

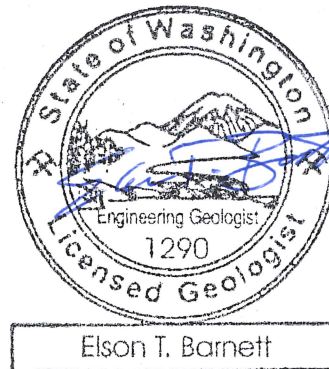
To: Kelly Purnell, Puget Sound Energy

From: Elson T. "Chip" Barnett, LG, LEG;
Andrew J. Caneday, LG, LEG

Date: September 21, 2018

File: 0186-871-07 Task 0300

Subject: Energize Eastside South Bellevue and
Geologic Hazard Critical Areas:
City of Bellevue Comment Response



INTRODUCTION

GeoEngineers, Inc. (GeoEngineers) has prepared this memorandum in response to a City of Bellevue (City) land use review comment related to the Critical Areas Report for the South Bellevue area July 11, 2017. Kelly Purnell and Kerry Kriner of Puget Sound Energy (PSE) requested this memorandum during a phone conversation with Chip Barnett on September 7, 2018. The memorandum also addresses review comments from PSE received on September 20, 2018. The City provided the following land use review comment in a memorandum dated August 14, 2018:

"Critical Areas:

Geologic Hazard Areas

Geologic Hazard Areas are not only regulated for issues of slope stability and safety, but these areas also frequently include vegetation that provides additional critical areas functions. The Critical Areas Report should quantify impacts to vegetation and their critical area functions within a Geologic Hazard Critical Area and associated buffers or structures setbacks. Appropriate mitigation is necessary to address impacts to these functions (i.e. habitat, hydrology, water quality etc.). Provide a discussion of the existing functions these areas provide and describe proposed mitigation to replace these impacted functions.

Page 24 of the South Bellevue Critical Areas Report identifies mapped areas of 40% slope but goes on to state 'many of these areas are developed and include rockeries, landscaped residential or commercial development slopes and cut slopes associated with paved roadways.' The critical areas regulations do take into consideration the presence of rockeries or other retaining features, and areas containing these features are not considered steep slopes. However, the code does not distinguish between natural and un-natural (i.e., man made slopes). Therefore, even if a slope qualifies as a steep slope but contains residential or commercial landscaping, these areas are still regulated as a steep slope and should not be removed from impact analysis.

Please revise areas excluded from analysis consistent with the critical area regulations described above. If areas continue to be excluded because of the presence of retaining features, please explain and identify which map pages these areas can be found so we can evaluate concurrence with these regulations."

COMMENT RESPONSE

We provide comment responses below for man-made areas and structure setbacks.

Man-made Areas

The City review comment states that the code does not distinguish between natural and man-made slope areas in terms of critical area regulations and asked that impacts from the transmission line project be addressed. We reviewed updated mapping from The Watershed Company provided on September 12, 2018 that includes man-made areas previously removed from our analysis for geologic hazard critical areas. The man-made areas include cut and fill slopes, rockeries and walls and are listed below:

- North of 132nd Avenue SE.
- East of the intersection of Somerset Drive SE and 134th Place SE, north to Somerset Place SE.
- East of the intersection of Somerset Drive SE and Somerset Boulevard SE.
- East of 136th Place SE between SE 43rd Place and SE 43rd Street; and two trees between this area and the intersection of Somerset Drive SE and Somerset Boulevard SE.
- North of the intersection of SE 43rd Street and the PSE right-of-way (ROW).
- South of SE 42nd Street.
- Between SE 37th Street and SE 36th Street.
- East of SE 32nd Street.
- The Richards Creek Substation and Lakeside Substation area.
- Access south of SE 26th Street.
- Cut slopes at Coal Creek Parkway SE.

Each of these man-made areas listed above were previously cleared of vegetation, including considerable grading, during original site construction resulting in little (or no) tree removal in these previously disturbed areas. Previous vegetation removal and grading did not cause wide-spread slope instability or erosion.

The proposed installation of new poles will be less intrusive than the grading and clearing activities associated with the original construction of the man-made areas resulting in little (or no) tree removal in these previously disturbed areas. Furthermore, Best Management Practices (BMPs) proposed under this permit will further reduce the potential for instability and erosion compared to the original construction. As outlined in Land Use Code (LUC) 20.25H.125, pole type construction is the preferred method of construction within steep slope areas. Pole installation has a much smaller footprint than residential or commercial building development contemplated in the regulations.

In localized areas, we anticipate a temporary reduction in evapotranspiration of 50 percent in the first year from removal of vegetation. Our estimate is based on the planned use of BMPs to reduce soil erosion and replanting of shrubs and trees conducive to an existing utility corridor. We anticipate that the potential impacts from the proposed vegetation removal will be considerably less than the impacts during original construction of the man-made areas. During original construction, the impact would have likely been reduction of

evapotranspiration of 100 percent locally for a period of more than 1 year depending on how quickly the disturbed ground was replanted. We also anticipate no reduction in slope stability from tree removal because the root mass will not be removed, and replanted trees and shrubs should be established well before root degradation.

Structure Setbacks

Although PSE poles are not regulated as structures, we have provided guidance for structure setbacks and tree removal as requested. We reviewed the location of each proposed pole relative to the location of mapped critical areas provided by the Watershed Company. The critical area buffer and structure setback from the City code for landslide hazards and steep slopes is provided in Table 1 below:

TABLE 1: SELECTED PORTION OF CITY OF BELLEVUE CODE

Critical Area Category or Type	Critical Area Buffer Width	Structure Setback	Modification of Buffer or Setback
Landslide hazards	Toe-of-slope: None	Toe-of-slope: 75 feet	LUC 20.25H.120
	Top-of-slope: 50 feet	Top-of-slope: None	LUC 20.25H.230
Steep slopes	Toe-of-slope: None	Toe-of-slope: 75 feet	LUC 20.25H.120
	Top-of-slope: 50 feet	Top-of-slope: None	LUC 20.25H.230

No poles are proposed within the landslide hazard areas, landslide hazard area buffers, or their setbacks. Table 2 below provides a description of pole locations that are within the mapped areas downslope of the steep slope 75-foot setback areas and our conclusions and recommendations. Some of the pole locations described in Table 2 include replacement of existing poles within the 75-foot setback. It is our opinion that by using standard BMPs the proposed pole installation or replacement will not impact critical area function. The installation of poles on sloped areas is similar to the installation of soldier piles or soil nails and locally reduces the potential for slope movement or instability. Therefore, the poles in the 75-foot setback areas described below should not increase the risk for slope instability or adverse impacts to geologic hazard areas. The table below identifies sites from north to south. In general, for the areas described below, we recommend that standard BMPs are used and soil cuttings for pole installation are disposed of or end-hauled to a stable location.

TABLE 2: SUMMARY TABLE OF POLES WITHIN MAPPED GEOLOGIC HAZARDS AND SETBACKS

75-foot Structure Setback downslope from Steep Slope	Conclusion and Recommendation
Steep slopes 150 feet north of ROW intersection with SE 43 rd Street	Replacement poles 8/2 locations are approximately 30 feet northwest and downslope of the steep slopes that include landscaped residential cut and fill slopes. The ROW appears to be regularly maintained and is vegetated with English ivy. Replacement of the poles will continue to provide anchoring of the slope, similar to the existing poles. We recommend the use of track-mounted or limited access equipment for the excavation for the pole west of the park.
Cut slope on the east side of SE 44 th Street.	Replacement poles 8/1 are located at the base of the cut slope along SE 44 th Street. Cut slope appears to be stable. Access will be from the paved areas of the roadway or a paved residential driveway limiting potential impact.
Cut slope on the east side of SE 44 th Street.	Proposed pole 7/18 is located downslope on the west side of roadway, approximately 70 feet away from the cut slope. The cut slope appears stable. Access will be from the paved areas away from the cut slope limiting potential impact the cut slope.

75-foot Structure Setback downslope from Steep Slope	Conclusion and Recommendation
Landscape retaining wall near 134 th Place SE and Somerset Drive SE	Replacement poles 7/16 are located within ROW 150 feet east of the roadway intersection. The poles are located upslope and downslope of the retaining wall. The retaining wall appears stable. Access will be limited through residential areas. We recommend the use of track-mounted or limited access equipment for the excavation for the poles.
Steep slope in residential backyard approximately 30 feet upslope of 132 nd Avenue SE	The replacement poles 7/13 are downslope or near the toe of the mapped steep slope that is stable. The pole closest to the steep slope is approximately 40 feet downslope from the mapped toe of the slope. We recommend access occurs from the roadway on track-mounted or limited access equipment for the excavation of the poles to reduce the potential impact to the steep slope area.
Cut slope adjacent to PSE Somerset Substation	Three proposed poles 6/7 are located approximately 170 feet east of Coal Creek Parkway and approximately 30 feet east of the PSE Somerset Substation. Two poles 6/7 are located 20 feet downslope of the stable cut slope. We recommend the use of track-mounted or limited access equipment for pole excavation to reduce the potential impact to the cut slope.

It is our opinion that the poles within the setback areas described in the table above can be installed with a low risk of impact to the geologic hazard critical area.

We appreciate the opportunity to assist you on this project. Please contact us if you have any questions concerning this memorandum or our services.

ETB:AJC:cam:leh

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