Chapter 1: Response to information requests

Chapter 2: GeoRoute Model

- Review criteria
- Discuss weighting for avoidance and opportunity areas
- Run model and discuss route options
Information requested at Meeting #2

- Existing PSE and Seattle City Light transmission corridor information
- Landslide activity along the Sammamish-Beverly corridor
- GeoRoute Model grid size and past uses
- EMF as a criteria
Chapter 1: Responses

Existing PSE and Seattle City Light rights of way
Seattle City Light corridor

- Acquired in the 1930s to bring power from the Upper Skagit River Dams to City of Seattle
- Seattle City Light currently maintains a double-circuit 230 kV line within the western portion of their easement
- The corridor running through Redmond and Kirkland is 150 feet wide
- Easements:
  - Some allow up to four towers for electrical transmission line purposes
  - Others are limited only to aerial trespass
  - Most do not allow buildings within the transmission corridor and provide for vegetation management
Chapter 1: Responses

Lattice towers range from approximately 120 feet to 150 feet in height.

Note: PSE is uncertain of exact heights for the Redmond-Kirkland corridor.
Seattle City Light corridor – east of 124th Avenue Northeast
Chapter 1: Responses

Seattle City Light corridor – near the intersection of 124th Avenue Northeast and Northeast 124th Street
Questions for PSE to answer

1) Will Seattle City Light allow us to utilize a portion of their transmission line corridor?
   - Our design proposal would need to be compatible with Seattle City Light’s plans for future use

2) Are there encroachments in the corridor?
Chapter 1: Responses

Puget Sound Energy corridor

- Acquired in 1929 to bring power to the Eastside communities
- The corridor is presently occupied by a 115 kV and 230 kV line
- The corridor running through Redmond and Kirkland is 100 feet wide
- Easements:
  - Limited to two electrical transmission systems
  - Most easements restrict the owner’s use of the property and provide for vegetation management
Chapter 1: Responses

H-frame poles approximately 60-70 feet tall

100 ft.
Puget Sound Energy corridor – near the intersection of 136th Avenue Northeast and Northeast 104th Street
Puget Sound Energy corridor – west of 137th Place Northeast
Puget Sound Energy corridor – near Northeast 124th Street
Challenges of using the PSE corridor

- The PSE easement is at capacity (only allows for two systems)
- Either the existing PSE easement needs to be re-negotiated to allow for another system OR additional right of way needs to be acquired
- The width of the additional right of way is dependent upon design requirements to meet electrical safety codes
Landslide activity along the Sammamish-Beverly corridor

- No record of landslides or erosion since 1997
- During construction projects in 2005 and 2008, a potential erosion area was identified at the south end of the line
  - Applied preventative erosion control measures for construction
  - Installed a permanent drain pipe from the corridor to the bottom of the hill
- PSE Vegetation Management teams inspect the corridor yearly and report signs of erosion
GeoRoute Model size and uses

- Grid size is 10 feet

- GeoRoute Model has evolved since used on past PSE projects
  - Other transmission siting projects have used similar GIS-based routing tools, which are based on the same GIS methodology
    - Example: EPRI-GTC siting model in Georgia

- EMF will not be a siting criteria since there are no federal or state regulatory limits
Chapter 1: Response to information requests

Chapter 2: GeoRoute Model

• Review model
• Review criteria
• Discuss weighting for avoidance and opportunity areas
• Run model and discuss route options
Challenging siting with complex issues
Promotes discussion of alternative scenarios
Identify a route the SAG and PSE can support
People make decisions NOT models

- Balance values of the community
- Priority of the data used in the model
- How to interpret/ use the results
Chapter 2: GeoRoute Model

Geo Route
115 kV Transmission Line Route Study
Sammamish – Juanita

AVOIDANCE AREAS
IDENTIFY, WEIGHT, & MAP

OPPORTUNITIES
IDENTIFY, WEIGHT, & MAP

WEIGHTED OPPORTUNITY AREAS
COMMUNITY INPUT

WEIGHTED AVOIDANCE AREAS
COMMUNITY INPUT

COMBINED OPPORTUNITIES & AVOIDANCE AREAS
IDENTIFY, WEIGHT, & MAP

SAMPLE

OUTPUT: MAP OF ROUTE

Locating a route for a 115 kV transmission line that is compatible with:
- Sensitive Land Uses
- Sensitive Natural Features
- Engineering Design and Safety Standards
- Community Values
### Opportunities Data Layers

<table>
<thead>
<tr>
<th>Data Reviewed, Used for Modeling</th>
<th>Data Reviewed, Not Used for Modeling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial/Industrial Zoning</td>
<td>Open Vegetative Cover</td>
</tr>
<tr>
<td>Arterial Street</td>
<td>Community Plan Compatibility</td>
</tr>
<tr>
<td>Trails R/W</td>
<td></td>
</tr>
<tr>
<td>Railroad R/W</td>
<td></td>
</tr>
<tr>
<td>Parcel size &gt; 5 acres</td>
<td></td>
</tr>
<tr>
<td>Existing PSE Rights-of-Way</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 2: GeoRoute Model

Arterial Streets
Chapter 2: GeoRoute Model

Industrial/Commercial Zoning
Chapter 2: GeoRoute Model

= Route
Chapter 2: GeoRoute Model

Engineering Criteria Most Important, No Opportunities Considered
Chapter 2: GeoRoute Model

Engineering Criteria Most Important, Opportunities Considered

Potential Route - Opportunities Considered

Potential Route - No Opportunities Considered

Juilleta Substation

Semnannich Substation
Chapter 2: GeoRoute Model

Natural Environment Criteria Most Important, No Opportunities Considered
Natural Environment Criteria Most Important, Opportunities Considered
Chapter 3: GeoRoute Selection Model

SAG Input?
WSDOT Master Plan and Totem Lake

- I-405, Bellevue to Lynnwood Improvement Project

- Red lines show rights of way
Public comment from audience
Next steps

• November 17 meeting:
  • Develop and discuss any additional route alternatives
  • Narrow options to three route alternatives

• PSE will host an open house in December to ask the public for feedback on three potential route alternatives
Questions?

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Thank You!