

**EXH. DRK-24
DOCKETS UE-22 ___/UG-22 ___
2022 PSE GENERAL RATE CASE
WITNESS: DAN'L R. KOCH**

**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY,

Respondent.

**Docket UE-22 ___
Docket UG-22 ___**

**TWENTY-THIRD EXHIBIT (NONCONFIDENTIAL) TO THE
PREFILED DIRECT TESTIMONY OF**

DAN'L R. KOCH

ON BEHALF OF PUGET SOUND ENERGY

JANUARY 31, 2022

Richards Creek Substation



EMC Informational

February 27, 2020

Kelly Purnell
Project Manager III

Recommendation

Proceed with option 1, the original 2020 construction scope that includes:

- All mass site clearing and grading
- Retaining walls
- Drainage improvements
- All Foundations (*including* seismic isolation foundations for transformer banks)
- SPCC improvements
- Driveway improvements
- Cable trench
- Ground grid
- Conduits
- Culvert replacement and stream restoration
- Water main relocation

Option 2: Phased Scope

Original Scope except for seismic isolation foundations and stream and culvert:

2020

- All mass site clearing and grading
- Retaining walls
- Drainage improvements
- Foundations *excluding* transformer seismic isolation
- SPCC improvements
- Driveway improvements
- Cable trench
- Ground grid
- Conduits

2021

- Seismic isolation foundations for transformer banks
- Stream restoration and culvert replacement
- Watermain relocation

Option 3: Phased Scope

Mass site grading, walls, drainage and driveway only:

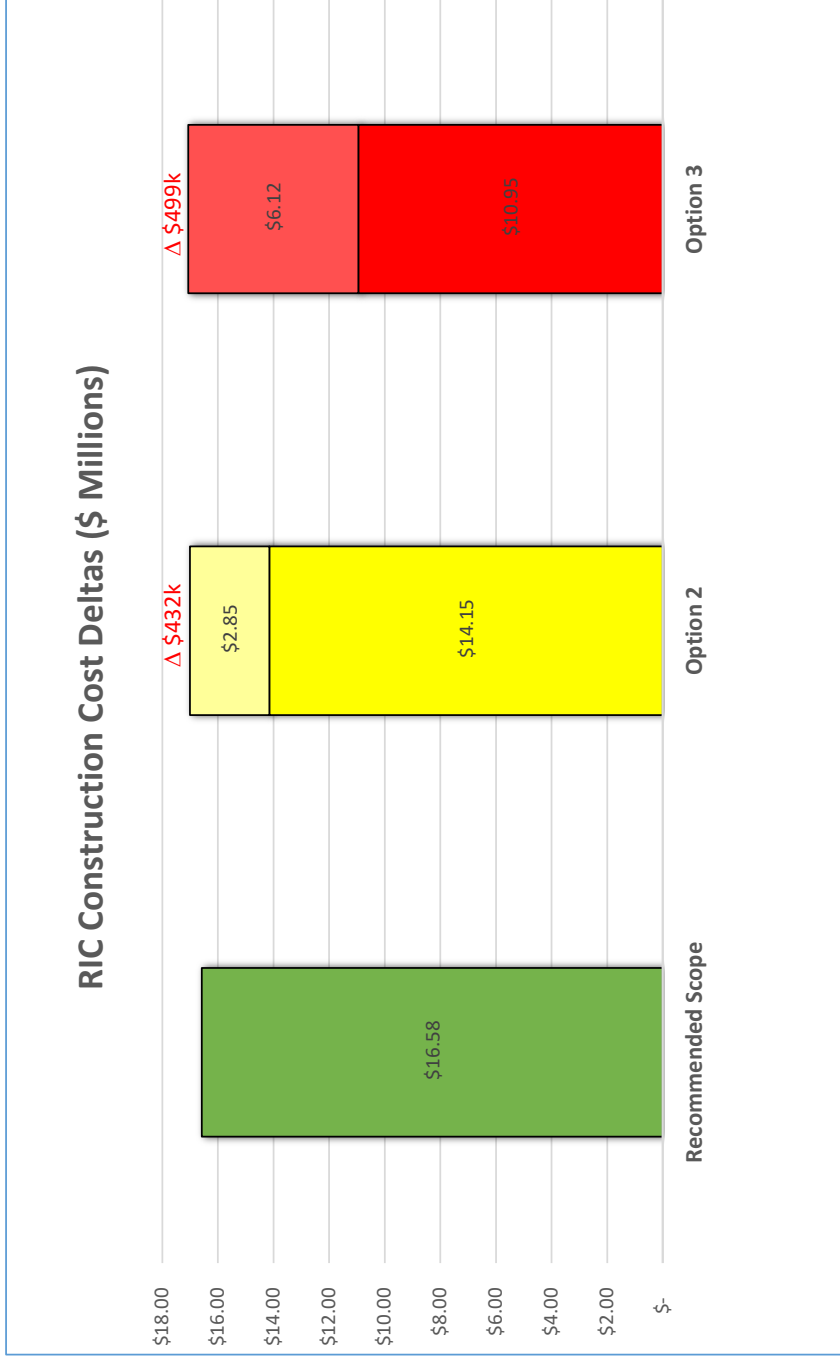
2020

- All mass site clearing and grading
- Retaining walls
- Drainage improvements
- Driveway improvements

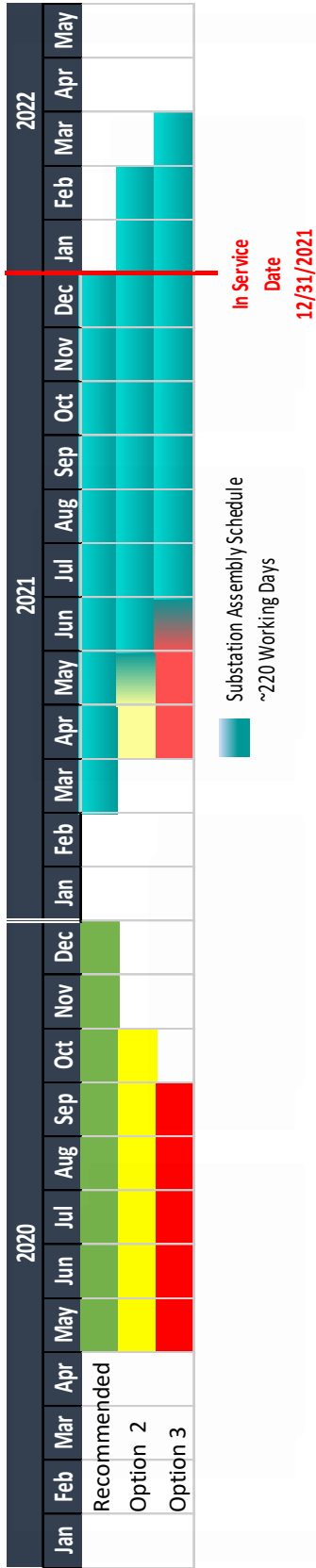
2021

- Foundations *including* seismic isolation for transformer banks #1 and #2
- Cable trench
- Ground grid
- Conduits
- SPCC improvements
- Stream restoration and culvert replacement
- Watermain relocation







Cost Delta of Considered Options



Schedule Impacts of Considered Options



Construction Options Risks

Options	Description of Risks	Schedule Impacts	Cost Impacts	Cost Δ (Total Cost)
Recommended Option	* Energize Eastside Permitting			\$0 (\$16.58M)
Option 2	* Additional 1-2 months of civil/subsurface * Added cost for mob/demob * Added 3% escalation cost * Pushes Energize Eastside TAL-RIC in-service date to 2022			\$432K (\$17.01M)
Option 3	* Additional 3 months of civil/subsurface * Added cost for mob/demob * Added 6% escalation cost * Pushes Energize Eastside TAL-RIC in-service date to 2022			\$499K (\$17.07M)

*Option 4: Delay all construction to 2021 (~Δ \$1M)



Permit Status

South Segment

Permits Obtained

- Bellevue CUP (RIC substation)
- Bellevue Critical Areas Land Use Permit
- Renton CUP
- Renton Shoreline Exemption

Permits In Process – Issued later this year

- Newcastle CUP and related construction permits
- Bellevue and Renton construction permits for Transmission Lines

Permits In Process – Issued before RIC construction

- Bellevue Clear & Grade, Building, and Utility Extension permits
- Ecology NPDES general permit
- Section 404/401 and Hydraulic Project Approval (Related to culvert work)

North Segment

- Permit applications for North Bellevue and Redmond will be submitted this spring

Recommendation

Proceed with option 1, the original 2020 construction scope that includes:

- All mass site clearing and grading
- Retaining walls
- Drainage improvements
- All Foundations (*including* seismic isolation foundations for transformer banks)
- SPCC improvements
- Driveway improvements
- Cable trench
- Ground grid
- Conduits
- Culvert replacement and stream restoration
- Water main relocation

Appendix

Options Cost Breakdown

Options	Scope	Estimated Costs (Mil) for limited scope		Total Cost (for limited scope only) without contingency	Risks	Civil Work Duration	PSE Crew Durations
		2020	2021				
Option 1	As planned, all work below ground in 2020	\$15,256,179			Stranded assets in case project in-service date is postponed beyond 2021. This is due to the TAL-RIC 2020 HV line not being energized by 2021 due to permitting or other factors. Substation site would not be "used and useful" without energization	12 weeks	
	Civil +EA below ground work						
	Stream culvert work	\$835,766		\$16,574,703			
	Total With Escalation						
Option 2	Below ground work 2020	\$13,741,331			Cost wise will be saving only 10% of the cost in yr 2020 ; double mob/demob for min amount of work Additional grading might be required. Excavation for foundations would need to be left open and covered by plates, or filled in and re-excavated Would require additional weeks to excavate and install seismic foundations	12 weeks	
	Seismic fndn 2021		\$1,967,058				
	Stream culvert work 2021		\$885,912				
				\$17,006,541			
	Total With Escalation						
	Cost Δ from Original Scope						
Option 3	Mass grading with drainage & walls 2020	\$10,630,182			Substantial work in 2021 - schedule constraints - Likely to pay extra for OT to meet 2021 in-service date for the EE230 TAL-RIC line. Foundations, ground grid, conduits, etc will take upwards of 200 additional days of work due to cure times, additional grading, fish window work for the culvert etc.	10/12 weeks	
	Other 2021		\$5,263,587				
	Stream culvert work		\$860,839				
				\$17,073,613			
				\$498,810			
	Total With Escalation						
	Cost Δ from Original Scope						



Reference Materials

- 2020-2021 Construction Cost Delta.xlsx
- PCR No.9_2019.12.30 Final.docx
 - Attachment 1_ RIC Transf Seismic Base Isolation Justif_Rev2_.docx
 - Attachment 2_PSE Richards Creek Transformer Vertical Isolation Study.pdf
 - Attachment 3_Trans Base Isolation Study.pdf
 - Attachment 4_90% Civil Cost Estimate_12.2019.xls

Energize Eastside

EMC Informational - Non-Public Transmission Information
April 22, 2021

Brad Strauch
Infrastructure Program Manager



Anticipated Recommendation

- No action requested
- This is an Informational update only

CETA / Beyond Net Zero Implications

- Energize Eastside helps enable a robust transmission system to better support future CETA and Beyond Net Zero diversified energy future

Recent Progress

South Segment

Permits Obtained

- Bellevue Conditional Use Permit (CUP), Critical Areas Land Use Permit and Richards Creek substation Clear & Grade, Building, and Utility Extension permits
- Renton CUP, Shoreline Exemption, Construction Permits
- King County Construction Permit
- Ecology Stormwater general permit
- U.S. Army Corps of Engineers and Ecology Section 404/401 permits
- WA Fish and Wildlife Hydraulic Project Approval

Permits In Process – Issued later this year

- Bellevue construction permits for south Transmission Lines - requires *Contractor Selection*
- Newcastle CUP negotiation continue

North Segment

- North Bellevue permit applications undergoing review
- Redmond permit applications will be submitted in the second quarter of 2021

Richards Creek substation civil construction started under competitive bid

Next Steps

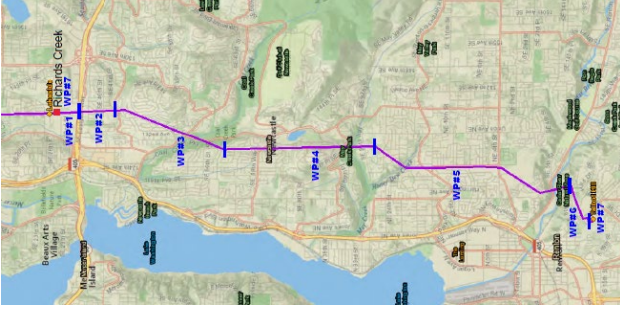
Proceed with constructing select segments (work packages) of the south half transmission lines in 2021

- This includes about 4 miles of transmission line in Renton, King County, and Bellevue
- Segment selection takes into account:
 - Permitting
 - Operational requirements – interim operation at 115 kV
 - Political and community considerations
 - Project Need and Solutions
 - Permitting
 - Construction considerations

Next Steps, Continued

Construct Work Packages (WP) 1, 2, and 5 of the south half transmission lines in 2021

- Work Package 1 and 2 include poles from Richards Creek substation (RIC) south to the southern extent of Tye Middle School and poles adjacent to Chestnut Hill Academy – low number of property owners lower attendance at schools this year
- WP 5 includes poles from Newcastle/Renton border south to area east of the Talbot Hill substation (TAL) (includes a section of unincorporated King County) – low number of residential property owners and project opposition
- Rationale ensures availability of materials, reduces storage costs, provides flexibility to construct additional segments in a timely manner, focuses construction on primarily open and commercial properties in areas with historically low opposition



Project Need Continues to be Reviewed and Affirmed

Project Need

- Six studies have been performed that confirm the need for Energize Eastside
- PSE Annual Transmission Planning Studies continue to show there is a need for the project
- Summer actuals exceeded the level of need in 2017 and 2018 – two years earlier than forecasted
- Use of Corrective Action Plans that include load shedding are necessary until the project is completed

Solutions

- Extensive analysis on solutions has been performed by PSE and a number of consultants since 2014
- Energy storage alternatives were studied by Strategen in 2015 and 2018
- Energize Eastside remains the best solution

Energize Eastside Supporting Studies

- Electrical Reliability Study by Exponent, 2012 (City of Bellevue)
- Eastside Needs Assessment Report by Quanta Services, 2013 (PSE)
- Supplemental Eastside Needs Assessment Report by Quanta Services, 2015 (PSE)
- Independent Technical Analysis by Utility Systems Efficiencies, Inc., 2015 (City of Bellevue)
- Review Memo by Stantec Consulting Services Inc., 2015 (EIS consultant)
- Assessment of Proposed Energize Eastside Project by MaxETA Energy and Synapse Energy Economics, Inc., 2020 (City of Newcastle)



Appendix



Appendix 1

- Seven work packages (WP) developed (based on constructability, permitting, and anticipated public interaction) (Considerations: contracting, conditions, permit issuance system tie-in points to operate at 115 kV, potential political noise during an election year). **WP**s are recommended for 2021 construction.
 - **WP #1: Richards Creek substation south to poles on south side of I-90 plus Shuffleton-Lakeside 115 kV line relocation (9 poles, 0.6 mi)**
 - **WP #2: I-90 to south end of Tye Middle School (8 poles, 0.48 mi)**
 - WP #3: Base of Somerset Hill to Newcastle border (30 poles, 1.85 mi)
 - WP #4: Newcastle (38 poles, 2.27 mi)
 - **WP #5: Newcastle/Renton border to pole 0/8 (38 poles, 3.17 mi)**
 - WP #6: Pole 0/8 to 0/4 near Talbot Hill substation (7 poles, 0.49 mi)
 - WP #7 Drops into Richards Creek and Talbot Hill substations (3 poles)

Appendix 2

Upcoming Major Milestones

- Transmission line contractor bid process (May 2021)
- Newcastle CUP Staff Report and Hearing (Q3 2021)
- Bellevue transmission line construction permits (South) – requires contractor selection
- Bellevue North permitting public meetings (Q3 and Q4 2021)

Current Financials

Financial					Completion			
2021 YTD Actuals (Millions)	2021 Forecast (Millions)	2021 Budget (Millions)	Lifetime Actuals (Millions)	Approved Lifetime Budget (Millions)	Post-Design Lifetime Budget (Millions)	Current Completion Date	Post-Design Completion Date	% Complete
7.5	71.0	71.4	119.8	278.9	274.1	12/31/2025	12/31/2025	41%

