

Impacts to Tree Canopy

Abstract

The proposed transmission line will require the removal of 3600 trees along an 18-mile corridor predominately in residential areas¹. In the South Bellevue segment, the permit under consideration, 1030 trees would be removed. These trees must be removed to accommodate new towers and transmission lines, but also because of rules limiting vegetation encroachment onto electric transmission line corridors. Removal of these trees not only creates an unacceptable environmental impact, but violates plans and policies to protect tree canopy in Bellevue and other cities. Suggested mitigation of planting small shrubs and trees, in place of mature, established trees would significantly reduce the amount of carbon sequestration.

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¹ http://www.energizeeastsideeis.org/uploads/4/7/3/1/47314045/chapter_4.4_plants_and_animals.pdf page 12

1. Tree Removal as Planned by PSE for its Transmission Lines

The proposed new transmission line will require the removal of trees for two reasons. First trees will be removed to allow for the new towers for transmission lines. Second, and more substantially, the new 230 kV lines will require the removal of trees to provide a clear area to prevent interference by vegetation, i.e. establishing so called “clear zones.” A number of these trees are considered significant. The percentage of trees subject to removal ranges between 41% and 80% within the PSE proposed alignment. This includes:

- Richards Creek substation - 41%
- Redmond - 80%
- Bellevue north - 60%
- Bellevue central - 70%
- Bellevue south - 68%
- Newcastle - 64-68%
- Renton - 58%²

These numbers reflect tree removal projected for construction of the PSE 230kV transmission line. The corridor as it currently exists has regular maintenance checks for vegetation with very few trees removed because the predominate zone use districts are residential, with well-maintained properties.

With the PSE proposal, in **Bellevue south**, there would be 1030 trees removed, of which 442 were determined to be significant, 3 from critical areas and 69 in critical area buffers. In **Newcastle**, 250 trees would be removed, of which 30 were determined as significant and 21 in critical area buffers. In **Renton** 350 trees would be removed, of which 250 were determined to be significant, 3 from critical areas and 38 from critical area buffers.³ The FEIS references “significant tree” as defined by the trunk diameter (measured at 4 feet above existing ground.) In Bellevue, a significant tree has at least, an 8-inch diameter; in Newcastle, at least, an 8-inch diameter for an evergreen or 12-inch diameter for a deciduous tree; in Renton, at least a 6-inch diameter tree or, at least, an 8-inch diameter for alder or cottonwood trees.

The current PSE Application has been bifurcated to include only the areas in Bellevue south. Should PSE apply for an application covering Bellevue north, an even greater tree canopy would be impacted.

The removal of trees by PSE would also include 147 removed from **parks** along the proposed route.⁴

² http://www.energizeeastsideeis.org/uploads/4/7/3/1/47314045/chapter_4.4_plants_and_animals.pdf page 10-11

³ http://www.energizeeastsideeis.org/uploads/4/7/3/1/47314045/chapter_4.4_plants_and_animals.pdf pages 17-22.

⁴ www.energizeeastsideeis.org/uploads/4/7/3/1/47314045/pse_veg_impact_analysis_summary_sept_1_2016_updated.pdf pages 3, 7, 6, 8.

In the area of the **Richards Creek Substation**, 173 trees would be removed, of which 109 were determined as significant. In addition, 2.8 acres of forested habitat would be removed at a new Richard Creek substation site.^{5 6}

There would be 25-30 trees removed in the **Coal Creek Natural Area** and about 45 trees removed from the **May Creek Natural Area**.⁷

PSE asserts that the project is needed because of growth in the downtown and commercial areas. But single-family residential land use predominates in the zones for the proposed 230kV transmission line and towers. From the EIS: "Based on a linear-foot breakdown of the study area for PSE's proposed alignment, the most common existing land uses include:"

- Residential (single-family and multi-family) (49 %)
- Vacant land (17%)
- Industrial (9%)
- Institutional (9%)^{8 9}

Substantially fewer trees would be removed if an alternative to the proposed 230kV transmission line were implemented, such as energy storage and/or conservation. Alternatives should be located in commercial or industrial areas as suggested by many residents commenting in the EIS, including CENSE.

It has also been documented that a mature tree canopy assists in carbon dioxide exchange, improves water quality, reduces air pollution and reduces energy use (shade in summer months; wind reduction in the winter). Trees constitute a useful weapon in the battle over greenhouse gases and climate change.^{10 11}

This tree removal not only impacts the character and appearance of residential areas, but these trees offer habitat to many bird species and other small animals. The proposal for "clear zones" prescribed would decimate residential landscapes - many with 40-50-year-old well maintained trees, water features, rock gardens and specialty plantings, slow-growing alpine trees that in 40 years are just reaching 15-20 feet, professional landscape plans and even vegetable gardens. The "Energize Eastside" Vegetation Analysis notes that while some trees and other vegetation may be planned as mitigation, any newly planted trees are limited to those that do not exceed certain heights.

⁵www.energizeeastsideeis.org/uploads/4/7/3/1/47314045/pse_veg_impact_analysis_summary_richards_crk_sept_1_2016_up_dated.pdf page 1.

⁶http://www.energizeeastsideeis.org/uploads/4/7/3/1/47314045/chapter_4.4_plants_and_animals.pdf page 11

⁷http://www.energizeeastsideeis.org/uploads/4/7/3/1/47314045/chapter_4.6_recreation.pdf pages 11 and 13

⁸http://www.energizeeastsideeis.org/uploads/4/7/3/1/47314045/chapter_4.1_land_use_and_housing.pdf page 3

⁹<http://powerline-zoning.s3-website-us-west-2.amazonaws.com>

¹⁰<http://www.naturewithin.info/urban.html>

¹¹<https://www.nature.com/news/tree-growth-never-slows-1.14536>

2. Tree Count Discrepancies in Staff Report

The City of Bellevue Development Services *Land Use Division Staff Report* issued on January 24, 2019 clearly acknowledges the significant adverse impacts to the aesthetic environment.

*"Within the South Bellevue Segment, the Final EIS disclosed that the Energize Eastside project could have **significant unavoidable adverse impacts to the aesthetic environment** where the transmission lines will traverse a portion of the Somerset neighborhood. PSE's proposal is compatible and consistent with the land use pattern in this area of Somerset, but the increased pole height in this area will contrast with the low buildings and low vegetation that result from the private covenants protecting views in Somerset to a greater extent than the current transmission line."*¹²

But there is a discrepancy between what is reported in the *Land Use Division Staff Report* and the FEIS with regard to the number trees to be removed in the South Bellevue Segment. The Staff Report mentions **580** significant trees to be removed. The January report claims that 485 trees are located on non-city owned property, including 108 on the Richards Creek Substation property and that the remaining 377 are located within the 3.3-mile south Bellevue segment.¹³

This contradicts what is stated in the FEIS for the Bellevue South Segment (at 4.4.5.6 page 20):

"Vegetation Clearing: About 1,030 trees (68 percent of trees surveyed along the segment) could be removed, including the potential removal of about 442 significant trees, three trees from critical areas, and about 69 trees from critical area buffers."¹⁴

Another misstatement needs to be pointed out. In the letter from PSE to Heidi Bedwell dated January 15, 2019, (Attachment E in the Staff Report) it is suggested that property owners have not discussed tree replacement options because they do not want any tree replacement or mitigation offered by PSE. To believe that would be a careless assumption. In fact, many homeowners have stated, in written and oral comments to PSE, that they will discuss any tree replacement **when** the Energize Eastside application is approved - **and not before**.

3. Policies in Bellevue and Other Jurisdictions Related to Tree Canopy

Bellevue is known as a "city in a park" and has been recognized for many years as "Tree City USA." Between 1986 and 2006 the tree canopy in Bellevue experienced a 20 percent loss. The City launched its *Environmental Stewardship Initiative* in 2006 and in the *2015 Comprehensive Plan* update, the city adopted a 40 percent urban tree canopy goal. This PSE proposal violates the Vision of the Comprehensive Plan

¹² https://development.bellevuewa.gov/UserFiles/Servers/Server_4779004/File/pdf/Development%20Services/EnergizeEastside/Staff%20Report%20FINAL%201242019.pdf page 75

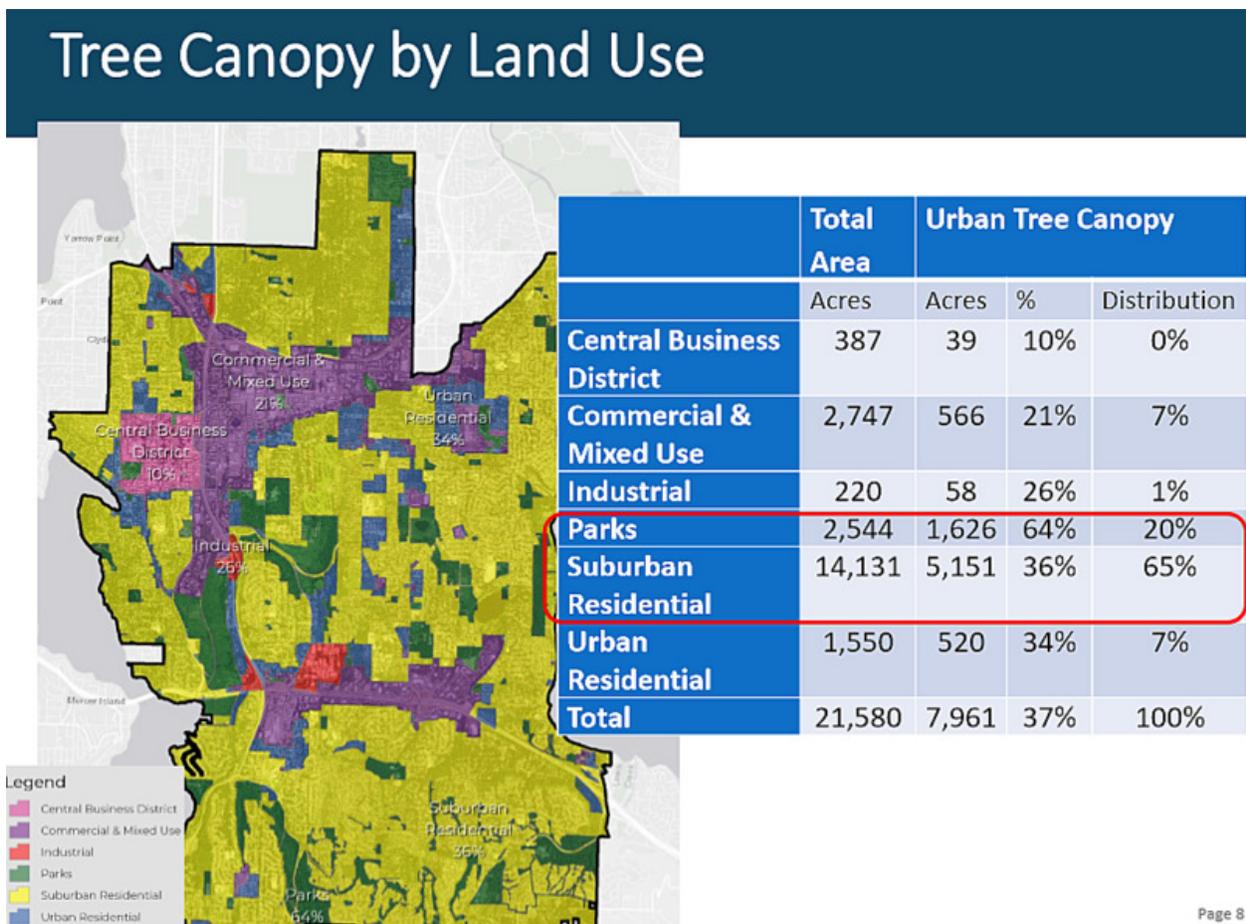
¹³ https://development.bellevuewa.gov/UserFiles/Servers/Server_4779004/File/pdf/Development%20Services/EnergizeEastside/Staff%20Report%20FINAL%201242019.pdf page 76

¹⁴ http://www.energizeeastsideeis.org/uploads/4/7/3/1/47314045/chapter_4.4_plants_and_animals.pdf page 20

which stipulates that growth in Bellevue should be "focused in denser mixed-use centers, like Downtown, BelRed and Eastgate, while maintaining the city's natural environment and the health and vitality of established residential neighborhoods." The Comprehensive Plan lays out a groundwork of planning policies to guide city action and long -range policy direction.^{15 16}

In the 2017 *Tree Canopy Assessment Results; City Council Update* presented to the Bellevue City Council on September 24, 2018 the key findings were:

- Bellevue Parks have a significant canopy cover of 64% overall.
- Majority of the city's tree canopy is in suburban residential areas (65%)
- Need 670 Acres of Canopy to reach 40% goal¹⁷



- **Figure 1** Suburban residential neighborhoods have the greatest percentage of tree canopy of any land-use zone.

¹⁵ <https://bellevuewa.gov/discover-bellevue/about-us/hot-topics-initiatives/trees-and-our-city/>

¹⁶ planning.bellevuewa.gov/UserFiles/Servers/Server_4779004/File/pdf/PCD/01_Intro_and_Vision_FINAL_20150727.pdf page 4

¹⁷ [Tree Canopy Assessment Study Session 9_24_18.pdf](#) page 7

The Tree Canopy by Land Use graph was also presented to Council which highlights those land use districts with the greatest percentage of tree canopy.¹⁸

The power point presentation on Bellevue's tree canopy, presented by Jennifer Ewing and Mac Cummins, to Bellevue City Council clearly illustrates the dramatic effect the proposed Energize Eastside would have on two neighborhoods with the largest percentage of tree canopy. Two neighborhoods targeted for the 230kV transmission lines are: Bridle Trails at 48%; Somerset at 45%.¹⁹

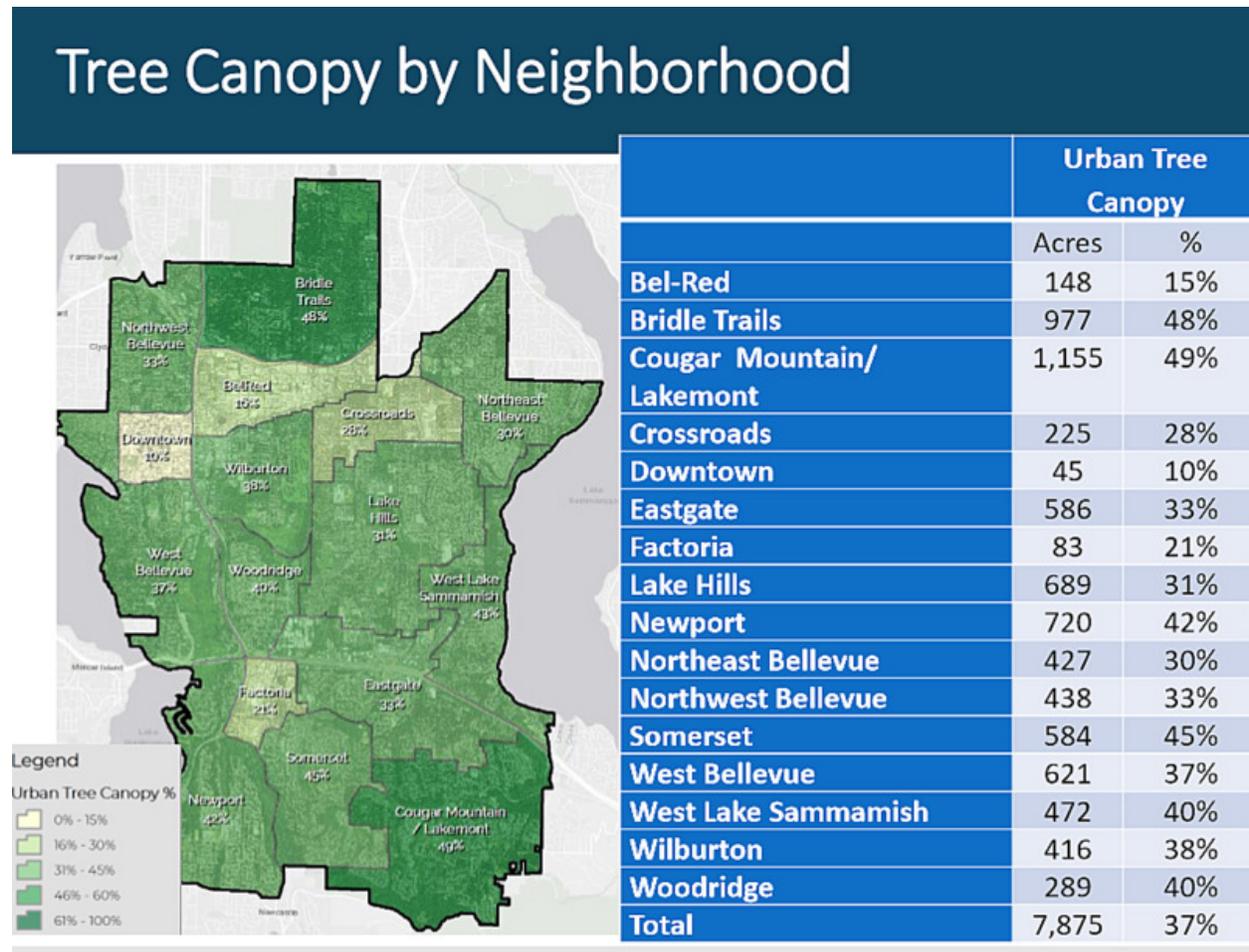


Figure 2 Trees are a significant aspect of the Somerset neighborhood in South Bellevue with a tree canopy of 48 percent, the third most-dense tree canopy in Bellevue.

¹⁸Tree Canopy Assessment Study Session 9_24_18.pdf page 8

¹⁹Tree Canopy Assessment Study Session 9_24_18.pdf page 10

Comparison with Other Cities

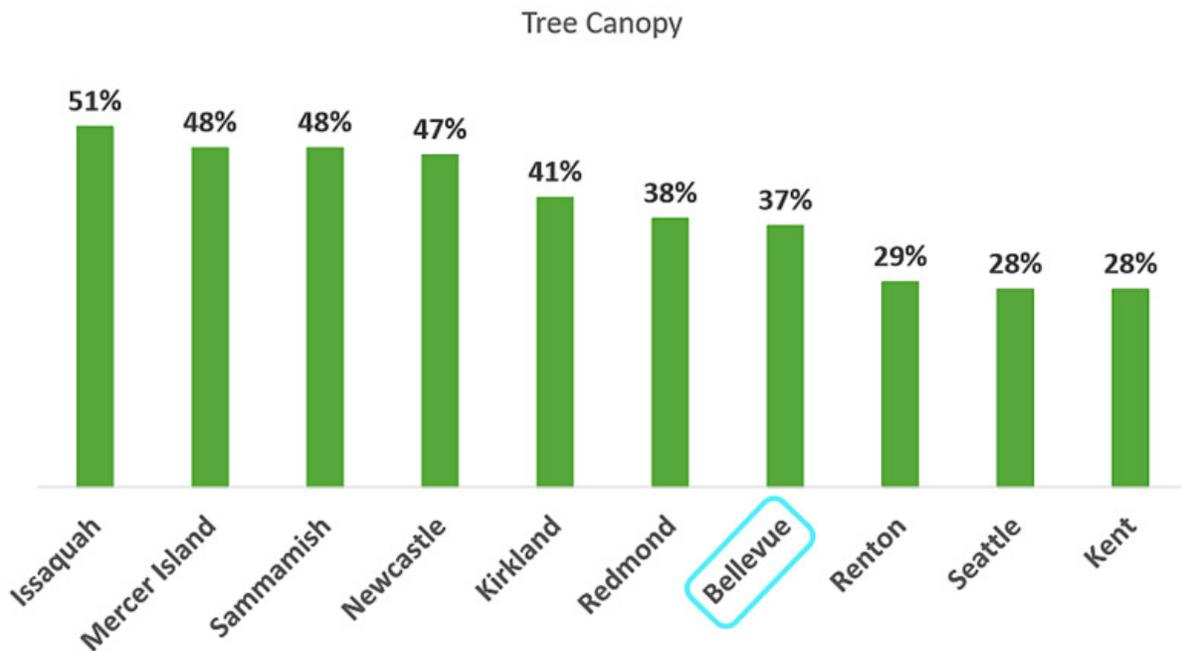


Figure 3 Bellevue describes itself as “A city in a park,” yet it ranks seventh out of ten cities in the greater Seattle-Bellevue metropolitan areas for percentage of tree canopy.

This graph, presented on September 24, 2018 before Bellevue's City Council, compares tree canopy in cities on the Eastside, along with Seattle: Comparison with Other Cities.²⁰

In the Environmental Element section of PSE's Energize Eastside CUP Proposal Description for South Bellevue it states: "The proposed transmission line replacement and substation project will have major impacts on the environmental resources within the City of Bellevue." The citywide tree canopy goal is at least 40% tree canopy, maintaining an action plan across all land uses: right-of-way, public lands, commercial and residential uses.²¹

LUC 20.20.255 establishes a “location selection hierarchy” that prefers nonresidential areas for locating a new or expanded electrical utility facility. In addition, LUC 20.20.255 also requires that if there are

²⁰ [Tree Canopy Assessment Study Session 9_24_18.pdf](#) page 14

²¹ http://www.energizeeastsideis.org/uploads/4/7/3/1/47314045/cup_proposal_description.pdf page 13

“operational needs” for an electrical utility facility, that facility should be located within the area of need. However, residential areas have stable and established electric demand which will not increase over the years to come. The “operational needs,” to the extent they exist at all, are in commercial and downtown areas - not in residential areas. Compliance with location hierarchy would preserve the trees that are proposed for removal.

4. Replacement Plantings Insufficient to Mitigate Tree Loss

Mitigation measures are inadequate to offset the loss of trees as described above. Any substitute measures are limited because no trees will be planted that would be of the size and breath of existing trees. Moreover, some mitigation proposals call for new plantings some distance from the corridor, or simply the payment of money, a pay in-lieu fee to the cities, providing no relief for adjacent property owners and neighborhoods.²²

It is also important to identify that the “Energize Eastside” project is proposed to deal with limited time of peak power shortages, in very short periods of very high or low temperatures. As discussed elsewhere in this notebook, it is likely that within the next decade that other means of addressing possible peak power shortfalls will be put into place. However, the tree loss will essentially be permanent. The Department of Ecology EIS comment letter of June 19, 2015 (Fig. 6) expressed concern that this proposed project would permanently result in the conversion in the plant community from a tree strata to a shrub strata. All habitat functions would be permanently affected by the tree removal of between 41% and 80% along the Eastside.

5. Conclusion

The THLTL as currently proposed by PSE would result in a 68% loss of trees, along with ground vegetation, principally in single family residential areas. Such losses are contrary to established city policy. The significant loss of trees valued for their natural features, habitat, shading and cooling cannot be justified under the circumstances. Mitigation for the loss of substantial tree canopy is not sufficient to off-set these losses. The use of alternatives such as energy storage or the reconductor of the Seattle City Light lines would not require the extensive tree canopy removal. An energy storage facility placed on the Richards Creek site is an example of an alternative that would protect the tree canopy in Bellevue. The site is commercially zoned and not environmentally sensitive (with an approved CALUP). The loss of substantial numbers of significant trees, when combined with the overall environmental impact supports denial of this proposal under SEPA and the Bellevue Land Use Code.

²² http://www.energizeeastsideeis.org/uploads/4/7/3/1/47314045/section_3.4_plants_and_animals.pdf page 33.

6. Appendix

Study area and land cover for plants and animals ²⁰

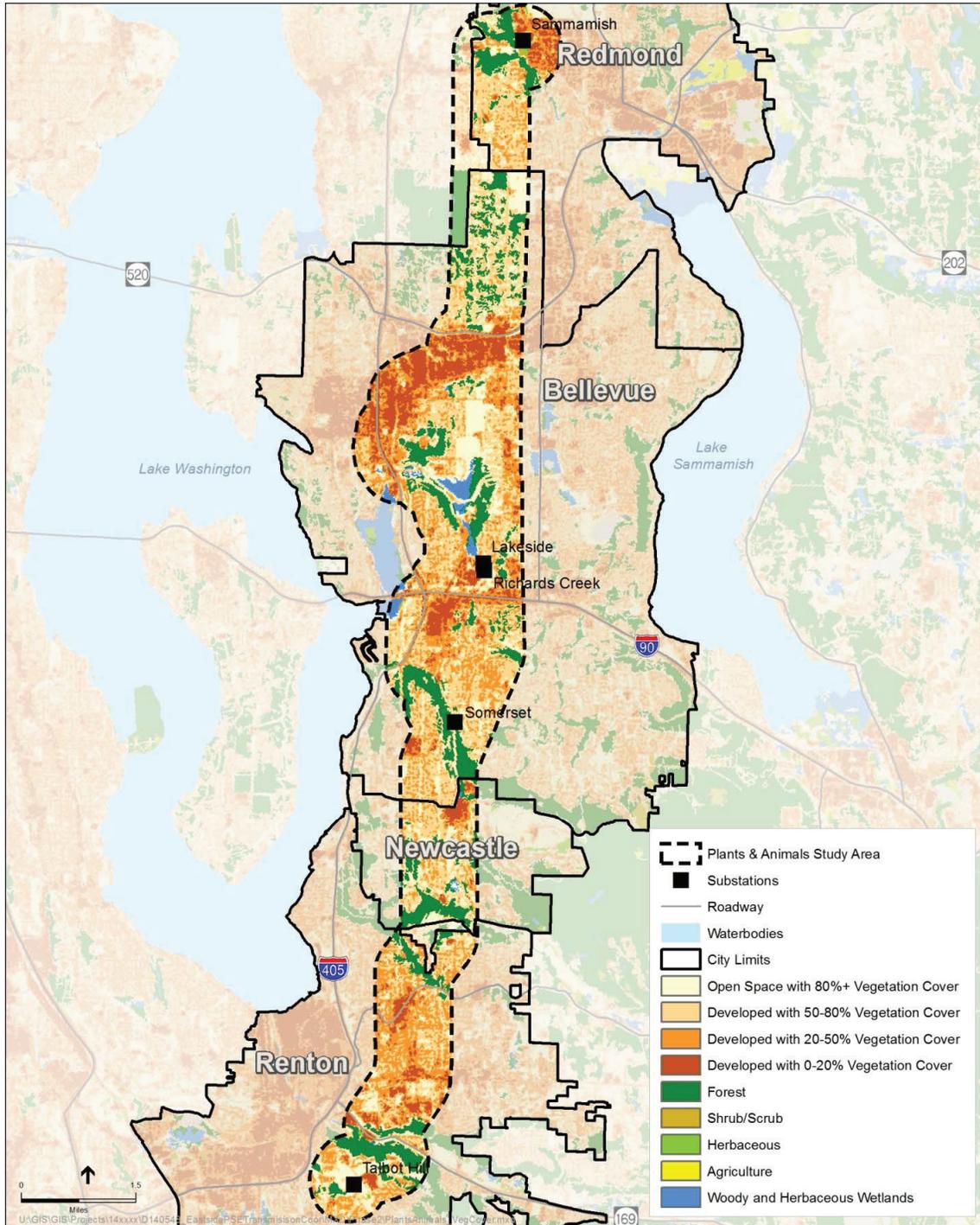


Figure 4 Path of transmission line would impact areas with 50-80% vegetation cover, eliminating biomass important for CO₂ sequestration.

²⁰ http://www.energizeeastsideeis.org/uploads/4/7/3/1/47314045/section_3.4_plants_and_animals.pdf

Bellevue Greenhouse Gas Emissions ²¹

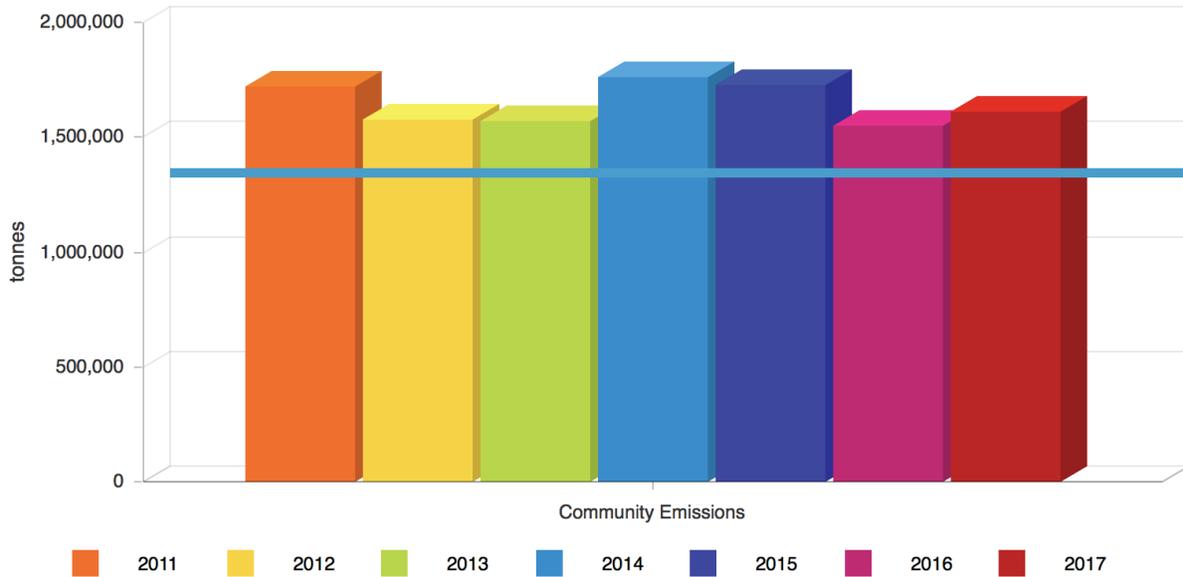


Figure 5

The 2006 community emissions baseline is 1,725,000 metric tonnes. The Mayor's Climate Protection Agreement target adopted by City Council in 2007 is 7% below 1990 levels by 2012, or about 1,300,000 metric tonnes.

This graph is meant to show trends over time. Each year's number should be viewed as an estimate using the best available data rather than exact numbers. From time to time, protocols may be updated and conversion factors revised. Communities can assess emissions from their consumption based on two methods: a location-based method or a market-based method. Both methods serve to allocate emissions from the point of generation to their final point of use, and are typically indirect emissions ("scope 2"). A location-based method is based on average energy generation emission factors for defined locations, including local, sub-national or national boundaries. It yields a grid average emission factor representing the energy produced in a region, and allocates that to energy consumers in that region. The GPC requires that Cities shall use the location-based method for scope 2 calculations, but may separately document emissions from the market-based method. Bellevue's location-based emission factors are derived from the EPA's eGRID published data for the NWPP electricity grid. You may notice that in some years total community emissions are significantly lower because the eGRID emission factor used in that year for electricity is lower than other years. For more information about eGRID visit the [EPA's site](#). For years 2011 onward, Bellevue has allocated non-road combustion and fugitive emissions from King County based on our share of population (e.g. non road emissions from industrial, recreational, and lawn equipment, and fugitive emissions from refrigerants, pipelines and SF6), making our totals slightly higher than it would be under the previous out-of-date methodology.

²¹ <https://k4c.scope5.com/pages/62>



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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June 19, 2017

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RE: Ecology Comments on Energize Eastside DEIS

Dear Ms. Bedwell:

Thank you for sending information on the Energize Eastside project for our review and comment. Based on our review of the Draft Environmental Impact Statement (DEIS), we recommend changes that are summarized in an attached table.

Literature Sources Reviewed

The project submittal that was reviewed by Ecology included:

- *Energize Eastside Project, Phase 2 Draft Environmental Impact Statement, Volume 1: Draft EIS*, prepared by Environmental Science Associates, Inc., dated May 8, 2017
- *Energize Eastside Project, Phase 2 Draft Environmental Impact Statement, Volume 2: Appendices*, prepared by Environmental Science Associates, Inc., dated May 2017

Project Description

The Energize Eastside project proposed by Puget Sound Energy (PSE) involves constructing approximately 18 miles of new 230 kilovolt electrical transmission lines and adding a new substation (Richards Creek) at the Lakeside substation in Bellevue. This linear project is located within the cities of Redmond, Bellevue, Newcastle, and Renton; and within unincorporated King County. This project will connect two existing bulk energy systems (one to the north in Redmond and one to the south in Renton), supply future electrical capacity, and improve electrical grid reliability for Eastside communities.

The project corridor is divided into six segments (Redmond, Bellevue North, Bellevue Central, Bellevue South, Newcastle, and Renton). The proposed transmission line would follow the existing corridor in four of these segments (Redmond, Bellevue North,

Newcastle, and Renton). However, within the Bellevue Central segment there are three optional alignments (Existing Corridor, Bypass Option 1 and Bypass Option 2) and within the Bellevue South segment there are five optional alignments (Existing Corridor, Oak 1 Option, Oak 2 Option, Willow 1 Option, and Willow 2 Option).

The DEIS chapters on Water Resources (3.3) and Plants and Animals (3.4) describes the critical areas (streams, wetlands, and their associated buffers) that are within the project footprint and whether there will be short-term construction impacts, cumulative impacts, and significant unavoidable adverse impacts. This includes one river (Cedar River), three major streams (Kelsey Creek, Coal Creek, and May Creek), seven named streams (East Creek, Richards Creek, Willows Creek, Goff Creek, Sunset Creek, Honey Creek, and Ginger Creek), and at least 37 unnamed tributaries. This also includes 11 Category I wetlands, 22 Category II wetlands, 63 Category III wetlands, and 57 Category IV wetlands.

The short-term construction impacts that would occur include construction of the Richards Creek Substation and installation of the new transmission lines. Construction impacts would occur from clearing and grading for the substation and excavation for the pole footing, stringing wires across streams and wetlands, and clearing for access roads and staging areas. No cumulative impacts and significant unavoidable adverse impacts would occur.

Ecology Comments and Concerns

We have listed our concerns with the project in the attached Table 1. This table lists the specific locations within the DEIS and our recommended changes.

Table 1. List of comments on the Energize Eastside project by the Washington Department of Ecology.

ITEM	SECTION	RECOMMENDED CHANGES
1	Fact Sheet, Governmental Actions, p. III	Add "Coastal Zone Management Consistency Determination under the federal Coastal Zone Management Act, Washington State Department of Ecology."
2	§ 3.3.5.5 Bellevue Central Segment, p. 3.3-18	"Some of the Category IV wetlands are too small to be regulated."
3	§ 3.3.5.6 Bellevue Central Segment, Bypass Option 1 p. 3.3-19	Bypass Option 1 would require placement of new poles in wetland and along Kelsey and Richards creeks; same for Bypass Option 2. This would cause a permanent conversion of the plant community from a tree to shrub strata within wetlands, streams, and their associated buffers. Any trees within the managed right-of-way would be trimmed as part of the vegetation management standards, which would impact habitat and water quality functions. We are concerned that inadequate mitigation is provided for this loss of wildlife habitat and increased water temperatures.
	§ 3.3.5.7 Bellevue Central Segment, Bypass Option 2 p. 3.3-20	This would cause a permanent conversion of the plant community from a tree to shrub strata within wetlands, streams, and their associated buffers. Any trees within the managed right-of-way would be trimmed as part of the vegetation management standards, which would impact habitat and water quality functions. We are concerned that inadequate mitigation is provided for this loss of wildlife habitat and increased water temperatures.
	§ 3.3.5.9 Bellevue South Segment, Oak 1 Option p.3.3-22	This would cause a permanent conversion of the plant community from a tree to shrub strata within wetlands, streams, and their associated buffers. Any trees within the managed right-of-way would be trimmed as part of the vegetation management standards, which would impact habitat and water quality functions. We are concerned that inadequate mitigation is provided for this loss of wildlife habitat and increased water temperatures.
	§ 3.3.5.10 Bellevue South Segment, Oak 2 Option p.3.3-23	This would cause a permanent conversion of the plant community from a tree to shrub strata within wetlands, streams, and their associated buffers. Any trees within the managed right-of-way would be trimmed as part of the vegetation management standards, which would impact habitat and water quality functions. We are concerned that inadequate mitigation is provided for this loss of wildlife habitat and increased water temperatures.
	§ 3.3.5.12 Bellevue South Segment, Willow 2 Option p.3.3-25	This would cause a permanent conversion of the plant community from a tree to shrub strata within wetlands, streams, and their associated buffers. Any trees within the managed right-of-way would be trimmed as part of the vegetation management standards, which would impact habitat and water quality functions. We are concerned that inadequate mitigation is provided for this loss of wildlife habitat and increased water temperatures.

4	§ 3.3.6.1 Regulatory Requirements, p. 3.3-29	"Comply with the requirements of each applicable Partner City's critical areas ordinances..."
5	§ 3.3.6.1 PSE Vegetation Management, pp. 3.4-5 – 3.4-6	Recommend that within critical area buffers trees within Danger Zone be trimmed and not removed and that trimmed branches and trunks ≥ 4 " diameter be left in place to provide habitat.
6	§ 3.4.5.1 PSE Impacts Common to all Components, pp. 3.4-14	Alternative 1: PSE's preferred project alignment has the potential to remove up to about 4,200 trees and includes the following combination of segments and options: Richards Creek Substation + Redmond Segment + Bellevue North Segment + Bellevue Existing Corridor + Willow 2 Option + Newcastle Segment + Renton Segment. 3.4.5.8 In the Bellevue Central Segment, the Existing Corridor Option would result in the least overall tree removal, the removal of the least number of significant trees, and the removal of the least number of trees from critical areas and their buffers compared to the other two options.
7	§ 4.3.2.2, Short-Term (Construction) Impacts Common to All Segments, pp. 4.3-2—4.3-3	Mitigation also will be required for impacts under State regulations.
8		

The wetlands within this project corridor are waters of the state subject to the applicable requirements of state law (see RCW 90.48 and WAC 173.201A) and Section 401 of the Clean Water Act (33 USC §1341) and 40 CFR Section 121.2. Before any direct wetland impacts occur, the applicant shall obtain all necessary state and federal authorizations prior to beginning any ground-disturbing activities or vegetation removal. To obtain state and federal authorization, the applicant should provide:

- A jurisdictional determination from the U.S. Army Corps of Engineers stating whether the delineated wetlands are under federal jurisdiction.
- A JARPA form for impacts to jurisdictional wetlands submitted to Ecology at ecyrefedpermits@ecy.wa.gov
- A mitigation plan for unavoidable wetland impacts following the standards in *Wetland Mitigation in Washington State – Part 1: Agency Policies and Guidance* (Ecology Publication #06-06-011a).

If you have any questions or would like to discuss our comments, please call Doug Gresham at (425) 649-7199 or send an email to Doug.Gresham@ecy.wa.gov.

Sincerely,

Joe Burcar, Interim Section Manager
Shorelands and Environmental Assistance Program

By email

E-cc: Meg Bommarito, Ecology

Figure 6 Department of Ecology Letter to Heidi Bedwell regarding Ecology Comments on Energize Eastside Draft EIS - June 19, 2017