

## Impact on Scenic and Aesthetic Views Analysis Extended Beyond PSE Study Area

### Abstract

Dean Apostol, scenic and environmental consultant, summarizes the principles of assessing visual impacts and determining the level of significance in his publication, *The Renewable Energy Landscape*.<sup>1</sup> The normal criteria used is:

$$\text{Visibility} + \text{Negative Visual Contrast} + \text{Sensitivity} = \text{level of impact}$$

*Visibility* refers to how much a view is seen and by how many people. *Negative visual contrast* is measured against the “desired visual character which can be natural or cultural or a combination of both.” *Sensitivity* includes what is expected to be seen, how long it is viewed and the importance of the viewpoint to the observer. The land on the Eastside, where PSE proposes to construct a 230kV transmission line, has multiple locations that afford scenic views. The area is also dominated by residential land use zones, so the concept of scenic visual impacts is an important consideration. PSE’s proposal violates the Land Use Codes of the impacted cities, which stipulate that any “design is compatible with and responds to the existing or intended character, appearance, quality of development and physical characteristics of the subject property and immediate vicinity.” (Bellevue LUC 20.30B.140B)

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[https://www.researchgate.net/publication/307633587\\_The\\_Renewable\\_Energy\\_Landscape\\_Preserving\\_Scenic\\_Views\\_in\\_our\\_Sustainable\\_Future](https://www.researchgate.net/publication/307633587_The_Renewable_Energy_Landscape_Preserving_Scenic_Views_in_our_Sustainable_Future)

## 1. Data on Population Affected by Proposed Energize Eastside

The study area for the visual analysis of the Energize Eastside project was *limited to 0.25 miles* from the edge of the existing transmission corridor. Areas west of I-405 were excluded. The EIS stated: "*while the project would be visible at greater distances, significant visual impacts are not probable given the project's scale relative to its largely mixed urban context.*"<sup>2</sup> This statement does not acknowledge the predominant residential land use in the proposed transmission corridor. Given the numerous locations known for their scenic views on the Eastside, for example the hilly terrain in the Somerset neighborhood, the view from Bellevue City Hall, the park at Lake Boren, or the view from the Woodridge or Enatai neighborhoods looking southeast - the basis of this analysis is shortsighted.

Consider this analysis from the map illustrating the population in *block groups* according to the distance from the transmission corridor.

The number of residents (2010 census) whose scenic or aesthetic views would be impacted along the originally proposed 16 miles of the Energize Eastside Project would be<sup>3</sup>:

- 122,818 residents at *0.5 miles*, and
- 184,434 residents at *1 mile* from the powerline and
- **325,562** residents that are within *2 miles* of the transmission line.

The number of residents (2010 census) whose scenic or aesthetic views would be impacted number along the 3.3 miles of the South Bellevue segment would be<sup>4</sup>:

- 25,993 residents at *0.5 miles*, and
- 6,267 residents at *1 mile* from the powerline and
- **54,220** residents that are within *2 miles* of the transmission line

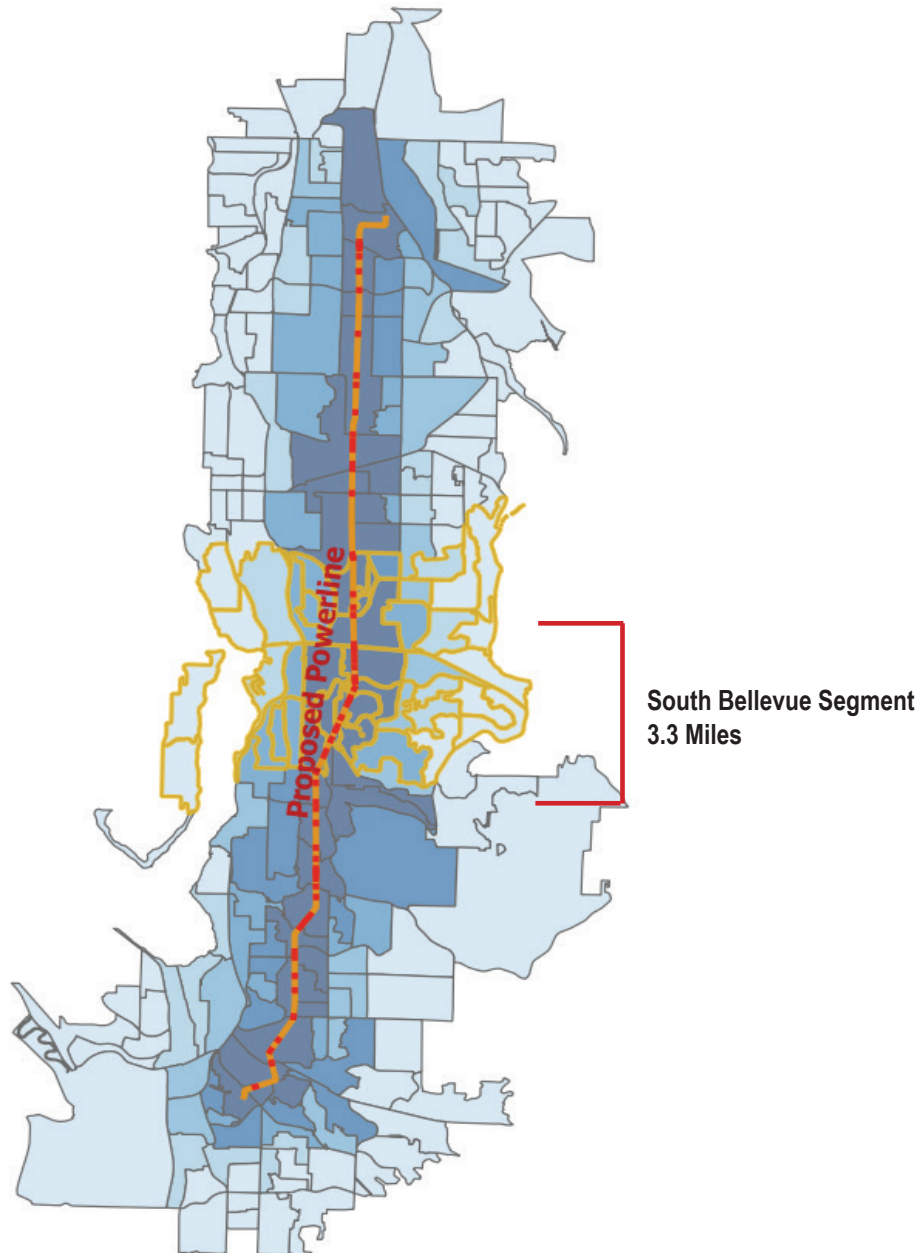
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<sup>2</sup> [http://www.energizeeastsideis.org/uploads/4/7/3/1/47314045/section\\_3.2\\_scenic\\_views\\_and\\_the\\_aesthetic\\_environment.pdf](http://www.energizeeastsideis.org/uploads/4/7/3/1/47314045/section_3.2_scenic_views_and_the_aesthetic_environment.pdf) page 3

<sup>3</sup> See Appendix: Visual Impact Energize Eastside – 16 mile

<sup>4</sup> See Appendix: Visual Impact South Bellevue Segment – 3.3 mile

Block groups by distance band based on closest edge of block group to powerline



**Figure 1** Number of residents, by blockgroups (represented by shades of blue) according to distance from powerline,<sup>5</sup> whose scenic and aesthetic views would be impacted. (Red dashes on the map represent where powerline crosses public-street ROWs.) Map and data provided by Deron Ferguson

<sup>5</sup> <https://www.kingcounty.gov/services/gis/GISData.aspx>

## 2. The Reality of Scenic Visual Impacts

Few of these Eastside residents would agree with the EIS statement that "*significant scenic visual impacts are not probable*". Whether a homeowner lives up hill from the proposed 230kV transmission line or downhill from the corridor - the towering poles will be visible against the skyline. And for residents who are driving or walking even within 2-3 miles of the corridor, the transmission poles will be visible. Sensitivity includes the expectations of what people view, how long they view it and the importance of the view. Sensitivity is "the ability of viewers to see and care about a project's impacts. The sensitivity to impact is based on viewer sensitivity to changes in the visual character of visual resources. Viewers are either sensitive or insensitive to impacts"<sup>7</sup>

The proposed "clear zone" cutting of trees and landscaping will further expose the industrial sized transmission towers. Along the Eastside there are variations of **scenic view** possibilities: views of the lake, the Seattle skyline and Olympic Mountains from Bellevue hillsides, views of greenbelts overlooking nature preserves like Coal Creek, views from parks and lakes such as Lake Boren. All of these views would be impacted by the construction of this proposed transmission line, most of which are well beyond the .25 mile powerline-buffer defined as the study area.

It is acknowledged in the FEIS that *viewer sensitivity* is high in the Somerset neighborhood and the Coal Creek Natural Area.<sup>8</sup> The views from this residential neighborhood are Lake Washington, the Seattle skyline and the Olympics to the west, downtown Bellevue to the north and Mercer Island, the Olympics and Lake Washington to the south. The Somerset neighborhood is comprised of height-restricted features dictated by covenants; the **contrast** between the height of the homes and the significantly taller 230kV transmission line poles would be dramatic. The impacts to the aesthetic environment would be significant whether viewed from downhill of the corridor or farther uphill. The Coal Creek Natural Area is the only recreational resource identified by the City of Bellevue as being used for its natural setting.<sup>9</sup> The tree removal in this area would diminish this natural setting.

In Newcastle, the majority of the project would be on a ridge and therefore very visible by much of the Newcastle population.<sup>10</sup> Areas such as Lake Boren Park, May Creek Natural Area, Cross Town Trail and Olympus Trail would be aesthetically impacted with the industrial sized power poles in view. Viewer sensitivity is high in this area, first because of views of the Cascades, the Olympics and, in some places, Mt. Rainier, and second because of Newcastle's policies regarding the aesthetic impacts from transmission lines. (Policy UT-P10, UT-P14, City of Newcastle 2016).

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<sup>7</sup> United States Department of Transportation, Federal Highway Administration (FHWA). 2015. *Guidelines for the Visual Impact Assessment of Highway Projects*. Washington, DC: USDOT FHWA. P 6.1

<sup>8</sup> [http://www.energizeeastsideeis.org/uploads/4/7/3/1/47314045/chapter\\_4.2\\_scenic\\_views\\_and\\_aesthetics.pdf](http://www.energizeeastsideeis.org/uploads/4/7/3/1/47314045/chapter_4.2_scenic_views_and_aesthetics.pdf) page 28

<sup>9</sup> [http://www.energizeeastsideeis.org/uploads/4/7/3/1/47314045/chapter\\_4.2\\_scenic\\_views\\_and\\_aesthetics.pdf](http://www.energizeeastsideeis.org/uploads/4/7/3/1/47314045/chapter_4.2_scenic_views_and_aesthetics.pdf) page 30

<sup>10</sup> [http://www.energizeeastsideeis.org/uploads/4/7/3/1/47314045/chapter\\_4.2\\_scenic\\_views\\_and\\_aesthetics.pdf](http://www.energizeeastsideeis.org/uploads/4/7/3/1/47314045/chapter_4.2_scenic_views_and_aesthetics.pdf) page 37

### 3. View Duration and Distance

*View duration* is discussed in the Vissering<sup>11</sup> document referenced in the EIS.<sup>12</sup> The document refers to utility poles as being similar to wind turbines in height and scale. And it states that the longer a "project" is visible to the viewer, the greater the sensitivity will be. The author maintains that "between 1/2 and 4 miles away, landscapes are often an integral part of a scenic view. And depending on the sensitivity of the viewing area, the orientation of views and the size of the project, adverse visual impacts can occur even at distances up to 8 or 10 miles away"<sup>13</sup> This contradicts the EIS statement that the impact on views from a distance is not significant. Judging the impact of views is subjective and not grounded in any objective measurement.

### 4. The Aesthetic Viewpoint

The concept of scenic views is obvious (the view of Mt. Rainier or Lake Washington), but the concept of an **aesthetic viewpoint** is more complicated.

Residents driving home day after day are very sensitive to what they observe in their community, their neighborhood, or in their backyard. *Viewer sensitivity* to the aesthetic environment involves what the viewer (resident) expects to see or prefers to see at that location<sup>14</sup> For example, a 100-foot transmission pole in an otherwise natural setting would not be preferred by most viewers. An industrial-sized power pole in a landscaped residential garden would not be preferred. In the predominantly residential land-use zones that comprise the transmission corridor, residents have landscaped and sited their homes to *camouflage* the view of the existing 115kV power poles. With the proposed *clear-zone* construction, the landscaping would be removed. Mitigation with 12-foot tall trees would not provide an adequate substitute for a 40-year-old well-maintained, mature, tree canopy.

The contrast of the predominately low profile of the built environment (homes) with the height and size of the proposed power poles would be severe.

Consideration should also be given to the aesthetic viewpoint at **ground level**. The damage from clearing land and construction on residential properties in the corridor would be extremely significant. A power pole that is 3 feet to 5 feet in diameter at the base when placed in a residential backyard will never be aesthetically pleasing. This would be a **long-term viewing impact to highly sensitive viewers**. The response to this concern in the FEIS was that: "*the analysis did not focus on ground level views (which we*

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<sup>11</sup> <https://www.cesa.org/assets/2011-Files/States-Advancing-Wind-2/CESA-Visual-Impacts-Methodology-May2011.pdf> page 25

<sup>12</sup> [http://www.energizeeastsideeis.org/uploads/4/7/3/1/47314045/section\\_3.2\\_scenic\\_views\\_and\\_the\\_aesthetic\\_environment.pdf](http://www.energizeeastsideeis.org/uploads/4/7/3/1/47314045/section_3.2_scenic_views_and_the_aesthetic_environment.pdf) page 25

<sup>13</sup> <https://www.cesa.org/assets/2011-Files/States-Advancing-Wind-2/CESA-Visual-Impacts-Methodology-May2011.pdf> page 21

<sup>14</sup> [http://www.energizeeastsideeis.org/uploads/4/7/3/1/47314045/section\\_3.2\\_scenic\\_views\\_and\\_the\\_aesthetic\\_environment.pdf](http://www.energizeeastsideeis.org/uploads/4/7/3/1/47314045/section_3.2_scenic_views_and_the_aesthetic_environment.pdf) page 18

*interpret to mean views looking down at the base of the poles)...<sup>15</sup> The EIS further acknowledges that the larger foundations would be noticeable when first installed and more likely the closer one is to the corridor, but that this apparently did not warrant a separate discussion!*

The residents have chosen to live in Eastside neighborhoods because of the aesthetic environment, and often, because of the scenic views. If the presumed "need" for reliable electricity is in the commercial district of downtown Bellevue, there is no zoning hierarchy justification for building Energize Eastside in residential neighborhoods. This project should be located in the land-use district that requires additional service.

## 5. Conclusion

To limit the study area for scenic and aesthetic views to 0.25 miles is shortsighted. The areas impacted extend two to five miles from the transmission corridor. There would be a dramatic visual *contrast* between power poles that are 100-130-foot tall and 1-2 story residences. The cities, in particular Bellevue and Newcastle, are fortunate to have established, well-maintained neighborhoods close to the city centers. The aesthetic impact of the proposed PSE project would change the intended character of the residentially zoned districts in Bellevue and Newcastle. The land use codes of these cities should be respected. For these reasons PSE's proposal should be denied.

## 6. Appendix: Data Methodology and Photos

*Sources for data: (produced by Deron Ferguson)*

Data Element	Source File/Variable	Source Organization
Population (2010 Census)	sf1_2010_totpopp0010001	<a href="ftp://ftp.kingcounty.gov/gis-web/GISData/admin_SHP.zip">ftp://ftp.kingcounty.gov/gis-web/GISData/admin_SHP.zip</a>
Housing Units (2010 Census)	sf1_2010_tothsgunitsh00010001	<a href="ftp://ftp.kingcounty.gov/gis-web/GISData/admin_SHP.zip">ftp://ftp.kingcounty.gov/gis-web/GISData/admin_SHP.zip</a>
Distance Band	Calculated	CENSE
Block Groups (map layer)	Blkgroup10_shore.shp	<a href="ftp://ftp.kingcounty.gov/gis-web/GISData/admin_SHP.zip">ftp://ftp.kingcounty.gov/gis-web/GISData/admin_SHP.zip</a>
Powerline (map layer)	Manually digitized*	CENSE

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<sup>15</sup> [http://www.energizeeastsideeis.org/uploads/4/7/3/1/47314045/appendix\\_k\\_phase\\_2\\_comments\\_and\\_responses.pdf](http://www.energizeeastsideeis.org/uploads/4/7/3/1/47314045/appendix_k_phase_2_comments_and_responses.pdf) page K-187

\*Spatial data is not available from PSE for the proposed power line, so CENSE digitized its route based on the existing route as determined by aerial imagery and proximity to parcel boundaries, as well as other published non-spatial data from PSE (the Environmental Impact Statement, permit applications, etc.).

<b>VISUAL IMPACT ENERGIZE EASTSIDE - 16 MILES</b>					
Distance based on closest edge of blockgroup to powerline					
<b>2010 Census Total Population and Number of Housing Units</b>				<b>Cumulative</b>	
<b>Distance Band</b>	<b>Number of block groups</b>	<b>Total 2010 Population</b>	<b>Total 2010 Housing Units</b>	<b>Population</b>	<b>Housing Units</b>
0.1 miles	37	54,399	23,517	54,399	23,517
0.25 miles	18	29,431	12,247	83,830	35,764
0.5 miles	27	38,988	16,676	122,818	52,440
0.75 miles	19	25,832	11,569	148,650	64,009
1 mile	25	35,784	16,442	184,434	80,451
2 miles	93	141,128	64,749	325,562	145,200
Total		325,562	145,200		

<b>VISUAL IMPACT SOUTH BELLEVUE SEGMENT - 3.3 MILES</b>					
Distance based on closest edge of blockgroup to powerline					
<b>2010 Census Total Population and Number of Housing Units</b>				<b>Cumulative</b>	
<b>Distance Band</b>	<b>Number of block groups</b>	<b>Total 2010 Population</b>	<b>Total 2010 Housing Units</b>	<b>Population</b>	<b>Housing Units</b>
0.1 miles	10	14,607	6,115	14,607	6,115
0.25 miles	1	1,151	400	15,758	6,515
0.5 miles	8	10,235	4,176	25,993	10,691
0.75 miles	3	3,208	1,309	29,201	12,000
1 mile	6	7,066	2,889	36,267	14,889
2 miles	11	17,953	6,880	54,220	21,769
Total		54,220	21,769		



Existing and proposed conditions looking west from 4730 Somerset Dr SE, Bellevue <sup>12</sup>



Existing Pole Height: ~44 feet



Proposed Pole Height: ~75 feet

**Figure 1**

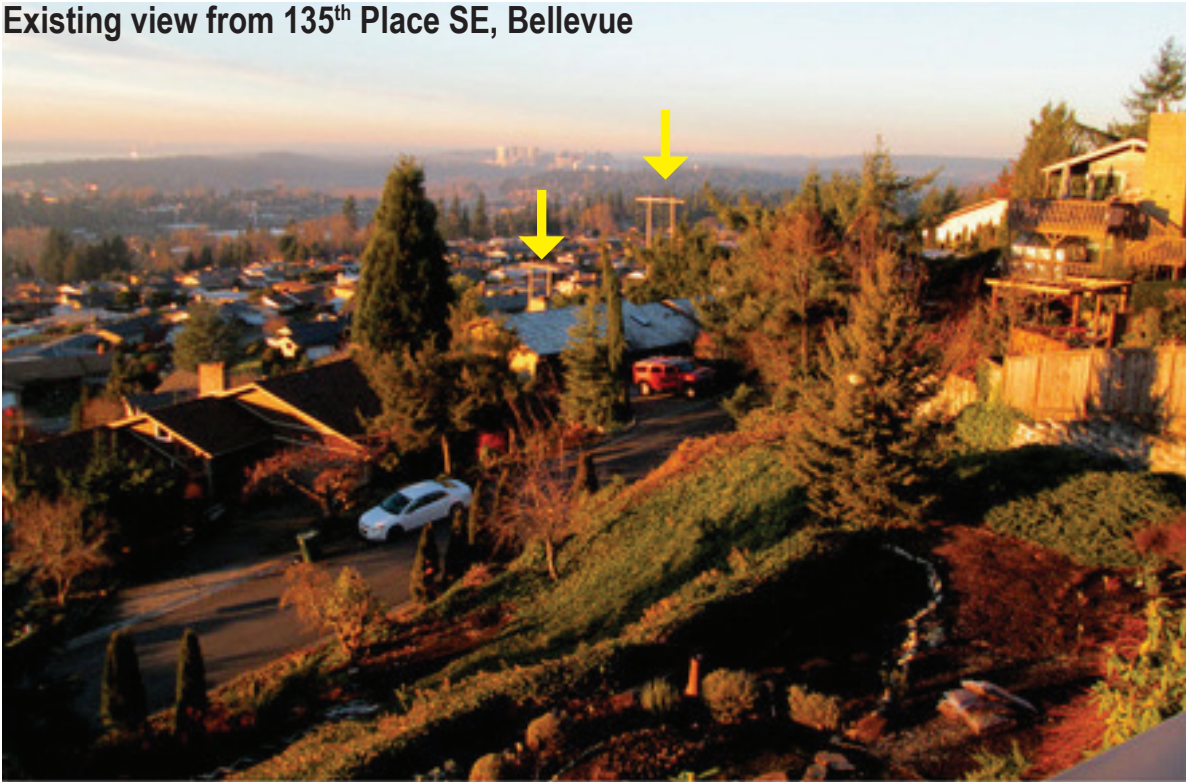
*Top photo of existing 45-foot poles with horizontally-oriented wires that are viewed against land. Bottom photo-simulation of proposed 75-foot poles with vertically-stacked wires viewed against skyline.*

*The 230kV power poles in a residential neighborhood would create significant impact on viewer (resident) sensitivity and dramatic changes to the aesthetic environment. The result would be a severe alteration to the existing character of the neighborhood.*

<sup>12</sup> [www.energizeeastsideis.org/uploads/4/7/3/1/47314045/chapter\\_4.2\\_scenic\\_views\\_and\\_aesthetics.pdf](http://www.energizeeastsideis.org/uploads/4/7/3/1/47314045/chapter_4.2_scenic_views_and_aesthetics.pdf) (p 4-2.34)



Existing view from 135<sup>th</sup> Place SE, Bellevue



photos by Karen Esajian, Somerset resident



Figure 2

*Top photo: Arrows mark existing 115KV power poles. Bottom photo: Arrows mark Seattle City Light power poles, that are highly visible at a distance of 1.7 miles. These poles are similar to the poles PSE would use in Somerset.*

Existing views from Somerset residential area



photos by Karen Esayan, Somerset resident

Figure 3

Top photo: View of downtown Bellevue from Somerset neighborhood. Bottom photo: View of Somerset Recreation Club. Proposed poles would be 20 feet taller (36%) than existing 55-foot poles shown in photos. Not only would the new poles be taller, they would have more girth. Diameter of existing poles is 1.5 feet. Diameter of proposed poles is 4-5 feet. The proposed poles would be far more imposing structures than existing wooden poles. photos by Karen Esayan, Somerset resident



Existing and proposed conditions looking NE from 8446 128th<sup>th</sup> Ave. SE Newcastle<sup>13</sup>



Existing Pole Height: ~55 feet



Proposed Pole Height: ~95 feet

**Figure 4**

*Top photo of existing 55-foot poles with horizontally-oriented wires. Bottom photo-simulation of proposed 95-foot poles with vertically-stacked wires.*

*These photos illustrate the **contrast** in size between the homes and the proposed 95-foot power poles. A 230kV transmission line would diminish the residential character of this street and intensify the view of the utility corridor*

13 [www.energizeeastsideis.org/uploads/4/7/3/1/47314045/chapter\\_4.2\\_scenic\\_views\\_and\\_aesthetics.pdf](http://www.energizeeastsideis.org/uploads/4/7/3/1/47314045/chapter_4.2_scenic_views_and_aesthetics.pdf) (page 4.2-38)