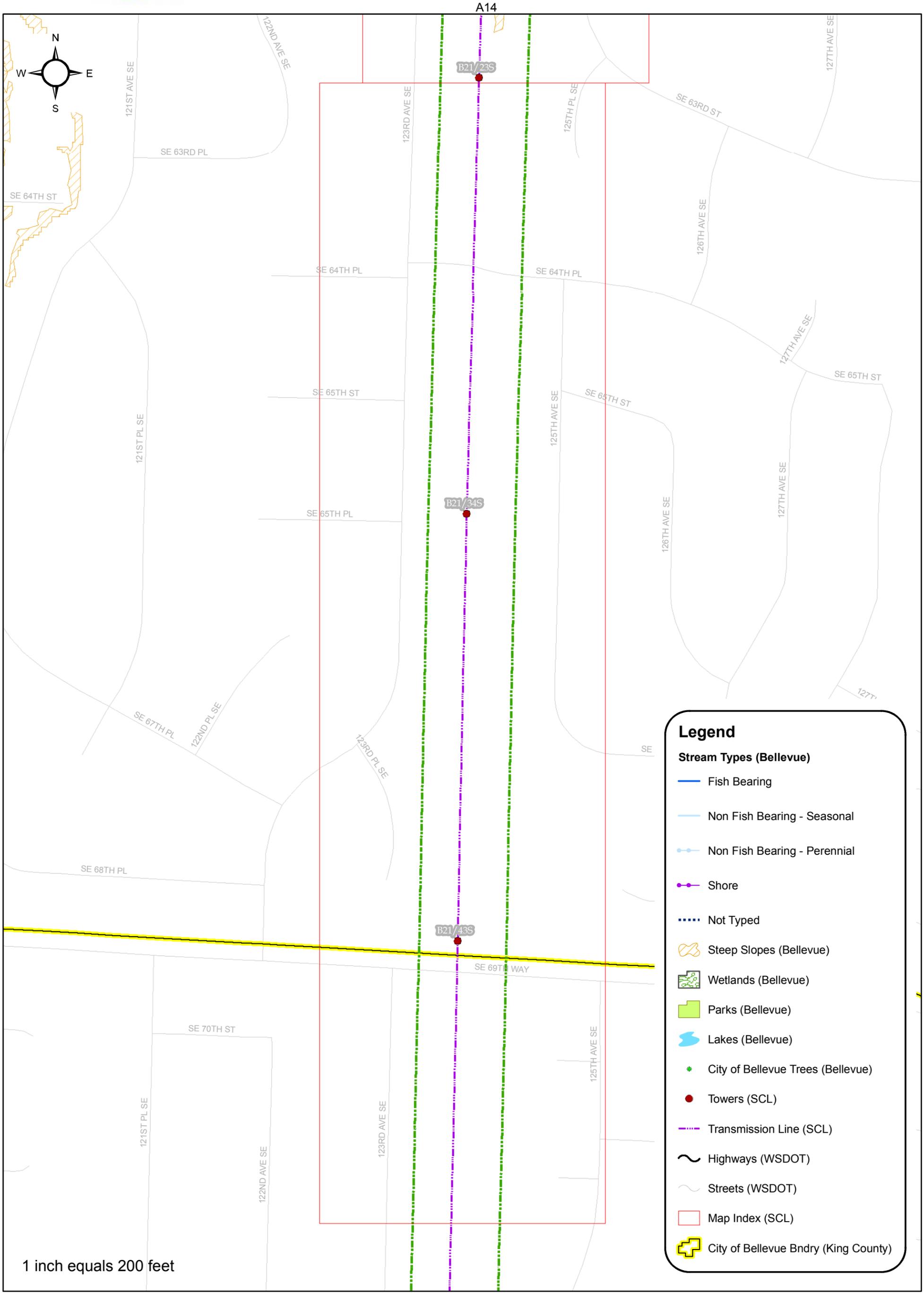


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Seattle City Light Transmission Line (within City of Bellevue) - Environmental Data



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City of Bellevue Bndry (King County)

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**SEATTLE CITY LIGHT
VEGETATION MANAGEMENT AND MAINTENANCE PLAN**

FOR

**EASTSIDE TRANSMISSION LINE CORRIDOR
THROUGH THE CITY OF BELLEVUE**

**SEATTLE CITY LIGHT
ENVIRONMENTAL AFFAIRS DIVISION**

**FINAL
APRIL 2010**



ACCEPTANCE STATEMENT

This Vegetation Management Plan has been prepared by Seattle City Light in cooperation with the City of Bellevue as a condition for a programmatic permit for managing vegetation in environmentally sensitive areas along City Light's transmission line through Bellevue. Seattle City Light and the City of Bellevue hereby agree to the management and coordination protocols provided in the Plan.

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ACRONYMS AND ABBREVIATIONS

ANSI	American National Standards Institute
BMP	best management practice
CAO	Critical Areas Ordinance
FERC	Federal Energy Regulatory Commission
GPS	global positioning system
kV	kilovolt
NERC	North American Electric Reliability Council
NHPA	National Historic Preservation Act
OSHA	Occupational Safety and Health Administration
ROW	right-of-way
SCL	Seattle City Light
TVMP	Transmission Vegetation Management Program
USDA	United States Department of Agriculture
WDFW	Washington Department of Fish and Wildlife
WDNR	Washington Department of Natural Resources
WECC	Western Electricity Coordinating Council
WISHA	Washington Industrial Safety and Health Administration
WSDA	Washington State Department of Agriculture

1.0 INTRODUCTION

Seattle City Light (SCL) owns and operates 657 miles of transmission line and manages more than 5,000 acres of associated right-of-way easement (ROW) in western Washington. SCL's 230-kV Eastside Transmission Line extends 32.5 miles from the Bothell Substation in Snohomish County, south into King County, and onto the Maple Valley Substation near Renton. The line runs through the cities of Bothell, Kirkland, Bellevue, Newcastle, and Renton, as well as parts of unincorporated King County. Approximately 7.3 miles of the Eastside Line (Mile 14.5 to 21.8) are within Bellevue, mostly in the suburban areas east of Interstate (I)-405 (Figure 1-1).

While the primary purpose of the ROW for the Eastside Line is to provide a corridor for the safe transmission of electricity, it also serves a number of other uses that benefit the community and the environment. Portions of the ROW through Bellevue provide recreational opportunities, including trails, parks, and open spaces, that might otherwise not exist in an urban and suburban setting. In some locations the ROW supports the only areas of native plant communities and wildlife habitat remaining in what is an otherwise landscaped or developed setting. Most importantly, the ROW also serves as a movement corridor for wildlife.

This Vegetation Management and Maintenance Plan (Plan) was developed at the request of the City of Bellevue (Bellevue) to address vegetation management activities and practices in environmentally sensitive areas along SCL's transmission line ROW through Bellevue.

This introductory chapter provides the following:

- A description of SCL's Eastside Transmission Line ROW through Bellevue, including the environmental setting and known sensitive areas (Critical Areas, parks, and designated open space);
- The regulatory background for vegetation management along transmission line ROWs; and
- Bellevue's regulations for work in environmentally sensitive areas.

A glossary of terms is provided in Appendix A.

1.1 TRANSMISSION LINE ROW DESCRIPTION

The Eastside Transmission Line was constructed by SCL in the 1920's as part of its commitment to serve a growing community. At that time, SCL obtained a continuous permanent easement from the adjacent property owners to construct, operate, and maintain the Eastside Transmission Line. The Eastside Transmission Line consists of 164 steel towers, aligned in a single row, and two sets of wires, or circuits on each tower. The eastern circuit was energized when the line was constructed in 1920s, while the wires on the west side of the towers were installed and energized in 2000. The lines are 30-50 feet above the ground depending on temperature and load-related sag.

Although there is currently a single row of towers, the ROW for the Eastside Line was designed to accommodate two parallel transmission lines and a double row of towers. As a result, the

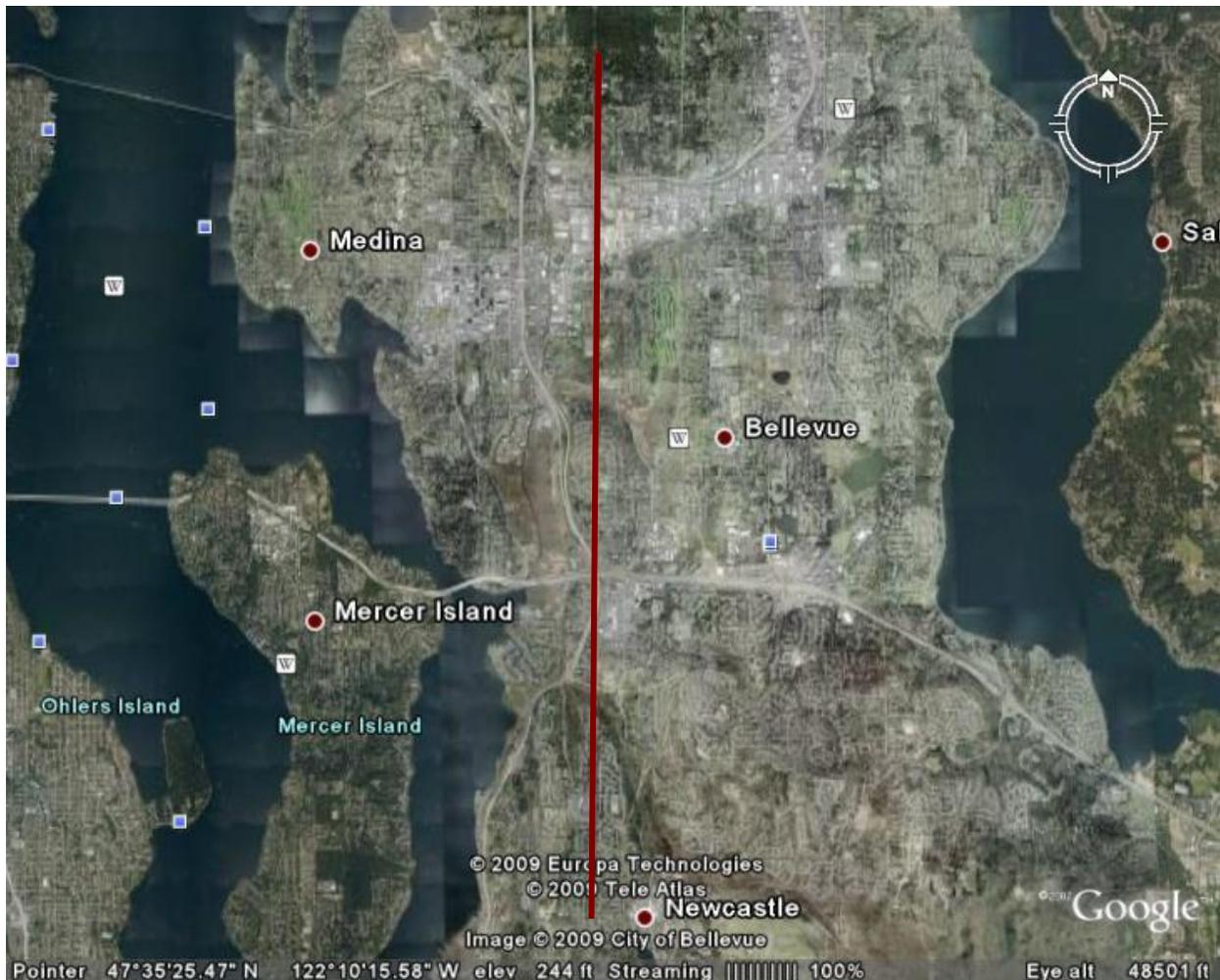


Figure 1-1. Approximate route of the Eastside transmission line through Bellevue.

one existing transmission line does not follow the center line of the ROW. In Bellevue, the ROW is 150 feet wide and extends for 112 feet to the east of the transmission centerline and 38 feet to the west (Figure 1-2).

1.2 ENVIRONMENTAL SETTING

The Eastside Transmission Line ROW is in the northern half of the Puget Trough Physiographic Province. The geology and topography of this area is the result of the cordilleran icecap and the soils consist primarily of gravelly sandy loams deposited by melting glaciers. The Puget Trough Physiographic Province is characterized by a wet, maritime climate. Most of the precipitation occurs during the winter as rain, and summers are relatively dry (Franklin and Dyrness 1984).

Prior to the time of the first European settlers, the lowlands of western Washington were covered with dense coniferous forests. Most of the Puget Sound area, including Bellevue, is in the Western Hemlock Vegetation Zone. In the absence of disturbance, the climax vegetation consists of forests characterized by large western hemlock (*Tsuga heterophylla*) trees; Douglas-

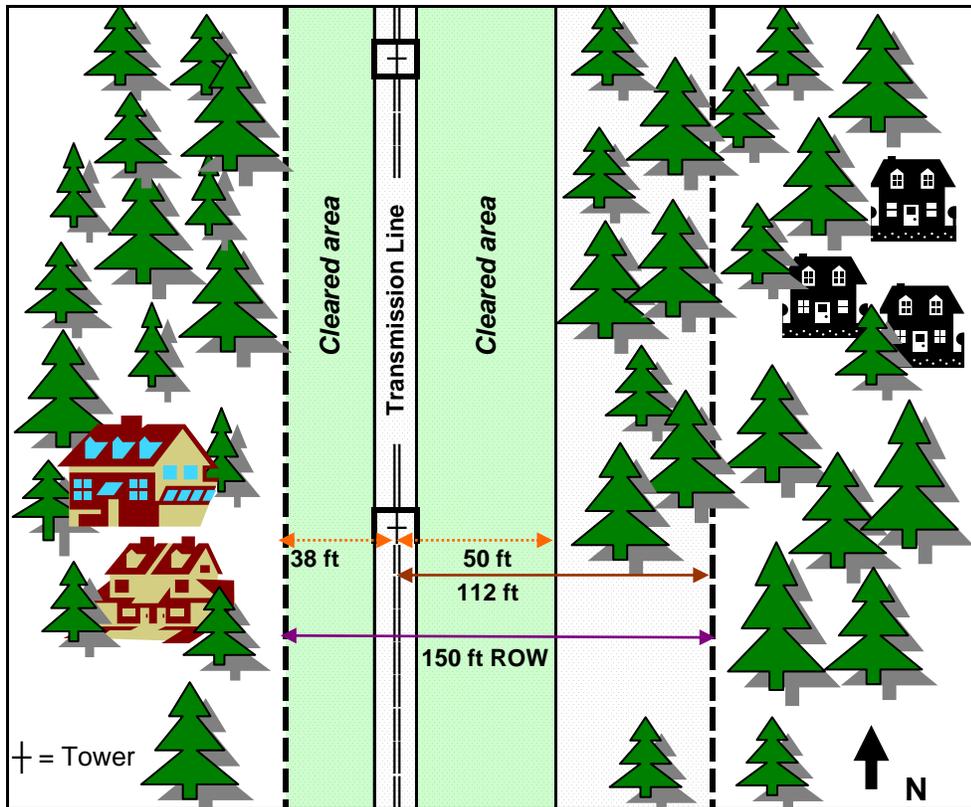


Figure 1-2. Schematic (plan view) of SCL's transmission line ROW and easement through Bellevue. Cleared area on east side of ROW averages 50 ft. in width and ranges from 38-62 ft.

fir (*Pseudotsuga menziesii*), however, typically dominates younger and mid-successional stands (Franklin and Dyrness 1984).

With the arrival of early settlers, much of the lowland forests of Bellevue gave way to agriculture, housing, and urban development. The Eastside Transmission Line ROW currently runs through areas characterized by commercial and residential developments, as well as three designated open space areas and seven parks (Table 1-1; see maps in Appendix F). Land within the ROW through Bellevue is owned by the City of Bellevue and a variety of private entities. About 14.5 acres, or 2 percent, of Bellevue's parks and designated open spaces are within the ROW.

1.2.1 Topography and Soils

The topography crossed by the Eastside Transmission Line is typical of western Washington lowlands, which consists of low ridges, rolling hills, and valleys. Elevations along the line are generally less than 300 feet above sea level. In northern Bellevue, the line crosses rolling hills between the southern border of Bridle Trails State Park and I-520. From I-520 south to Wilburton Hill Park the terrain is fairly flat. South of the park the line drops into the valley associated with Kelsey Creek, heads upslope, and crosses a long ridge crest between Kelsey Creek and I-90. South of I-90 the terrain is relatively level until the Coal Creek drainage.

Table 1-1. Bellevue parks and designated open space (os) within the Eastside Transmission Line ROW¹.

Park/Open Space	Park/OS Area (ac)	Length of Transmission Line (ft)	Area of ROW in Park/OS (ac)	ROW Area as % of Park/OS Area
Pikes Peak Open Space	6.86	244	1.12	16.3
Cherry Crest Park	5.70	--	0.74	12.9
Bel-red Mini Park	0.32	--	0.05	15.6
Wilburton Hill Park	105.66	1,898	8.53	8.1
West Kelsey Open Space	8.73	--	0.10	1.1
Kelsey Creek Park	149.39	--	0.01	<0.1
Woodridge Open Space	39.12	--	0.63	1.6
Woodridge Water Tower Park	1.42	--	0.48	33.8
Norwood Village Neighborhood Park	1.52	--	0.16	10.2
Coal Creek Park	446.83	826	2.71	0.6
Totals	765.59	2,968	14.53	1.9

¹ The transmission line bisects 2 parks and 1 designated open space; the ROW encompasses parts of an additional 7 parks or open spaces.

After spanning Coal Creek the line climbs another slope and again runs along a ridge crest to the northern border of the City of Newcastle.

Soils throughout the Puget Sound region are of glacial origin and influenced by the conifer forest vegetation, which results in a moderately thick humus layer (Franklin and Dyrness 1984). Information from the National Resource Conservation Service indicates that nearly 50 percent of the Eastside Transmission Line ROW consists of gravelly sandy loams. The remainder consists of sandy loams, loamy fine sands, silt loams, mucks, and urban land (National Resource Conservation Service web site, accessed December 30, 2008. <http://soils.usda.gov/>).

A total of 2,049 feet (0.39 mile) of the Eastside Line crosses steep slopes, as identified under the Critical Areas Ordinance (CAO) by Bellevue. These steep slopes are located in five general areas: (1) just south of Bridle Trails State Park, (2) immediately north of I-520, (3) to the north and south of Kelsey Creek, (4) just north of I-90, and (5) in the vicinity of Coal Creek (see maps in Appendix F). The area of ROW associated with steep slopes is approximately 8 acres.

1.2.2 Hydrology

The Eastside Transmission Line crosses four streams in Bellevue: west tributary of Kelsey Creek, Kelsey Creek, Wilburton tributary, and Coal Creek (see maps in Appendix F). Kelsey and Coal creeks are salmon-bearing streams mapped by Bellevue as Type F waters (fish bearing) under the CAO. The west tributary of Kelsey Creek and Wilburton tributary are classified as Type N waters (non-fish bearing waters that intersect a fish bearing water or shoreline of the state, which includes segments of streams with mean annual flow > 20 cubic ft./sec., marine shorelines, and lakes > 20 acres). The transmission line also crosses wetlands associated with Kelsey Creek and three others; there are approximately 3.2 acres of wetland in the ROW (Table 1-2; see maps in Appendix F).

Table 1-2. Bellevue wetlands within the Eastside Transmission Line ROW.

Name	Location	Wetland Areas in ROW (ac)
Hyak Jr. High School Wetland	N of SE 7 th Pl; SW OF Hyak Jr. High School	1.23
Western Median Wetland	Between the lanes of Lake Hills Connector and Richards Rd	1.29
Kelsey Creek Park Wetland	E, N, & W of Lake Hills Connector; S of Glendale Golf Course; S of SE 7 th Pl	0.21
Safeway Wetland	E of 124 th NE; S of Northup Lane; N of Safeway Distribution Center	0.44
Total Wetlands within ROW		3.17

1.2.3 Vegetation

By law SCL is required to manage vegetation within transmission line ROWs in a way that ensures the safe and reliable delivery of electricity. This means that trees must be prevented from growing into or contacting the lines to avoid power outages, fires, and other hazards. In general, SCL follows “wire zone-border zone” concept, as recommended by the American National Standard Institute (ANSI) A300 (Part 7), for managing ROW vegetation (ANSI 2006). The wire zone for the Eastside Line extends 33.5 feet on either side of the center line 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 (Figure 1-3).

Within the wire zone, trees or shrubs that are 12 feet or less for much of their life span (i.e. dogwood [*Cornus stolonifera*], vine maple [*Acer circinatum*], hazelnut [*Corylus cornuta*]) are desirable. Fast growing trees or mature trees and shrubs over 12 feet tall are removed on a cyclical basis. The goal for vegetation management in the wire zone is to develop a self-sustaining community of 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 (25 feet tall at maturity) closer to the line and grade to taller conifers at the edges (Figure 1-4).

Vegetation in the Eastside Transmission Line ROW through Bellevue consists of a variety of small trees, shrubs, grasses, and forbs and includes both native and non-native species. Taller conifers, such as western red cedar and Douglas-fir, often occur at the outer edge of the east side of the ROW which is wider than the west side and can support larger trees without jeopardizing the line. In some places, such as parks and streetscapes, the ROW has been landscaped and includes a diversity of horticultural species. Areas left in a natural state generally support a mixture of native and non-native plants. Common native species are vine maple, oceanspray (*Holodiscus discolor*), salmonberry (*Rubus spectabilis*) salal (*Gaultheria shallon*), and sword fern (*Polystichum munitum*). Non-native species typical to the ROW are Himalayan blackberry (*R. armeniacus*), evergreen blackberry (*R. laciniatus*), and Scotch broom (*Cystis scoparius*).

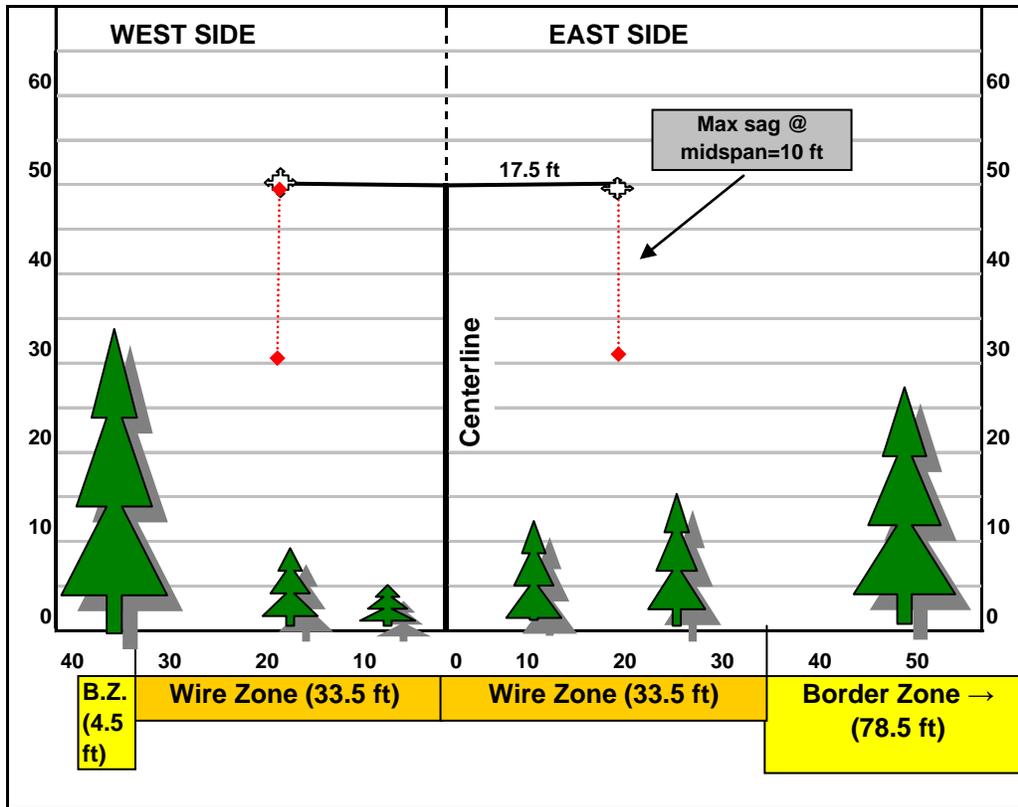


Figure 1-3. Wire (orange) and border (yellow) zones along the 230 kV transmission line through Bellevue (units in feet).

The Washington Natural Heritage Program (WNHP) lists 26 rare plants as potentially occurring in King County. Of these, only 2 have been documented in western King County in habitats that occur along the ROW: bristly sedge (*Carex comosa*) and flat-leaved bladderwort (*Utricularia intermedia*). Bristly sedge is state-listed as sensitive, while flat-leaved bladderwort is under review (WNHP, Washington Department of Natural Resources [WDNR] web site, accessed December 31, 2008 <http://www1.dnr.wa.gov/nhp/refdesk/lists/plantsxco/king.html>). Both species occur in wetlands or along streams at lower elevations. The other 24 rare species listed for King County occur at higher elevations, in forested habitats, meadows, or peat/sphagnum bogs.

1.2.4 Wildlife

Wildlife abundance and species composition in ROWs are largely dependent on the type of habitat in and adjacent to the ROW and the width of the ROW. In forested areas, the development of ROWs results in habitat loss and fragmentation and can indirectly affect wildlife by creating edges that favor species that prey on or compete with forest-dependent wildlife (Fleming and Schmiegelow 2000). Conversely, ROWs can provide habitat for bird species that nest in dense shrub stands, which are typically lacking in adjacent closed canopy forests. In developed areas, ROWs with native vegetation often support a variety of songbirds and small

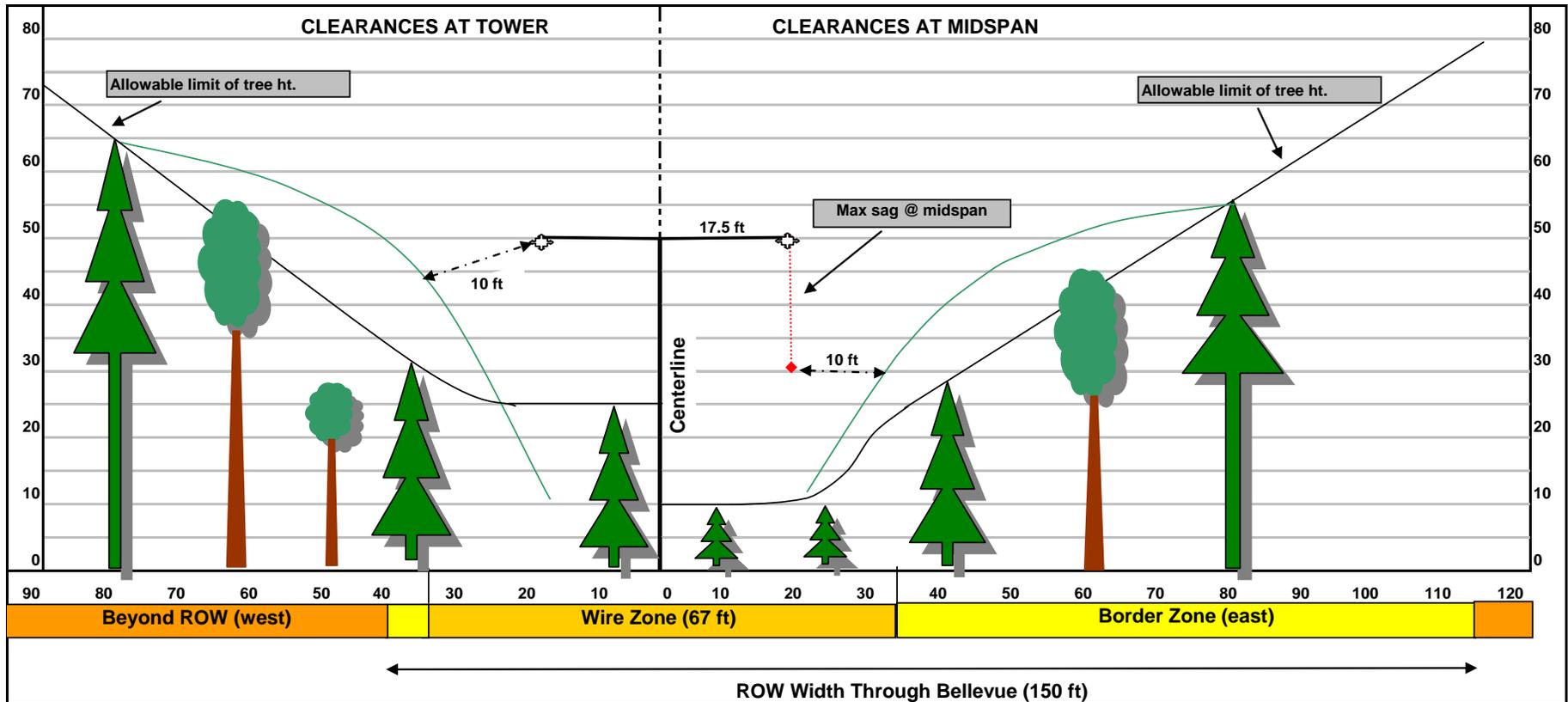


Figure 1-4. Allowable tree height limits along a 230 kV transmission line ROW (units are in feet).

mammals that use more open habitats. Bird species commonly seen along ROWs with native vegetation in western Washington include song sparrows (*Melospiza melodia*), rufous-sided towhees (*Pipilo erythrophthalmus*), black-capped chickadees (*Parus atricapillus*), McGilvary's warblers (*Oporornis tolmiei*), and dark-eyed juncos (*Junco hyemalis*). ROWs also provide travel corridors for larger mammals, such as deer (*Odocoileus hemionus*), coyotes (*Canis latrans*), cougars (*Felis concolor*), and bears (*Ursus americanus*).

Parks and designated open space, as well as some suburban locations, are often used by wildlife that are protected or that have some kind of special status for management purposes. The Washington Department of Fish and Wildlife (WDFW) maintains a list of "priority" species that includes all wildlife species in the state that are: (1) federally or state listed or proposed as threatened or endangered under the Endangered Species Act; (2) federal or state candidates for listing; (3) federal species of concern; (4) state listed sensitive or monitor species; and/or (5) a priority for state conservation and management (WDFW 2008).

A number of priority wildlife species are found in western Washington, including King County, and in fact, 23 have been documented in Bellevue (Bellevue Planning Commission Notes, January 12, 2005). However, the WDFW's Priority Species and Habitats Database (which includes information on the distribution of all priority species in the state) has no records of observations of any priority wildlife species within 0.25-mile of either side of the transmission line ROW through Bellevue (maps and data from WDFW, February 19, 2009). Nonetheless, it is likely that some priority wildlife, particularly birds such as the bald eagle (*Haliaeetus leucocephalus*) pileated woodpecker (*Dryocopus pileatus*), and great blue heron (*Ardea herodias*), use habitats in and near the Eastside ROW at least occasionally.

The City of Bellevue lists two wildlife species of local concern under CAO 20.25H.150—the red-tailed hawk (*Buteo jamaicensis*) and green heron (*Butorides virescens*)—that are not WDFW priority species. The red-tailed hawk is a common raptor throughout Washington and typically forages in open areas, including agricultural areas, parks, and ROWs; power poles are commonly used as perch sites by this species. Red-tailed hawks would be expected to use the Eastside transmission line towers for perching and ROW through Bellevue as forage habitat. Green herons are strongly associated with water and may be found in the ROW where it bisects wetland and riparian habitats.

1.2.5 Fish

The Eastside transmission line crosses Kelsey and Coal creeks, which both support populations of native salmonids. Coal Creek is consistently used by coho salmon (*Oncorhynchus kisutch*) for spawning, although the population has also been substantially supplemented by the WDFW. Spawning by sockeye (*O. nerka*) and Chinook salmon (*O. tshawytscha*), a federally-listed threatened species, also occurs. Winter steelhead (*O. mykiss*), another federally-listed threatened species, as well as resident cutthroat trout (*O. clarki*) are also present in Coal Creek (WDFW 2009); non-salmonid species that potentially occur include sculpins (*Cottus* spp.), dace (*Phoxinus neogaeus*), stickleback (*Gasterosteus aculeatus*), and lampreys (*Lampetra* spp.) (King County web site accessed on December 31, 2008 <http://green.kingcounty.gov/WLR/Waterres/StreamsData/WaterShedInfo.aspx>).

Kelsey Creek is consistently used by spawning coho, fall Chinook, and sockeye salmon; less commonly observed are chum salmon (*O. keta*) and resident cutthroat trout (WDFW 2009). Other species documented in the creek include rainbow trout, sculpins, lamprey, dace, sucker (*Catostomus* spp.), and bluegill (*Lepomis macrochirus*) (King County web site accessed on December 31, 2008 <http://green.kingcounty.gov/WLR/Waterres/StreamsData/WaterShedInfo.aspx>).

1.2.6 Cultural Resources

There are no known cultural heritage sites or archeological sensitive resources along the Eastside transmission ROW through Bellevue (pers. comm., R. Pittman, Associate Planner, Development Services Department, City of Bellevue, March 4, 2009).

1.3 REGULATORY BACKGROUND FOR VEGETATION MANAGEMENT ALONG TRANSMISSION LINE ROWS

Regulations governing the reliable transmission of power are developed by the North American Electric Reliability Corporation (NERC) at the federal level and enforced by the Western Electricity Coordinating Council (WECC) at a regional level. 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 NERC developed new standards for transmission vegetation management programs (TVMPs), in effect as of April 7, 2006, that were 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 and WECC. 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 required to implement the NERC standards for maintaining electric transmission reliability and reducing power outages. These standards are the basis for vegetation management 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 Bellevue to efficiently protect the transmission line, schedule work crews, and be responsive after impacts from storm events;
- (3) procedures and communication protocols that allow the utility to respond to emergencies and to remove trees that represent an imminent hazard to the transmission lines because they are dead, dying, diseased, cracked, split, or leaning over the line or into the wire zone; and
- (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 CITY OF BELLEVUE ENVIRONMENTAL REQUIREMENTS

The City of Bellevue has established standards, procedures, and best management practices that are intended to protect and preserve environmentally sensitive areas, federally listed species, state listed and sensitive species, and species of local importance. Environmental regulations and standards adopted by the City of Bellevue which inform SCL's vegetation management activities and this Plan include the following:

- Bellevue Environmental Procedures Code (Chapter 22.02), which adopts the policies and objectives of the State Environmental Policy Act of 1971 as the policies and objectives of the City of Bellevue;
- Bellevue Clearing and Grading Code (Chapter 23.76), which enacts regulations to implement the environmental element of the city's comprehensive plan and best management practices, and focuses on prevention of potential adverse impacts associated with clearing and grading activities;
- Requirements concerning development and activities within the city's Critical Areas Overlay District (Part 20.25H), which includes any site that is in whole or in part designated as a Critical Area or Critical Area buffer. Designated Critical Areas include the following:
 - Streams
 - Wetlands
 - Shorelines
 - Geologic Hazard Areas (Landslide hazards, steep slopes, coal mine hazard areas)
 - Habitat Associated with Species of Local Importance; and
 - Special Flood Hazard Areas
- Land use codes related to tree preservation and landscaping (including but not limited to LUC 20.20.520 and LUC 20.20.900); and
- Best Management Practices developed by the City of Bellevue Parks and Community Services Department (including Integrated Pest Management and measures to protect such areas as wetlands, wildlife and other elements that may be found in public lands managed by the city).

2.0 PLAN GOALS AND OBJECTIVES

The primary purpose of the Vegetation Management and Maintenance Plan is to establish Best Management Practices (BMP) to guide routine and emergency vegetation management within the ROW for SCL's Eastside Line. The intent of the Plan is to provide a basis for communication between SCL and the City of Bellevue so that vegetation management activities are coordinated between the two parties and that any environmental issues are appropriately addressed. The Plan establishes goals and objectives for managing vegetation within the ROW; defines specific activities and BMPs to meet these goals and objectives; and describes coordination between SCL, the City of Bellevue, and Bellevue residents with property in and along the ROW.

2.1 GOALS AND OBJECTIVES

To meet the purpose and intent of this Plan, SCL's vegetation management activities will be guided by the following general goals and objectives.

Goal 1. Promote the establishment and maintenance of vegetation within the transmission ROW that is compatible with the continued delivery of electricity in a safe, reliable, and economically effective manner.

Objective 1a: Manage vegetation in the transmission corridor in a way that promotes low-growing tree, shrub, and grass/forb communities appropriate to the surrounding area.

Objective 1b: Replace trees removed from the ROW with tree and shrub species that are compatible with the transmission line and land uses in the ROW.

Goal 2. Protect resources in identified Critical Areas, parks, and designated open space that are bisected by the ROW.

Objective 2a: Manage vegetation in a way that protects fish and wildlife habitat along streams and in wetlands and in associated buffers.

Objective 2b: Manage vegetation in a way that protects soil structure and stability on steep slopes.

Objective 2c: Minimize erosion and the establishment and spread of noxious weeds in site with ground disturbance resulting from vegetation management or transmission line maintenance.

Goal 3. Coordinate annual vegetation management activities along the ROW through Bellevue with the City of Bellevue, residents with property in and along the ROW, and state and federal agencies as needed.

Objective 3a: Meet with the City of Bellevue, Parks and Community Services Department, at the beginning of each year to discuss planned management schedule and activities along the ROW.

Objective 3b: Notify private land owners along the ROW prior to tree removal activities on their land.

Objective 3c: Develop and implement a process to review this Plan every four years, and revise and update as necessary.

Objective 3d: Comply with all applicable local, state, and federal environmental regulations.

2.2 ROLES AND RESPONSIBILITIES

Ongoing planning and coordination between SCL and the City of Bellevue will be facilitated by the establishment of clear roles and responsibilities for each party. Implementation of the Plan is the responsibility of SCL; however, the City of Bellevue will have a continuing role in coordination and updates to the Plan.

2.2.1 Seattle City Light

- Plans and conducts vegetation maintenance along the ROW.
- Coordinates with the City of Bellevue on planning and scheduling vegetation management activities, updating maps of priority species, and developing any site-specific measures needed to protect resources in Critical Areas, parks, or designated open space.
- Implements identified site-specific measures to protect resources in Critical Areas, parks, and designated open space.
- Replaces hazard trees that are removed from within and along the ROW.
- Works with the City of Bellevue to update the Plan every 4 years, including Critical Area, Park, and Designated Open Space maps.
- Prepares and submits reports on herbicide application, as required by the Washington State Department of Agriculture.

2.2.2 City of Bellevue Parks and Community Services Department

- Ensures that tree and shrub species planted within the ROW on City of Bellevue property are compatible with the transmission line.

- Maintains all trees and shrubs planted by the City of Bellevue Parks and Community Services Department within the ROW through Wilburton Hill Park at a height < 15 feet or reimburses SCL to trim or remove the vegetation per the easement for this location (see Easement in Appendix B).
- Coordinates with the SCL annually on planning and scheduling vegetation management activities and the development of any site-specific measures needed to protect resources in Critical Areas, parks, or designated open space.
- Coordinates with SCL on vegetation management activities at sites within the ROW that could potentially complement wildlife habitat and native plant restoration objectives for areas near the transmission corridor.
- Provides SCL with periodic updates to lists of priority wildlife species within the ROW through Critical Areas, parks, and designated open space.
- Participates with SCL in the periodic updates of the Plan.

2.3 PLAN IMPLEMENTATION SUMMARY

This Plan consists of four separate but inter-related programs, each dealing with a specific aspect of ROW vegetation management:

- Annual Hazard Tree Inspection and Management
- Routine ROW Inspection and Clearance
- Emergency Inspection and Response
- Planning and Coordination

Each of these programs is addressed in the following chapters.

3.0 ANNUAL HAZARD TREE INSPECTION AND MANAGEMENT

The single largest cause of electrical power outages on SCL's transmission lines is from trees or portions of trees which fall into the lines, especially during wind events. These trees are most often located outside the area that is routinely cleared along the ROW or outside the ROW. The trees break off or fall in their entirety into and across the transmission lines, knocking them down and sometimes breaking the transmission pole/tower structures. They present a high risk to the transmission line's reliability, SCL crews, and public safety.

The west side of SCL's Eastside transmission line through Bellevue is particularly problematic because the ROW is only 38 feet wide (see Figure 1-2). Many native tree species bordering the cleared area along the ROW can grow to 150-200 feet tall, and trees of this size could contact the transmission line if they were to fall. In addition, the prevailing winds are from the southwest. Reducing the risk of tree-related outages requires careful management of trees inside and outside the ROW.

In the terminology of ROW management, a danger tree is defined as any tree within striking distance of the transmission line if it were to fall. Hazard trees are a subset of danger trees and are defined as structurally unsound trees 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.

The primary objective of SCL hazard tree management program is to remove these trees as safely as possible. In general, SCL inspects for and removes hazard trees on an annual basis. This chapter describes the procedures that SCL uses to identify and remove hazard trees from along the Eastside Line, both inside and outside the 150-foot wide ROW; the BMPs that will be used; and mitigation for tree removal.

3.1 ANNUAL INSPECTION AND HAZARD TREE IDENTIFICATION

Inspection is the process of examining the transmission lines and associated ROWs with the objective of identifying hazard trees, damage, and hazardous conditions. Any of these conditions require maintenance to avoid a power outage, fire, or public safety concern. During annual inspections trees along the transmission line are evaluated based on an assessment of their condition and proximity to the line, and marked for removal or monitoring depending on their risk level.

The system for identifying and rating hazard trees 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 or monitored in the current year management cycle. The hazard risk rating system that will be used to assess structural weaknesses, disease, and defects in trees within and along the ROW through Bellevue 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 minor 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.

Hazard tree inspection and identification are conducted by a consultant certified arborist, a SCL certified arborist, or by SCL staff with at least 6 hours training in hazard tree identification. This involves the following steps:

- Marking Risk Level 1 trees with flagging and assigning them an identification number that corresponds to the rating sheet that is filled out for each tree (See Appendix C for Hazard Tree Rating Form). In Critical Areas, parks, or designated open space, Risk Level 1 trees may also be marked with paint in a location on that is not visible from 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 or on a hard copy map.
- Filling out the Hazard Tree Rating Form (See Appendix C) by recording hazard tree species, height, diameter-at-breast height (dbh), hazard risk level, distance from the line, nearest two transmission line tower numbers, and GPS coordinates.

Trees designated as low risk (Level 3) are not mapped or marked. Hazard tree assessment forms are signed off by the SCL Energy Delivery Support Services Manager who is also a Certified Utility Arborist. The hazard trees to be removed (Risk Level 1) are tallied by transmission line segment, as designated by the two nearest tower numbers, and entered into a database.

3.2 COORDINATION AND NOTIFICATION

If hazard trees are identified for removal from Critical Areas, parks, or designated open space, the SCL Energy Delivery Support Services Manager will meet with the City of Bellevue to discuss the following:

- a mutually acceptable schedule;
- stump heights (see Section 3.3.2);
- methods for retention or disposal of tree trunks and slash (see Section 3.3.2);
- creation of wildlife trees if desired by the City of Bellevue and feasible (Section 3.3.2);
- mitigation (see Section 3.4);
- BMPs (Section 3.5); and
- schedule and any needed timing constraints.

SCL will provide a map showing the locations of the hazard trees to be removed, as well as the spreadsheet with information on tree species and size (height and dbh) and the estimated number and species of replacement trees for mitigation. Decisions will be summarized in a short implementation memo.

Staff from the City of Bellevue Parks and Community Services Department will be responsible for notifying the public of planned hazard tree management activities in parks and designated open space via signs or other methods (see Appendix D for proposed notification sign). For safety reasons it may be necessary to close portions of parks and open space during tree removal activities. Park staff will also be responsible for informing the public about closures (see Appendix D). SCL or their contractor is responsible for establishing and maintaining the temporary closure during tree removal operations, and for restoring the site to an open condition following such activities.

Prior to removing hazard trees from private property SCL notifies the affected owners at least 7 days before the work is planned. Notification is by letter, in person, or by a tag left on the door. Letters and tags provide information and a SCL contact number.

3.3 HAZARD TREE REMOVAL AND DISPOSAL PROCEDURES

Hazard trees are felled by SCL crews or by powerline clearance crews under contract to SCL. Crews 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 WDNR fire precaution levels (http://www.dnr.wa.gov/Publications/rp_fire_ifpl2.pdf) and other measures as required by the City of Bellevue. In parks or designated open space SCL or contractor crews are responsible for maintaining any required temporary closures during tree removal operations, and reopening the sites to the public following completion.

Cutting with chainsaws is the primary method for managing hazard trees in the vicinity of transmission lines. Considerations for hazard tree management include the species, size (height and diameter-at-breast height [dbh]), condition, and location. Hazard trees are cut in a manner that minimizes danger to the crew doing the work and avoids damage to nearby structures, and to the extent possible, to the trunks and root systems of adjacent trees. Stumps are left in place; stumps of deciduous trees are treated with herbicide to prevent regrowth. Stumps are treated with Pathfinder 2 (active ingredient triclopyr) or a similar approved cut-stump treatment herbicide that conforms to the City of Seattle's pesticide tier structure. Application is consistent with label instructions and standard work practices.

3.3.1 Procedures in Residential and Urban Areas

In residential and urban areas large trees are usually cut down in sections; smaller trees may be felled whole. Stumps are cut close to the ground to avoid being a safety hazard; in areas where trip-hazards are not a concern, tree stumps are typically 1-2 feet high. Logs and limbs, and other debris are removed from the site unless requested otherwise by the property owner.

3.3.2 Procedures in Critical Areas, Parks, and Designated Open Space

In more natural areas there are several alternatives to cutting hazard trees to the ground and removing all associated wood and debris. These include:

- ***Creating wildlife trees or snags.***
Many birds, such as woodpeckers, chickadees, and tree swallows (*Tachycineta bicolor*), use cavities that develop in standing dead trees for nesting. Large diameter trees are particularly good candidates for snag creation because they are used by a greater diversity of wildlife than smaller snags, and because they persist for years before decaying and falling. The decision to create a wildlife tree depends on worker safety associated with climbing and topping the tree, public safety considerations, and management objectives for the particular site. Creating a wildlife tree or snags typically involves removing branches from the canopy and then cutting the trunk below the height of the transmission line. Deciduous trees are usually girdled to prevent re-growth. Dead or dying trees that already have cavities or that show signs of use by woodpeckers are good candidates for snag creation provided they can be safely topped below the height of the transmission line.

- ***Creating “high stumps,” 3-7 feet tall.***
In forests, 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). As with snags, large diameter trees are the best candidates for high stumps. Site management objectives are the primary factor in deciding whether or not to create high stumps, as there are fewer worker and public safety issues.
- ***Retaining or disposing of logs***
In forested landscapes, logs (down wood) provide habitat for amphibians, reptiles, small mammals, and invertebrates. They also have an important ecological role in forest succession, nutrient cycling, and soil development. In riparian areas logs often have an additional role in streambank stabilization. Down wood can, however, increase fuel loads in some situations and make site access more difficult. The decision to leave logs that result from hazard tree removal depends on site management objectives, including fire prevention. SCL crews typically cut large trees into sections which are left as logs on site. In areas where fuel load, access, or aesthetic concerns make it undesirable to retain logs, SCL can remove them from the site or pile them for the City of Bellevue to offer as fire wood on a case by case basis.
- ***Retaining or disposing of slash***
Slash is defined as tree limbs and branches <6 inches in diameter that result from felling trees. Small woody material on the forest floor is important for nutrient cycling and soil development, and provides cover for small mammals. In certain situations, however, slash can contribute to fuel loads in forests. There are several ways for disposing of branches resulting from hazard tree removal. They can 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 depending on site management objectives. In areas with dense infestations of invasive weeds, for example, it may be desirable to chip or remove slash to avoid creating a substrate where these species can readily establish while native plants cannot.

3.4 MITIGATION FOR HAZARD TREE REMOVAL

Trees perform a variety of ecological functions in natural areas as well as landscaped sites. In suburban and urban setting trees are important for aesthetic purposes. The purpose of mitigating for hazard tree removal is to replace these functions, to the extent possible, in a way that is compatible with transmission line reliability.

3.4.1 Residential and Urban Areas

For hazard tree removals in and along the ROW through urban and residential areas SCL provides property owners with certificates that are redeemable at any nursery for trees or shrub species that grow to <15 feet at maturity. Typically, one certificate is provided as replacement

for each tree removed. It is the responsibility of the property owner to purchase and plant the replacement trees or shrubs. The program is contracted through the Washington State Nursery and Landscape Association.

3.4.2 Critical Areas, Parks, and Designated Open Space

SCL understands that trees, particularly large trees, removed from natural areas can have a significant impact on sensitive resources. Replacement for hazard trees removed from within and near the ROW through Critical Areas, parks, and designated open space will be according to the following ratios:

- 6 to 12 inch dbh: 1 tree + 2 shrubs and/or ferns
- >12 to 24 inch dbh: 2 trees + 3 shrubs and/or ferns
- >24 inch - <36 inch dbh: 3 trees + 4 shrubs and/or ferns
- > 36 inch dbh: 4 trees + 5 shrubs and/or ferns

Replacement species allowed within the ROW depend on slope and side of the transmission line. Although cases of hazard tree removal in the wire zone (33.5 feet on either side of the center line) are rare, no trees or shrubs >12 feet at maturity can be planted within this zone. Any mitigation within the wire zone would need to be accomplished with shrubs; replacement trees could be planted outside this zone. From 33.5-50 feet from the centerline, small trees and shrubs with a maximum height of 25 feet can be planted. Taller, slow growing species can be planted beyond 50 feet, depending on the slope (Figure 4-1). There are several fast growing native deciduous tree species that have a high rate of failure and that cannot be planted in or near the ROW for mitigation. These include black cottonwood (*Populus trichocarpa*), red alder (*Alnus rubra*), big-leaf maple (*Acer macrophyllum*), and bitter cherry (*Prunus emarginata*). (See Appendix E for a list of compatible native and shrub tree species by distance from the transmission center line).

There are two options for mitigating hazard tree removals in Critical Areas, parks, and designated open space. First, SCL could provide the City of Bellevue with certificates for the appropriate number of compatible replacement trees. The City of Bellevue would be responsible for redeeming the certificates at a nursery, acquiring, and installing the plants. Under this option, the City of Bellevue could decide to use the plants at other sites if they deemed replacement unnecessary in or near the ROW. Alternatively, SCL could replant the site using tree and shrub species compatible with site conditions and distance from the transmission line. Preferred compatible species would be suggested by City of Bellevue staff during the annual meeting. SCL's Plant Ecologist would order the appropriate number of each species, as determined by availability, and direct all replanting activities.

SCL replants in the fall when conditions are most favorable for successful plant establishment. Shrub/tree size at time of planting is 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. SCL will consult with City of Bellevue to determine the need for monitoring plant survival and replacement on a site-by-site basis.

3.5 BEST MANAGEMENT PRACTICES FOR HAZARD TREE REMOVAL

SCL follows a set of standard BMPs for all hazard tree removal, regardless of location. Implementation of other BMPs depends on site conditions.

3.5.1 Standard BMPs

Standard BMPs for hazard tree removal in urban and residential areas include the following:

- Property owners will be notified prior to hazard tree removal and provided with the data supporting the hazard rating and alternatives to cutting the tree to the ground (snag, high stump). Property owners will also be notified if SCL expects to use herbicide to prevent deciduous tree re-growth.
- Trees will be felled in a manner that minimizes damage to nearby trees and shrubs.
- Unless otherwise specified by the property owner, trees in urban and residential areas will be cut to the ground with stumps left in place and < 2 inches high to avoid being a trip hazard.
- Tree trunks, branches, and other debris will be removed from the site, unless otherwise requested by the property owner. This material will be moved to the chipper in way that minimized damage to nearby vegetation.
- Stumps of all cut hardwood tree species will be treated to prevent re-growth using Pathfinder 2 (active ingredient triclopyr), or a similar approved cut-stump treatment herbicide that conforms to the City of Seattle's pesticide tier structure, unless otherwise requested by the property owner, or within a wetland or 25 feet of a stream. 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. Application will be by backpack sprayer and will be consistent with label instructions and standard work practices.

3.5.2 BMPs for Work in Critical Areas, Parks, and Designated Open Space

Additional BMPs for hazard tree removal in Critical Areas, parks, and designated open space include the following:

- Vehicle use will be confined to existing roads and trails. Crews will not access trees designated for cutting by driving vehicles off-roads or trails. Bucket trucks will be used to access trees for cutting only if they can remain on an existing road or path.
- Removal of vegetation other than the trees marked for cutting will be minimized. Crews will strive for minimal disturbance of native vegetation to reach trees designated for removal.

- For logs that will remain on site - The branches of all felled trees that are to remain on the site as logs will be cut flush with the trunk, so that tree trunks lie directly on the ground. Logs from trees that are cut in segments will be scattered, not left in a pile near the stump.
- For wildlife tree or snags - All branches will be removed from the upper canopy and then the trunk will be cut at a slant below the height of the transmission line. When it can be done safely, the lower limbs on the trunk will be retained to provide perch sites for birds (Figure 3-1). Other measures, such as scoring the top for moisture retention and cutting in cavities (Figure 3-1), will be considered for particularly large trees if requested by the City of Bellevue and if possible to implement safely. Deciduous trees will be girdled to prevent re-growth
- Tree limbs and other debris that will remain on site will be lopped and scattered, unless invasive species are excessively dominant. In this case, the slash will be chipped and scattered on site or hauled away.
- Herbicide will not be used to treat cut stumps of hazard trees in wetlands, within 25 feet of streams, or during the rainy season (November-April).

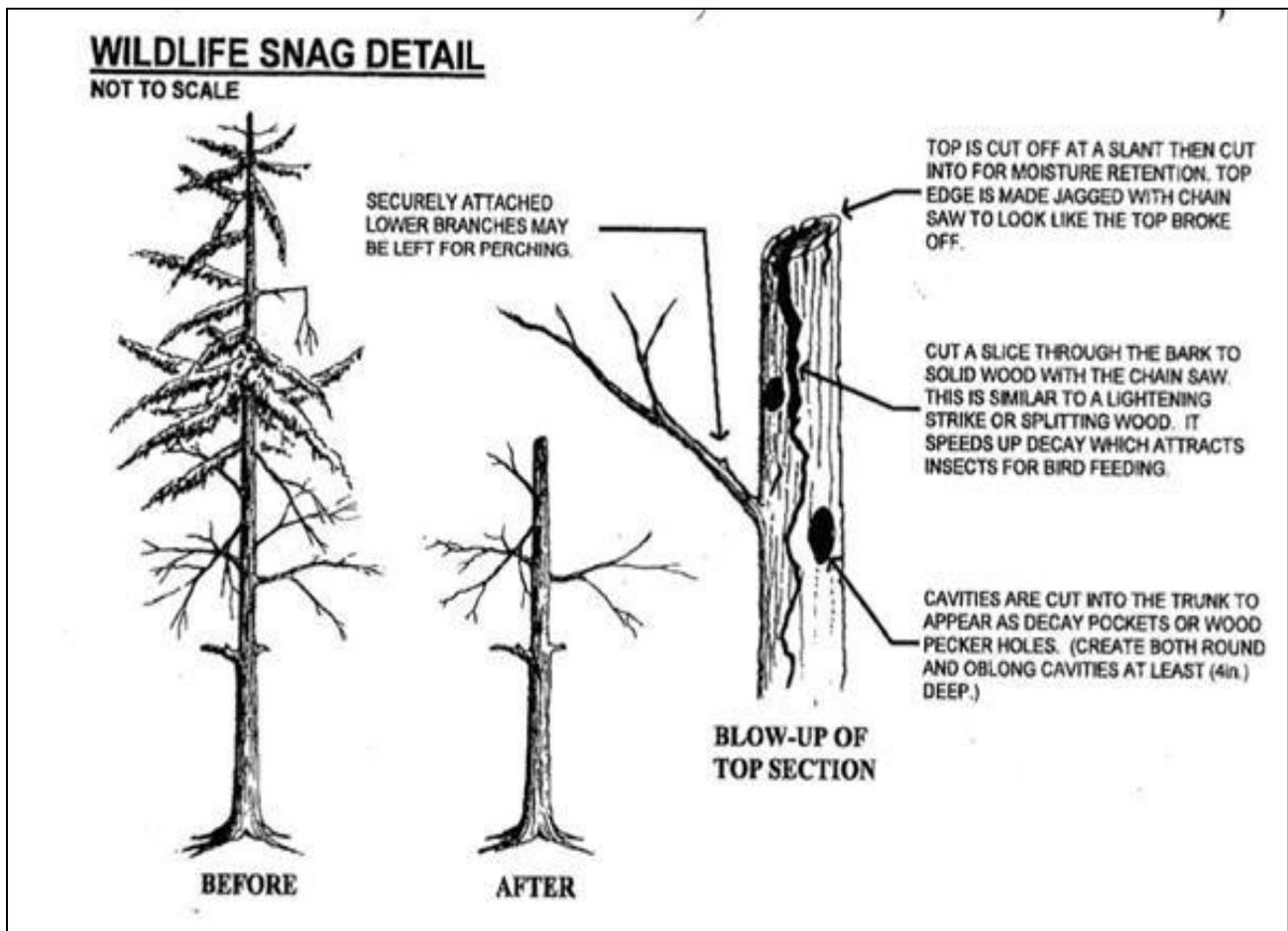


Figure 3-1. BMP for snag creation (source: Urban Forestry Services, Inc. Mt. Vernon, WA).

4.0 ROUTINE ROW INSPECTION AND CLEARANCE

This chapter describes the routine procedures that SCL uses to manage incompatible small trees and brush in ROWs and how these activities will be coordinated with the City of Bellevue for the Eastside transmission line. These routine activities include the following:

- Routine inspection
- Vegetation clearance
- Slash management
- Side-pruning

The primary objective of these activities is to maintain transmission line reliability by ensuring that small trees and large shrubs within the ROW, particularly in the wire zone, cannot cause an outage by growing into line. While SCL inspects the ROW annually for hazard trees, clearance and associated slash and debris management are conducted as needed and are usually not required every year. SCL typically schedules these activities on a 4-year cycle, but may do some minor clearance more often.

4.1 ROUTINE INSPECTION

Inspection involves examining a transmission line ROW with the objective of determining the extent of vegetation maintenance needed during routine clearance. The transmission line, conductors, and towers are also inspected for any damage or normal wear requiring maintenance. During routine inspection the SCL Vegetation Management Crew Chief drives or walks along the ROW and identifies specific areas where small trees need to be removed. The heights of trees designated for clearance will vary by location:

- Wire Zone (33.5 feet on either side of the transmission centerline) – Any tree or shrub \geq 12 feet tall or potentially reaching 12 feet in height within 4 years. In practice this means that small trees are cut when they are \geq 8 feet tall (Figure 4-1).
- Border Zone (4.5 feet beyond the wire zone on the west side of the line and 78.5 feet beyond the wire zone on the east side) – Any tree that could contact the transmission line if it were to fall (Figure 4-1).

In addition, trees with branches growing into the wire zone (<16 feet from the conductors) are marked for side-trimming. Trees are identified for side-trimming only if < 50 percent of the branches are growing into the wire zone. If > 50 percent of the crown needs to be pruned out of the wire zone SCL typically removes the tree because crown reduction of >50 percent stresses a tree and can contribute to instability (ANSI 300).

4.2 COORDINATION AND NOTIFICATION

Following the routine Eastside Transmission Line ROW inspection, SCL's Energy Delivery Support Services Manager or designee will set up meeting with the City of Bellevue if

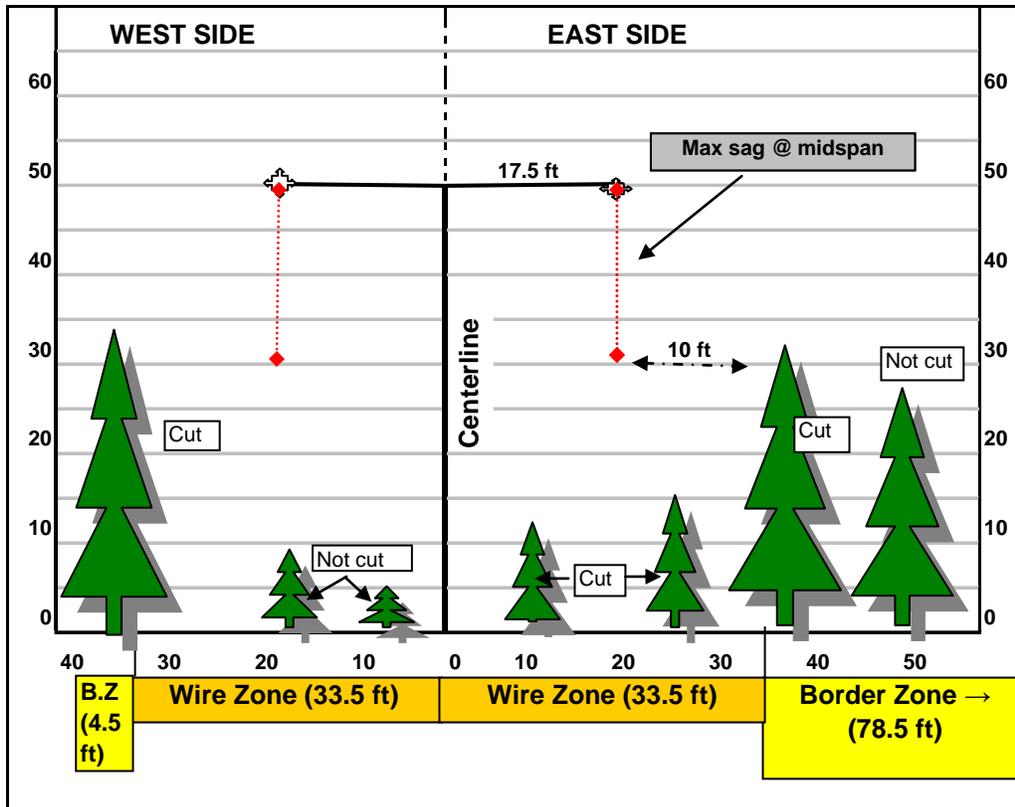


Figure 4-1. Example of small trees designated for clearance in the wire (orange) and border zones (yellow) within the cleared portion of the transmission line ROW through the City of Bellevue.

clearance activities are needed that year. In preparation for this meeting, SCL will provide a short memo describing the proposed clearance work and any required tower maintenance or conductor replacement, as well as a map showing the locations of the work. In addition, both SCL and the City of Bellevue will review the maps of priority species and Critical Areas relative to the planned vegetation management activities in the upcoming year. At the meeting the following topics will be discussed:

- Current year transmission line/tower maintenance plans;
- Locations needing vegetation clearance and/or tree side trimming;
- Clearance methods to be used (see Section 5.3) and slash management in Critical Areas parks, and designated open space;
- Specific measures to protect resources in Critical Areas or parks (timing restrictions, access considerations);
- Need for signage and public information in parks and designated open space;

- The desired schedule for vegetation clearance and any required line/tower maintenance; and
- Whether any needed vegetation clearance through Wilburton Hill Park will be conducted by SCL or the City of Bellevue. According to the easement for the ROW through Wilburton Hill Park, the City of Bellevue is responsible for maintaining trees and shrubs planted by the City within the ROW through the Park at a height < 15 feet. If SCL does the clearance work in the Park, arrangements will need to be made for reimbursement from the City of Bellevue per the easement (Appendix B).

Prior to implementing clearance on private property, SCL's Vegetation Management Crew Chief or a contracted notifier contacts individual owners to inform them of the planned activities.

4.3 CLEARANCE AND SLASH MANAGEMENT

In practice, most of the vegetation cleared from the wire zone consists of sapling Douglas-fir, red alder, black cottonwood, big-leaf maple, and bitter cherry trees, and willow trees. These species grow fast and are therefore not compatible with transmission line reliability. There are also a few shrub species, such as hazelnut and elderberry, that are slower growing but which eventually reach a height that requires their removal.

Vegetation clearance is accomplished by using manual (i.e. lopping by hand crews) and/or mechanical (i.e. chainsaws, mowing) methods. Small trees and large shrubs are cut below the lowest live limb to eliminate the continued growth of lateral branches. Stumps are cut parallel to the ground for safety. Stumps of all hardwood trees and shrubs are treated to prevent re-growth with an herbicide labeled for cut surface treatment. Stumps are treated as soon as practical following cutting, with herbicide applied to the outermost bark ring and the remaining trunk and root collar. Stumps are treated with Pathfinder 2 (active ingredient triclopyr) or a similar approved cut-stump treatment herbicide that conforms to the City of Seattle's pesticide tier structure. Application is consistent with label instructions and standard work practices.

4.3.1 Procedures in Residential and Urban Areas

In residential and urban areas, vegetation clearance in the ROW usually involves removing individual small, fast growing saplings and is accomplished by using chainsaws and hand tools. Stumps are cut close to the ground to avoid being a safety hazard; in areas where trip-hazards are not a concern, tree stumps are typically 1-2 feet high. Slash is removed from the site unless requested otherwise by the property owner.

4.3.2 Procedures in Critical Areas, Parks, and Designated Open Space

Clearance methods used in more natural areas along the ROW depend on topography, and existing vegetation. In flat areas dominated by low growing vegetation, small trees and large shrubs are typically removed by mowing. Debris resulting from mowing is typically left on site. Chainsaws and loppers are used to cut small trees in Critical Areas, including steep slopes and wetlands, and in areas that are dominated by taller shrub species (i.e. huckleberry, vine maple,

willows, and hazelnut). SCL typically lops and scatters slash 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, slash can also be chipped with the residual chips blown on site or removed. The clearance and slash management methods to be used in specific Critical Areas, parks, and designated open space will be coordinated with the City of Bellevue prior to beginning work.

4.4 SIDE-PRUNING

Pruning is used to reduce the risk of branches contacting the conductors, and applies primarily to large trees growing along the ROW. Side-pruning targets 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 is 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 OSHA and WISHA. And SCL Safety Division, as well as WDNR fire precaution levels (http://www.dnr.wa.gov/Publications/rp_fire_ifpl2.pdf) and other measures as required by the City of Bellevue. Objectives for slash/debris management determine if the limbs are removed from the site or left within or near the ROW (see Section 4.3).

4.5 MITIGATION

Utilities, including SCL, do not typically mitigate for routine vegetation clearance as impacts to canopy cover and ecological processes are minimal. However, there may be occasions where transmission line maintenance activities result in substantial ground disturbance and vegetation loss. In these areas SCL will implement measures needed to control weeds and erosion. In addition, SCL will coordinate with the City of Bellevue on a case by case basis to mitigate impacts.

There may also be locations along the ROW through Bellevue parks and Critical Areas where it would be mutually beneficial for SCL and the City of Bellevue to collaborate on vegetation conversion. Areas that are dominated by invasive weeds have little ecological value and are often also problematic for ROW management. Conversion of these areas to self-sustaining native shrub communities could have numerous benefits. SCL is willing to work with the City of Bellevue on these types of opportunities.

4.6 BMPs for Vegetation Clearance

SCL follows a set of standard BMPs for vegetation clearance, regardless of location. Implementation of other BMPs depends on site conditions.

4.6.1 Standard BMPs

Standard BMPs for clearance and side-pruning in urban and residential areas include the following

- Property owners will be notified prior to clearance activities and provided with the rationale for the need for clearance. Property owners will also be notified if SCL expects to use herbicide to prevent deciduous tree re-growth.
- Small trees and shrubs will be cut to the ground in urban and residential areas with stumps left in place an < 2 inches high) to avoid being a trip hazard.
- Slash will be removed from the site, unless otherwise requested by the property owner. This material will be moved to the chipper in way that minimizes damage to nearby vegetation.
- Stumps of all cut hardwood tree and large shrub species will be treated to prevent re-growth using Pathfinder 2 (active ingredient triclopyr), or a similar approved cut-stump treatment herbicide that conforms to the City of Seattle’s pesticide tier structure, unless otherwise requested by the property owner, or within a wetland or 25 feet of a stream. 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. Application will be by backpack sprayer and will be consistent with label instructions and standard work practices.
- Trees will be pruned following ANSI A300 (Part 1) standard practices, which include 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. Cedar branches will be feathered instead of blunt cut. Articulated mower heads will not be used for side-pruning.

4.6.2 BMPs for Work in Critical Areas, Parks, and Designated Open Space

Additional BMPs for ROW vegetation clearance and side-pruning in Critical Areas, parks, and designated open space include the following:

- With the exception of mowers, vehicle use will be confined to existing roads and trails.
- Mowers will be set at a height that does not remove vegetation to ground level or scour the soil.
- Removal of vegetation other than trees and shrubs identified for clearance will be minimized. Crews will strive for minimal disturbance of native vegetation to reach the shrubs and trees designated for removal.

- Slash that remains on site will be lopped and scattered. Slash that cannot be moved to the chipper without damaging nearby vegetation will be lopped and scattered.
- Herbicide will not be used to treat cut stumps of brush in wetlands, within 25 feet of streams, or during the rainy season (November – April).
- When possible, clearance activities will be scheduled outside the spring/early summer season to avoid impacts to nesting birds.

5.0 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 coordination with City of Bellevue staff.

5.1 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 the transmission line ROW.

It is typically very difficult to implement notification procedures during emergency situations. Prior notification of the city of Bellevue will not be part of emergency inspections. However, following an emergency inspection, a SCL Vegetation Management or Line Crew Chief will immediately inform the City of Bellevue of any condition that might present a public safety concern. Similarly, City of Bellevue staff who observe any conditions near the transmission line or ROW that need immediate attention should promptly notify SCL. An up-to-date list of emergency contacts for both the City of Bellevue and SCL will be provided by each organization on an annual basis or more often, as appropriate.

5.2 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 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 felled in Critical Areas, parks, and designated open space will be left in place provided they do not block roads or trails. SCL's Vegetation Management Crew Chief will notify the City of Bellevue by telephone or e-mail within 48 hours of an emergency tree removal. As needed during major storm events, SCL will also coordinate with both Cities' Emergency Operations Centers.

6.0 PLANNING AND COORDINATION SUMMARY

Successful implementation of the Plan requires communication and coordination between SCL and the City of Bellevue. This section summarizes the following: (1) the process SCL and the City of Bellevue will use to coordinate vegetation maintenance activities; (2) the process and schedule that will be followed to periodically update this Plan; and (3) tracking and reporting.

6.1 ROUTINE COORDINATION

Inspection of the Eastside Transmission Line ROW for hazard trees occurs on an annual basis; inspections for routine vegetation clearance and line maintenance is scheduled every four years, and emergency inspections and response can occur at any time. Hazard tree removal and vegetation clearance are usually done concurrently and by the same crew and can occur at any time of year. Vegetation clearance activities do not generally occur along the entire line in any one year but are staggered. For example, SCL may schedule routine vegetation clearance along the northern 10 miles of the Eastside Line one year and the next 10 miles the following year. Some locations may also require more frequent vegetation clearance. Consequently, it is likely that vegetation clearance and/or hazard tree removal will occur along some portion of the Eastside Line through Bellevue in most years, thus requiring coordination between SCL and the City of Bellevue annually.

As described in Sections 3 and 4, SCL's Manager of Energy Delivery Support Services will set up a meeting with the City of Bellevue following inspection of the line if hazard tree removal and/or vegetation clearance activities will occur in that year. The purpose of the meeting will be to discuss the locations and schedule of vegetation management activities planned for the current year, as well as clearance methods, slash disposal, and mitigation for hazard tree removal (see Sections 3.2 and 4.2). In particular, any special BMPs for work in Critical Areas, parks, and designated open space will be identified. This meeting will also serve to identify vegetation management or transmission line maintenance activities in Critical Areas or on City of Bellevue properties that could result in significant impacts to vegetation cover and/or habitat functions that may require mitigation other than tree replacement. For these areas SCL will work with the City of Bellevue to develop a plan to replace those functions within the area under consideration.

Additional public notification and information for major work in Critical Areas, parks, and designated open space may be necessary, and SCL and the City of Bellevue will use their joint meeting to identify the needs for signage and/or jointly held community meetings. SCL's Manager of Energy Delivery Support Services will document major decisions and action items from the meeting in a short memo or e-mail to City of Bellevue. The memo will also include a current list of contact names, phone numbers, and e-mails for SCL vegetation management staff. A follow-up site visit will be set up if needed.

Advance coordination during emergencies is usually not possible. However, a SCL Vegetation Management Crew Chief will contact the City of Bellevue with 48 hours of emergency tree removal.

6.2 PLAN UPDATE

This Plan will be reviewed by SCL and the City of Bellevue every 5 years following adoption, and revised and updated as necessary. Any needed revisions will be discussed at a meeting; SCL will then develop a revised draft Plan for review by the City of Bellevue within 3 months of the meeting, consulting with appropriate resource specialists and SCL Vegetation Management staff as needed. Maps of areas with priority wildlife will be reviewed and updated if necessary. To comply with Washington State requirements, SCL and the City of Bellevue will maintain the confidentiality of such maps.

6.3 TRACKING AND REPORTING

SCL tracks the locations along the ROW where vegetation management is planned and has occurred. This information is maintained in an Excel database and reported to the NERC annually. Data on the number and location of hazard trees removed from along the ROW can be used to determine whether and where wildlife habitat trees should be created during the next vegetation maintenance cycle.

SCL will be responsible for complying with any reporting and record keeping requirements associated with the use of herbicides for vegetation management. Herbicide application records are required by Washington State Department of Agriculture (WSDA) and must contain information on target species; location and size of area treated; application date, time, and method; the type and amount of carrier used; and herbicide trade name, Environmental Protection Agency (EPA) registration number; supplier; and concentration (see WSDA website for more information). Records are maintained for 7 years, as stipulated by WSDA and will be available, if requested, to the City of Bellevue.

7.0 LITERATURE CITED

- 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. 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.
- 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.
- Fleming, W. and F. Schmiegelow. 2002. Response of bird communities to pipeline rights-of-way in the boreal forest of Alberta. In: *The Seventh International Symposium on Environmental Concerns in Rights-of-Way Management*. John W. Goodrich-Mahoney, D. Mutrie, C. Guild, Eds. Amsterdam: Elsevier Science, Ltd.
- Franklin, Jerry F. and C. T. Dyrness. 1973. *Natural vegetation of Oregon and Washington*. Oregon State University Press.
- 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.
- King County. Web site accessed December 31, 2008. Stream data.
<http://green.kingcounty.gov/WLR/Waterres/StreamsData/WaterShedInfo.aspx>.
- National Resource Conservation Service. Web site accessed December 31, 2009. Soils data.
<http://soils//usda/gov>
- 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. Web site 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.

Pittman, Riley. Associate Planner, Development Services Department, City of Bellevue. Personal Communication (March 4, 2004).

WDFW (Washington Department of Fish and Wildlife). February 19, 2009. Priority habitat and species polygon cross reference report for Township T24 R05E. Olympia, WA

WDNR (Department of Natural Resources). Web site accessed December 31, 2008. Rare plants of Washington. <http://www1.dnr.wa.gov/nhp/refdesk/lists/plantsxco/king.html>.

WDNR. Web site accessed December 4, 2009. The Washington State industrial fire precaution level system. http://www.dnr.wa.gov/Publications/rp_fire_ifpl2.pdf.

APPENDIX A
GLOSSARY OF TERMS

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 Right of Way (ROW) and is usually managed to maintain a cover of tall shrubs or small trees (10-25 feet at maturity). Because the transmission line is not in the center of the ROW, the easement extends 163 feet to the west and 237 feet to the east of the line.

Clearance – The removal of small trees or large shrubs within the ROW, particularly the wire zone, to prevent them from causing outages by growing into the transmission line.

Danger Tree – A danger tree is any tree that could contact the transmission line if it were to fall.

Hazard Tree - Hazard trees are a subset of danger trees and are defined as structurally unsound trees 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.

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 for preparedness; and educates, trains, and certifies industry personnel.

Priority Species – The term used in this Plan to refer to wildlife that are: (1) federally or state listed or proposed as threatened or endangered; (2) federal or state candidates for listing; (3) federal species of concern; (4) state listed sensitive or monitor species; and/or (5) a priority for state conservation and management (WDFW 2008).

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 City of Bellevue is 150 feet wide and extends for 112 feet to the east of the transmission line centerline and 38 feet to the west.

Side-pruning – Pruning to remove branches from the sides of trees that are growing within the wire zone or could do so within a year.

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

Tree removal – Felling or removal of a mature tree greater than 6 inches diameter at breast height.

Wildlife Species of Local Concern – Wildlife species of local conservation interest in Bellevue, as defined by CAO 20.25H.150

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

ROW EASEMENT THROUGH WILBURTON PARK

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 bracts |
| <input type="checkbox"/> | Evidence of disease-infestation by ants, termites, or boring insects |
| <input type="checkbox"/> | Evidence of disease-within, 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:

APPENDIX D

PROPOSED VEGETATION MANAGEMENT NOTIFICATION SIGN

NOTICE

**SEATTLE CITY LIGHT HAS CONDUCTED
A VEGETATION ASSESSMENT IN THIS AREA**

**TREES PRESENTING A HAZARD
TO THE OVERHEAD TRANSMISSION LINES WILL BE
REMOVED**

BETWEEN

AND

**City of Bellevue Permit # 10-102655 GH
QUESTIONS? PLEASE CALL**

(_____) _____ - _____



Seattle City Light

APPENDIX E

**COMPATIBLE NATIVE TREE AND SHRUBS SPECIES FOR REPLACEMENT
PLANTING**

NATIVE SHRUBS SUITABLE FOR WIRE-BORDER ZONE PLANTING

Wire Zone: Low Shrubs (<15 feet)		Border Zone: Tall Shrubs & Small Trees (16-35 feet)	
Species for Mesic Sites	Height at Maturity*	Species for Mesic Sites	Height at Maturity
Kinnikinnick <i>Arctostaphylos uva-ursi</i>	<1	Vine maple <i>Acer circinatum</i>	22
Redstem ceanothus <i>Ceanothus sanguineus</i>	10	Serviceberry <i>Amelanchier alnifolia</i>	16
Snowbrush <i>Ceanothus velutinus</i>	10	Indian plum <i>Oemleria cerasiformis</i>	16
Beaked hazelnut <i>Corylus cornuta</i>	13	Cascara <i>Phamnus purshiana</i>	33
Salal <i>Gaultheria shallon</i>	10	Pacific rhododendron <i>Rhododendron macrophyllum</i>	26
Oceanspay <i>Holodiscus discolor</i>	13	Species for Wet to Moist Sites	
Dull Oregon-grape <i>Mahonia nervosa</i>	2	Red-osier dogwood <i>Cornus sericea</i>	20
False box <i>Pachistima myrsinites</i>	3	Black hawthorn <i>Crataegus douglasii</i>	33
Mock-orange <i>Philadelphus lewisii</i>	10	Hooker's willow <i>Salix hookeriana</i>	20
Red-flowering currant <i>Ribes sanguineum</i>	10	Sitka willow <i>Salix sitchensis</i>	26
Sticky currant <i>Ribes viscosissimum</i>	6	Red elderberry <i>Sambucus racemosa</i>	20
Dwarf rose <i>Rosa gymnocarpa</i>	4		
Thimbleberry <i>Rubus parviflora</i>	10		
Trailing blackberry <i>Rubiis ursinus</i>	<2		
Mountain ash <i>Sorbus sitchensis</i>	13		
Common snowberry <i>Symphoricarpus alba</i>	6		
Alaska blueberry <i>Vaccinium alaskensis</i>	6		
Black huckleberry <i>Vaccinium membranaceum</i>	5		
Red huckleberry <i>Vaccinium parvifolium</i>	13		
Evergreen huckleberry <i>Vaccinium ovatum</i>	13		
Species for Wet to Moist Sites			
Black twinberry <i>Lonicera involucrata</i>	10		
Fools huckleberry <i>Menziesia ferruginea</i>	10		

Wire Zone: Low Shrubs (<15 feet)		Border Zone: Tall Shrubs & Small Trees (16-35 feet)	
Nootka rose <i>Rosa nutkana</i>	10		
Devil's club <i>Oplopanax horridus</i>	10		
Pacific ninebark <i>Physocarpus capitatus</i>	13		
Black swamp gooseberry <i>Ribes lacustre</i>	6		
Stink currant <i>Ribes bracteosum</i>	10		
Salmonberry <i>Rubus spectabilis</i>	13		
Hardhack <i>Spiraea douglasii</i>	6		
Dwarf blueberry <i>Vaccinium caespitosum</i>	<1		
Highbush-cranberry <i>Viburnum edule</i>	10		

APPENDIX F

**EASTSIDE TRANSMISSION LINE & ROW
ENVIRONMENTAL DATA MAPS**

Appendix F
Map Index Notes

The Environmental Affairs Division requested and received Washington State Department of Fish and Wildlife Priority Habitat and Species (PHS) GIS data:

Bald Eagle Management Zones

Of the 31 locations identified, the closest occurrence of these features was approximately 4000 feet beyond the transmission line ROW.

Wildlife Survey Occurrence Point

Of the 26 locations identified, the closest occurrence of these features was approximately 4900 feet beyond the transmission line ROW.

Wildlife Survey & Data Management Database

Of the 7 locations identified, the closest occurrence of these features was approximately 3200 feet beyond the transmission line ROW.

National Wetlands Inventory

While several streams in the NWI fell within the ROW, the stream paths differed from those supplied by the City of Bellevue; therefore it was decided to use the City of Bellevue's GIS Stream Types layer in lieu of the NWI data.

Priority Habitat and Species

The PHS shapefile consisted of Riparian Zones, Urban Natural Open Spaces, and Wetlands. It was decided to rely on City of Bellevue's shapefiles (wetlands & parks) in lieu of the PHS data due to inconsistencies between the data, i.e. some wetlands and portions of parks identified by City of Bellevue were not evident, or had a different outline in the PHS data.