EXH. CAK-3 (Apdx. E)
DOCKETS UE-19___/UG-19___
2019 PSE GENERAL RATE CASE
WITNESS: CATHERINE A. KOCH

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **PUGET SOUND ENERGY,** **Respondent.**	**Docket UE-19____** **Docket UG-19____**

APPENDIX E (NONCONFIDENTIAL) TO THE SECOND EXHIBIT TO THE PREFILED DIRECT TESTIMONY OF

CATHERINE A. KOCH

ON BEHALF OF PUGET SOUND ENERGY

JUNE 20, 2019

PUGET SOUND ENERGY

White River – Electron Heights 115 kV Reroute to Alderton Substation

Implementation Plan

2019

CURRENT OWNER: Peter McKenzie

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Section 1. Document Revision History and Chronological Summary

1.1. Document Revision History

Revision	Date	Description	Phase
0.0			Project Plan Development
0.1			Project Plan Development
1.0	**2002**	**Approved Initiation to Planning (Gate 2) Phase Gate CSA PIP**	**Project Design Phase**
1.1	Sept. 2010	Initial PIP	Detailed Engineering
1.2	Oct. 2013	PIP Update to new template	Detailed Engineering
2.0		**Approved Planning to Design (Gate 3) Phase Gate PCR PIP**	**Project Execution Phase**
2.1	N/A		Procurement & Contracting
3.0	**Feb 2018**	**Approved Design to Execution (Gate 4) Phase Gate PCR PIP**	**Project Close-Out Phase**
4.0	**March 2019**	**Approved Execution to Close- Out (Gate 5) PCR PIP**	**Project Close/ Hand over to BU**

1.2. Chronological Summary

2002 - 2005
Initial scope development and routing.

2005-2006
Preliminary design for easements; fifteen easements are needed for the Phase I corridor and nineteen for the Phase II corridor.

2007- 2012
Over the past eleven years, project has had four different Project Managers who have worked toward easement acquisition and permitting. Negotiations for easements have been lengthy and challenging. Substation bays & breakers were planned and installed for all three future lines during Alderton rebuild.

2013
All easements were obtained for Phase I. Phase II has six easements remaining that may require condemnation. The condemnation approval process has been ongoing for over one year.

2014

Phase I of project was built and energized.

2015-2016

Phase II easement acquisition and permitting. All easements were granted except one customer and DNR water crossing. SEPA determination with Pierce County was complete with Shoreline permit (set to expire 5/3/18).

2017

Project was not initially funded to start the year. At mid-year, project was funded for finalizing permitting and design, but neither could be completed. Final customer easement was settled and completed.

2018

Project received original budget of $3.5M for construction of project. Team started the year finishing design and permitting. Once project team had a clear idea of project schedule to finalize designs, permitting and need verification was determined a CSA was developed with an updated project estimate to move into execution phase. An execution gate presentation was held with Aaron Drake, Roque Bamba and project team. The execution CSA was signed at the beginning of April.

At this time a Potelco was contacted with a request for bid. The bid was slightly higher than estimated but with justification. A CSA amendment was created and signed approving the additional costs and the bid was accepted. Steel poles were also ordered at this time but cost was significantly higher than anticipated because of the delivery timeframe required to meet the construction schedule (delivered in 14 weeks instead of the typical 22 weeks).

Project construction was started on July 9th and the two new transmission lines were energized on October 19th. There were several items that lead to additional cost associated with the project. There were significant tree removals required by the load office before a cut over was granted. Additional casings required for various structures. Additional Engineering required for slope and access road stabilization. Substation Operations' additional scope when project did not phase out initially.

The remainder of the year was spent on restoration, working with impacted property owners, and closing out permitting requirements. The final mitigation planting carried over into 2019.

2019

Mitigation planting was completed on Pierce County parcel. Environmental monitoring Reports are being created by HDR. Bonney Lake permits were closed out after DEA provided Plant Inspection Memorandum.

Some property owners are still being worked with on compensation for access damages.

Final Close Out CSA should be generated.

Additional Scope:

- In November of 2013 the Transmission Planner and Project Engineer suggested that the project include a reconductor of the ½-mile existing transmission line segment all the way back to Rhodes Lake Substation from 795 TERN 55C to 1272 ACSR, 100C. This scope change will be included as part of the gate-4 PCR request. It will also require the replacement of six transmission poles that were installed in 1970 and the transfer of the existing distribution underbuild. *This was added to the scope and completed during the Phase I 2014 construction.*

- In early 2018, the transmission planner and project engineer required two single CCVTs at Osceola for upgraded protection schemes. *This was added to the scope and completed during the Phase II 2018 construction.*

Project Overview

1.3. Purpose:

Reduce outage frequency and duration, and increase capacity for the White River – Electron Heights – Krain Corner 115 kV transmission network by looping three transmission lines into Alderton substation.

Project Objectives:

1. Construct of three new transmission lines, 10- line miles total, through Alderton Substation.
2. Install a normal open at switch 905, south of Krain Corner segment to separate the north and south segments of the system. In addition, the work will require "lifting" jumpers at or near the new transmission intercept near Rhodes Lake substation to allow for physical separation between the two systems. *This was completed in Phase I.*

1.4. Need Statement:

This project in Pierce County addresses both transmission reliability and capacity improvement needs.

RELIABILITY: The White River (WRT) – Electron Heights (EHT) – Krain Corner (KRA) 115kV transmission system has been vulnerable to storm-related outages due to its combined 37 miles of exposure and three-way tap configuration. There were 17 interruptions over the five year period (2009-2013). The completion of Phase I of the project in 2014 added a new four-mile 115 kV line from Rhodes Lake Substation (RHO) to Alderton Substation (ALD), which split the three-terminal line with a normal open to White River and Krain Corner. The outage exposure to 25,330 customers was reduced to affecting 10,160 and 15,170 customers respectively. The remaining two legs of the transmission system from WRT to KRA is still 20.3 miles long and has experienced 11 outage from 2014 to 2017.

CAPACITY: With the completion of WRT – ALD 230 kV in 2017 (Pierce 230); the Pierce transmission system would substantially benefit with the addition of two new 115 kV pathways from Alderton to both White River and Krain Corner for the growing Central Pierce/Bonney Lake/Lake Tapps area.

1.5. Benefits:

Quantitative

General

1. Divide one large transmission system with five substations into three smaller looped systems, each with fewer customers.
2. Reduce outage frequency to a large customer base by approximately 50% and shorten outage durations.

Phase II

3. Phase II is needed to further improve transmission reliability for Bonney Lake and Osceola substations served off White River-Krain Corner 115 KV line. After completion of Phase 1 in 2014, the White River-Krain Corner #2 115 KV line (~10,000 customers) experienced 11 outages over a 4 year period (2014-2017). Phase II will sectionalize the White River-Krain Corner #2 115 KV line to White River-Alderton 115 KV (6,000 customers, Bonney Lake substation) and Alderton-Krain Corner 115 KV (4,000 customers, Osceola substation) and reduce transmission outage impact by splitting the line customer base of ~10,000 urban customers over two transmission lines.
4. Phase II will improve the Transmission Reliability Index (TRI) for Bonney Lake and Osceola substations from 0.88 to 1.00, i.e. probability of transmission restoration from automatic sectionalizing is improved to 100% for both Bonney Lake and Osceola substations. Bonney Lake, serving approximately 6,000 customers will see a significant transmission reliability benefit with the reduction of transmission exposure from 20 miles (on White River-Krain Corner 115 KV) to ~8 miles, a transmission exposure

reduction of 60%. Osceola substation transmission exposure remains nearly the same at 20 miles, however its Transmission Reliability Index upgrades from 0.88 to 1.0, as it will be a single substation on Alderton-Krain Corner 115 KV line with two transmission sources and can expect 100% automated transmission restoration on loss of one transmission source.

Qualitative

This project will separate the WRT – KRA – EHT system into three separate line segments. 1. Electron Heights to Alderton and 2. White River to Alderton, and 3. Alderton to Krain Corner. There will be a normal open south of the Krain Corner segment. In addition, this project establishes multiple transmission gateways from the planned Alderton 230 kV Transmission Station.

Planner's Assumptions:

1. Easements are available running parallel to both the existing BPA 230 kV and Tacoma Public Utilities water main corridors.
2. Permits can be obtained.
3. Separating the White River – Electron Heights – Krain Corner system into three smaller systems will improve reliability.

1.6. Alternatives

1. There are alternatives that benefit only part of the system but no other alternatives exist that are as comprehensive as this project.

	Details	Benefits	Challenges
Proposed Option	~10 miles total – Phase I: One circuit running along the Tacoma Water Pipeline corridor (completed 2014). Phase II: Two circuits running parallel along the south side of the existing BPA 230 kV across the valley.	Minimizes conflicts with existing structures and high-density areas. Existing adjacent BPA 230 kV and TPU Pipeline.	Multiple parcels.
Option 2	~10 miles total – New circuit along Angeline Rd E from Bonney Lake to Rhodes Lake Road E. Three circuits from Rhodes Lake to Alderton along the TPU pipeline.	None	Would require one additional 115 kV (1.7 miles) through a high-density commercial and residential development. It is not advisable to construct three circuits in the same corridor. Would require a wider easement corridor along TPU.
Option 3	10 miles total – Two circuits running parallel along the north side of the existing BPA 230 kV across the valley. One circuit running along the Tacoma Water Pipeline corridor.	None	The corridor would cross twenty-two residential structures and one school on the north side of the BPA corridor. Two crossings of the existing BPA 230 kV lines.
Option 4	New circuit from Angeline Rd E along Hwy 410 through Bonney Lake. Three circuits through valley along the existing BPA corridor.	None	New circuit along Hwy 410 in congested arterial in Bonney Lake. It is not advisable to construct three circuits in the same corridor.

1.7. Scope:

At Design Gate

1. Purchase easements from 23 different property owners.
2. Design two 3.2 mile 115kV parallel transmission lines
3. Obtain long-lead permits including Shoreline (two Puyallup River crossings), SEPA, WSDOT Highway crossings (SR 162).

At Execution Gate

1. Bid process for line construction and logging tree removal.
2. Long lead material purchase for steel poles and 110,000'+ ACSR conductor.
3. Finalize permits including street use with Bonney Lake, Pierce County Forest Practice Permit, Bonney Lake Critical Areas Permit, county ROW permit for installation in Foothills Trail (County Trail) corridor.
4. Finalize DNR water crossing and BPA access agreement
5. Construct transmission line.

At Close Out Gate

1. Project Close-out Check List
2. Lessons Learned meeting
3. Complete Close Out CSA
4. Update File Folders

1.8. Project Assumptions:

1. The selected routes are parallel to existing utility corridors and have the least impact to the surrounding community.
2. Construction is possible in less than one year and can be started any time of the year but tie ins will require system outage.
3. Phase I and II improvements are independent of one another and provide individual system improvements. Construction does not have to be phased in a specific sequence.

1.9. Project Constraints:

1. Construction of Phase II is across agricultural areas and construction will need to be coordinated with the growers.
2. The reroutes must include three transmission lines to obtain full benefit.
3. The three new bay positions at Alderton must fit into the full build out plan including the WRT – ALD 230 kV and other future bay assignments. *This has been completed*
4. Crossing SR 410 in Bonney Lake, the Puyallup River (2 crossings, 1 in each phase) and SR 162.
5. Paralleling the existing BPA 230 kV transmission corridor.
6. Paralleling the existing Tacoma Public Utilities water main corridor.

Section 2. Budget and Schedule Milestones

2.1. Actual Costs for Phase I

Category: Phase 1	Project Totals
Capital (incl. contingency)	$5,694,081
Project O&M	$ -
OMRC (T&D only)	$10,880
Ongoing O&M	$ -
Cash O&M Benefits	$ -

2.2. Phase II Actuals and Estimate

Assumptions:

1. Not all 2019 costs have been captured and this is a forecast as of 3/6/2019

Category: Phase 2	2016 and before	2017	2018	2019	2020
Capital (incl. contingency)	$5,332,135	$296,190	$7,440,669	$140,724	$ -
Project O&M	$11,297	$0.00	$5,248	$ -870	$ -
OMRC (T&D only)	$ -	$ -	$ -	$ -	$ -
Ongoing O&M	$ -	$ -	$ -	$ -	$ -
Cash O&M Benefits	$ -	$ -	$ -	$ -	$ -

2.3. Milestones and Deliverables

Milestones and Deliverables	Description	Schedule Baseline Date	Approximate Date Ph 1	Approximate Date Ph 2
	Feasibility	Pre 2000	2005	2005
	Property Purchase	2008	2014	2017

	Develop Project Plan	Pre 2000	Pre 2000	Pre 2000
	Detailed Design	Oct. 31, 2013-Phase I July 1, 2015 Phase II	2014	March 2018
	Order Material and Permitting	March 1, 2014 Phase I May 1, 2015 Phase II	2014	March 2018
	Construction	2014 Phase I 2016 Phase II	2014	July –Oct 2018
	Commissioning Complete	2014-Phase I 2016 Phase II	2014	Nov 2018
	Project Close-Out Complete	2014-Phase I 2016 Phase II	2014	Mar 2019

Section 3. Engineering Baseline Scope

3.1. Transmission

Line route

1. Phase I – One 115kV line. Electron Heights - Alderton 115kV, 4.2 Miles – 50' wide, adjacent to TPU water corridor with 12.5 kV distribution underbuild from McCutcheon Rd [Rhodes Lake 13 and Gardella 13] to Rhodes Lake Substation 3 miles. Note the 50' easement will make use of the cleared TPU water corridor for aerial clearance and vegetation management issues. The line will be 1272 ACSR, 100C. The scope of work does not include PSE Network fiber.

2. Phase II – Two parallel 115kV lines. White River – Alderton #1 and Alderton – Krain Corner, two (2) 3.2 Miles – 100'-125' wide, adjacent to BPA for majority of line route. The transmission lines will intercept the existing White River – Krain Corner #2 line at Meyers Rd in Bonney Lake. The lines will be 1272 ACSR, 100C. The scope of work does not include PSE Network fiber.

Special considerations

1. The reroutes must include three transmission lines to obtain full benefit.
2. The three new bay positions at Alderton must fit into the full build out plan for the site including the WRT – ALD 230 kV and other future bay assignments.
3. Crossing SR 410 near Bonney Lake, the Puyallup River (2 crossings) and SR 162.
4. Paralleling the existing BPA 230 kV
5. Paralleling the existing Tacoma Public Utilities water main.
6. Permitting: Shoreline Substantial Development Permit and SEPA.

Consultant/Design Contractor

Not applicable

3.2. Station

Type of Station/Description

It was discussed and agreed that the Pierce 230 kV project would perform the make-ready work at Alderton Substation. Which was completed in 2011.

Property

Not applicable

Special Considerations

Not applicable

Security
Not applicable

Consultant/Design Contractor
Not applicable

3.3. Equipment/Materials

Long Lead Items
Phase I: Complete

- Sixty Three (63) wood transmission poles
- Two (2), two-pole H-frames
- Reconductor segment includes replacing seven poles, six round wood and one new glu lam
- Approximately 75,000 feet of 1272 KCMIL Bittern ACSR conductor
- Approximately 14,800 feet of #336 ACSR Tree Wire
- Approximately 14,800 feet of #4/O ACSR Neutral.
- Approximately 29,600 feet of #397 AAC Primary

Phase II: Complete

- Ninety (90) wood transmission poles (This includes all single, h-frame, and 3 pole wood structures)
- Nine (9) steel monopole structures
- Approximately (110,000) circuit feet of 1272 KCMIL Bittern ACSR Conductor

Special considerations
Place order in advance according to the current advice from the PSE Warehouse. 4 steel poles will be for 1,300' river crossing requiring significantly stronger structures.

Consultant/Design Contractor
POWER Engineers were contracted to perform induction study for a commercial customer along the corridor.

Icicle Creek Engineers were contracted to perform borings and geotechnical report.

3.4. Protection & Controls

At completion of Phase I, Switch 905(S of KRA Tap) is to be set as normal open; and we will need to lift jumpers at or near the new transmission intercept near Rhodes Lake substation. When the transmission system is reconfigured, a small study is required and the immediate area will receive updated protective relay settings. *This was completed for Phase I.*

At this time for Phase II, the relays have already been installed for this project. The protection schemes were looked at and two single CCVTs at Osceola for upgraded protection schemes.

3.5. Special considerations

None

3.6. Consultant/Design Contractor

Not applicable

Section 4. Permitting Strategy

4.1. Jurisdictions Impacted

1. City of Bonney Lake
2. WSDOT (Highway 410 and 162 crossing)
3. Tacoma Public Utilities
4. Bonneville Power Administration
5. Pierce County
6. Dept. of Natural Resources – Puyallup crossings

4.2. Permits Needed

1. Shoreline (Two Puyallup crossings) – Obtained for both Phases
2. Forest Practices
3. WSDOT Highway crossings Obtained for both Phases
4. Pierce County ROW permit for installation in the Foothills Trail corridor. No Permit was necessary on Phase II
5. SEPA - Obtained for both Phases
6. NPDES
7. Bonney Lake Critical Areas
8. Bonney Lake Street Use for steel pole within R/W

4.3. Special considerations

There is a Foothills Trail Coalition that may oppose the ROW use permit. Our preliminary discussions with the county indicate that this is a low risk. This was not an issue for Phase II.

4.4. Consultant

HDR prepared critical areas report for wetlands. They are also providing the mitigation monitoring reports.

Icicle Creek Engineers is prepared critical areas report for steep slopes. They have also been monitoring steep slopes and access roads for damage over first wet season.

Cascade was contracted for mitigation plantings

DEA was contracted for a landscape plan for tree removal and planting for access to Structure 2.

Section 5. Communications Strategy

5.1. Project External Stakeholders

1. City of Bonney Lake
2. City of Sumner
3. WSDOT (Highway SR 162 and 410 crossings)
4. Tacoma Public Utilities
5. Bonneville Power Administration
6. Pierce County
7. Foothills Trail Coalition
8. Tribal representatives (River Crossings)
9. Department of Natural Resources (Aquatic lease and Forest Practices)

5.2. Public Relations/Corporate Communications Strategy

The community outreach plan for the Alderton Reroute Project (Known as: "Central Pierce-Alderton 115 kV transmission line project" externally) was a highly targeted program; the focus was on one-on-one communications with the property owners. The project was also discussed at stakeholder and public open house meeting for a related project, Pierce County 230 kV. Both general and land owner-specific communications are listed below.

Land owner specific communications:

1. Right of entry request/survey letter, July 2009
2. Project update letter, January 2010
3. Second project update letter, February 2010
4. Multiple meetings, phone calls and correspondence from real estate team (See section 3 for details on correspondence)
5. Multiple phone calls and correspondence for staking, locating and geotechnical borings (Dec 29, 2017)
6. Mitigation of structure sites #27-34, Feb-March 2018
7. Structure #21-22 site coordination Feb 6, 2018
8. Tree Removal meeting customers of structure sites #2-4 and 7-8 on Feb 6, 2018.
9. A lot more interaction was made with specific property owners along the route. Most documentation of those meeting can be found **here**.

General communications:

1. Fact Sheet, October 2008
2. External web page, launched Sept. 2009 and updated quarterly
3. Fact Sheet, Feb. 2010
4. Fact Sheet, March 2011
5. Stakeholder Meeting for Pierce 230 kV (a related project), March 2011
6. Open House Public Meeting for Pierce 230 kV (a related project), May 2011
7. Upcoming project notice for Phase II, Feb 2018.

8. Notice of start of construction, May 2018
9. Mailer about road closer on Meyers Rd, Sept 2018

In addition to the land owner and general community outreach, the project team has provided regular updates on the project to City of Bonney Lake and Pierce County.

Meetings Included: (a detailed contact list prior to construction can be found here in the excel file Alderton Reroute II owner commitments. H:\~ T&D Project Folders\Electric\White River - Electron Heights_111000511\201 Real Estate)

1. November 12, 2009: Aaron Drake and Jeff Payne met with City of Bonney Lake Public Works.
2. October 29th, 2010: Aaron Drake and Jeff Payne met with Bonney Lake Public Works.
3. February 8, 2011: Janet Olsen, Gary Nomensen and Aaron Drake met with Pierce County Council members.
4. November 28, 2017: Peter McKenzie and Kerry Kriner met with Pierce County Planning and Public Works.
5. January 18, 2018: Peter McKenzie and Jeff Payne met with Bonney Lake Engineer on upcoming project, street use impacts, and structures in R/W.
6. Prior to construction, Peter McKenzie and usually Nick Coulson met with every property owner along the route to discuss concerns and prepare for the construction process.
7. Following completion of construction, payments were made for reimbursement for crop loss and asphalt damages.

Construction notices will be sent to a targeted group of property owners who live along the route corridors.

Section 6. Coordination with Other Projects

This project is scheduled to be completed in 2018 as it provides three additional 115 kV transmission gateways for the Alderton 230 kV project; which establishes a 2nd bulk power delivery point for Pierce County. In addition, the 230 kV project provided the substation modifications for the 115 kV tie points at Alderton. There are no firm external commitments to complete this system improvement.

- White River – Electron Heights Phase I completed 2014
- Pierce County 230kV completed 2017
- Alderton Substation Expansion completed 2017
- White River – Electron Heights Phase II will be final task in Central Pierce Expansion

Section 7. Summary of Risk Assessment and Mitigation Plan

7.1. Risks and Opportunities

Permitting Risk

Phase I:

All necessary permits have been obtained except for three short lead-time permits;

1. Forest Practices (tree removal);
2. Right of Way permit to place poles in the Foothills Trail corridor;
3. NPDES

Shoreline Permit Extension:
The Shoreline Substantial Development Permit for the Puyallup River Crossing at 128th St received final approval from Ecology Sept 2011. In order to keep that permit active "substantial progress" on that portion of the project within shoreline jurisdiction was to begin within 2 years of the approval date, September 2013. A one-year extension was obtained which extended the maximum start out to September 2014.

Phase II:

PSE was required to obtain the following permits prior to construction: These were completed for construction of the project.

1. Shoreline Substantial Development ("SD") permit from Pierce County for the crossing of the Puyallup River was completed but will expire on May 3, 2018. As part of the SD, the county also required SEPA and a Critical Areas Review of the entire project.
2. WSDOT Permit for crossing SR-162 has been completed
3. Critical Areas Permit with Bonney Lake
    a. Wetland
    b. Steep Slopes
    c. Clear and Grade for access to Structure #2
4. Street Use Permitting needs to be finalized within local jurisdictions including Bonney Lake and Pierce County.
5. DNR river crossing

Easement Risk:

For Phase II all easements have been obtained

Construction Risk

This project involves a cross-country corridor with few critical areas but the corridor has a relatively small segment of steep slopes but only two poles have difficult access. Structures #2 - #7 required building access roads for the construction process. Structures #1 - #3 required sizable drilled pier foundations. The Puyallup River and two state highway

crossings required additional coordination effort to avoid delays. The Puyallup River crossing is a 1,300' span that required extremely deep drilled pier foundations as well. Lastly, dense evergreen trees and heavy trees on each side of the river crossing will required great detail and consideration as they were removed. Clearing work was started well prior to line construction to avoid delays.

7.2. Mitigation Plan

Permitting Mitigation

For Phase I, PSE Land Planning negotiated a tentative solution with the Tribes, that included enhancement of adjacent and potentially offsite but very close fish habitat area.

For Phase II, we did not want the SD to expire and meet the permits distinction of starting construction by the May 3rd timeline.

For Phase II, all permits were acquired before starting construction.

Construction Mitigation

Included the risk information in the Project Conditions document as part of the bidding process. Ensured that the contractor had accounted for the risks in their overall construction plan. Had to coordinate a rolling slow down with the state and Bonney Lake

Easement Mitigation

None

Appendices

Appendix A. Project Team

Appendix B. Work Order Structure

Appendix C. Planner Estimate and Assumptions

Appendix D. 10-Year Plan

Appendix E. Project Change Request (PCR) History Log

Appendix F. Estimated Costs

Appendix G. Current Schedule

Appendix H. Risk Assessment and Risk Management Report

Appendix I. Project Change Approval Record (CAR) Log

Appendix J. Lessons Learned Document

Appendix K. Project Map

Appendix A. Project Team

Phase I

Name	Role	Department
Aaron Drake	Project Manager	Project Management
Kebede Jimma	Transmission Planner	Transmission Planning
Will Foster	Transmission Design Engineer	Transmission Design
Jim Swan	Senior Real Estate Rep.	Real Estate
Andy Markos	Municipal Land Planner	Engineering- Permitting
Gary Nomensen	Community Relations Manager	Community Services
Jeff Payne	Municipal Liaison Manager	Community Services
Ron Forster	Controls Engineer	Substation Engineering
Mark Savage	System Protection	Substation Engineering
Janet Brown	Vegetation Management -PC	Vegetation Management
Eric Christensen	Project Scheduler & Estimating	Project Controls
Allison Stanford	Communications Customer and System Projects	Corporate Communications

Phase II

Name	Role	Department
Peter McKenzie	Project Manager	Project Management
Rachit Arora	Transmission Planner	Transmission Planning
Irving Ogi	Transmission Design Engineer	Transmission Design
Ralph Potts	Real Estate Rep.	Real Estate
Kerry Kriner	Municipal Land Planner	Engineering- Permitting
Matt Perry	Gov't Affairs	Community Services
Jeff Payne	Municipal Liaison Manager	Community Services
Yung Fu	Controls Engineer	Substation Engineering
Bryan Brennan	System Protection	Substation Engineering
Josh Potter	Vegetation Management -PC	Vegetation Management
Anne Standring	Project Scheduler & Estimating	Project Controls
Mara Gronlund	Communications Customer and System Projects	Corporate Communications
Nick Coulson	Construction Manager	Major Projects
Soon Dye	Metering	Metering and Controls

Appendix B. Work Order Structure

WBS Element

- S.00059.01(previous)
- R.10035.01.01.01 Capital
- R.10035.01.01.02 OMRC

Notification: 10551320

111000511-- Superior Order #

Phase I

111000512 -- Pre-Construction Order for Phase I

153001968 – Easements for Phase I

108084576 – Retirement for transmission work

571011245 – Expense for transmission work

101086153 – Superior number for distribution underbuild

108084657 – Retirement for distribution underbuild

593146781 – Expense for distribution underbuild

Phase II

111014408 -- ALDERTON PHASE II WHT RVR - Alderton #1

111014409 -- WHT RVR-ALDERTON PH II PRECON

108084576 -- WHT RVR-ALDERTON PH II retirement order

111014410 -- ALDERTON PH II ALD-KRN CRNR

111014411 – Alderton to Krain Corner Pre Con

153002068 -- Internal work order for an Easement Purchase for Phase II (White River- Alderton Substation)

153002668 – For demolition costs on fee-owned property immediately adjacent to SR 162 (west side).

153002629 – For fee-owned purchase of one property with structures along the corridor.

Appendix C. Planner Estimate and Assumptions

All Pre 2000 – See current **10-year plan** for this project.

Appendix D. 10-Year Plan

Appendix E. Project Change Request (PCR) History Log

Appendix F. Estimated Costs

Appendix G. Current Schedule

Appendix H. Risk Register

Appendix I. Project Change Approval Record (CAR) Log

Phase I Construction **CAR records**

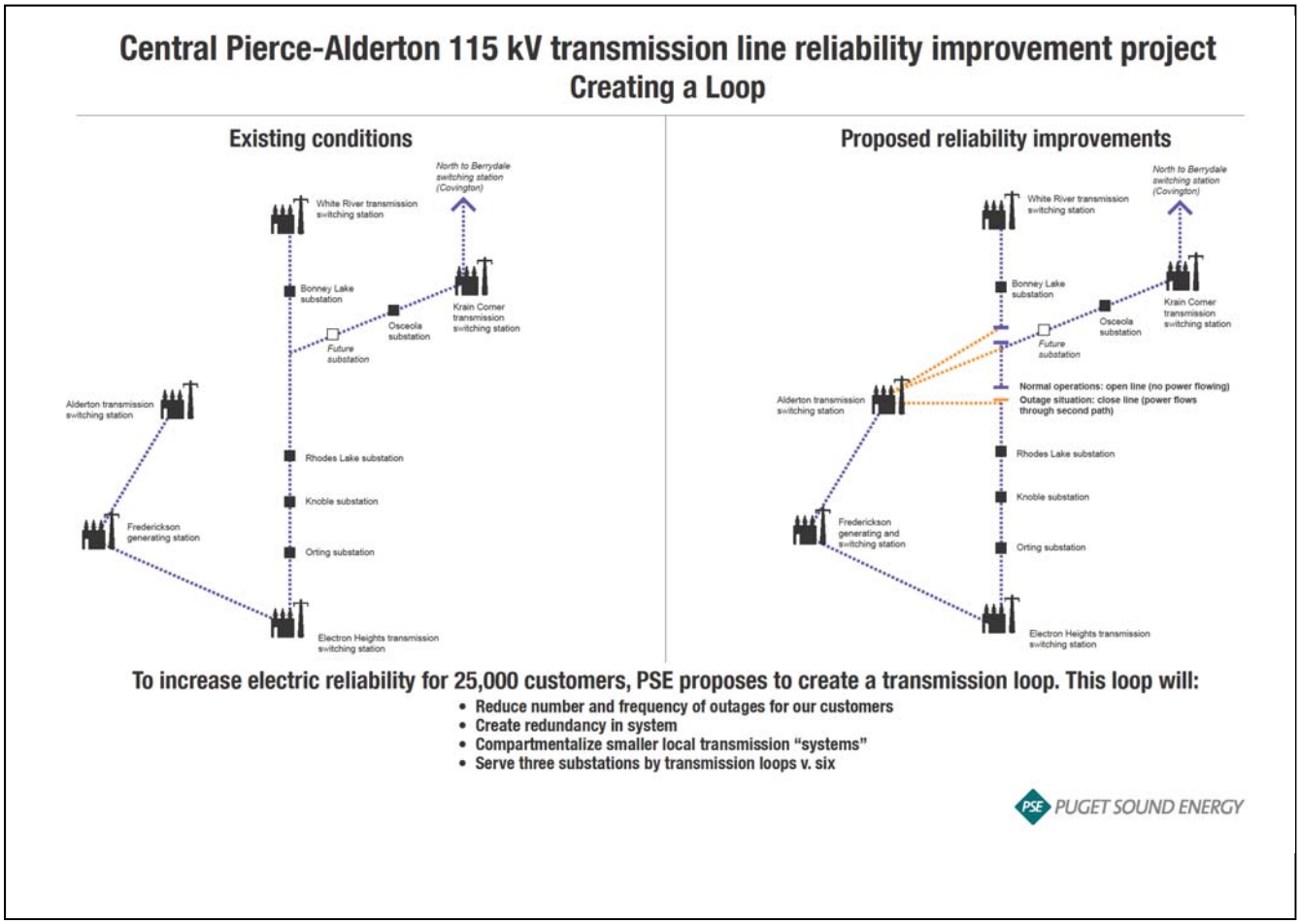
Will complete Phase II Construction CAR Log when project is complete.

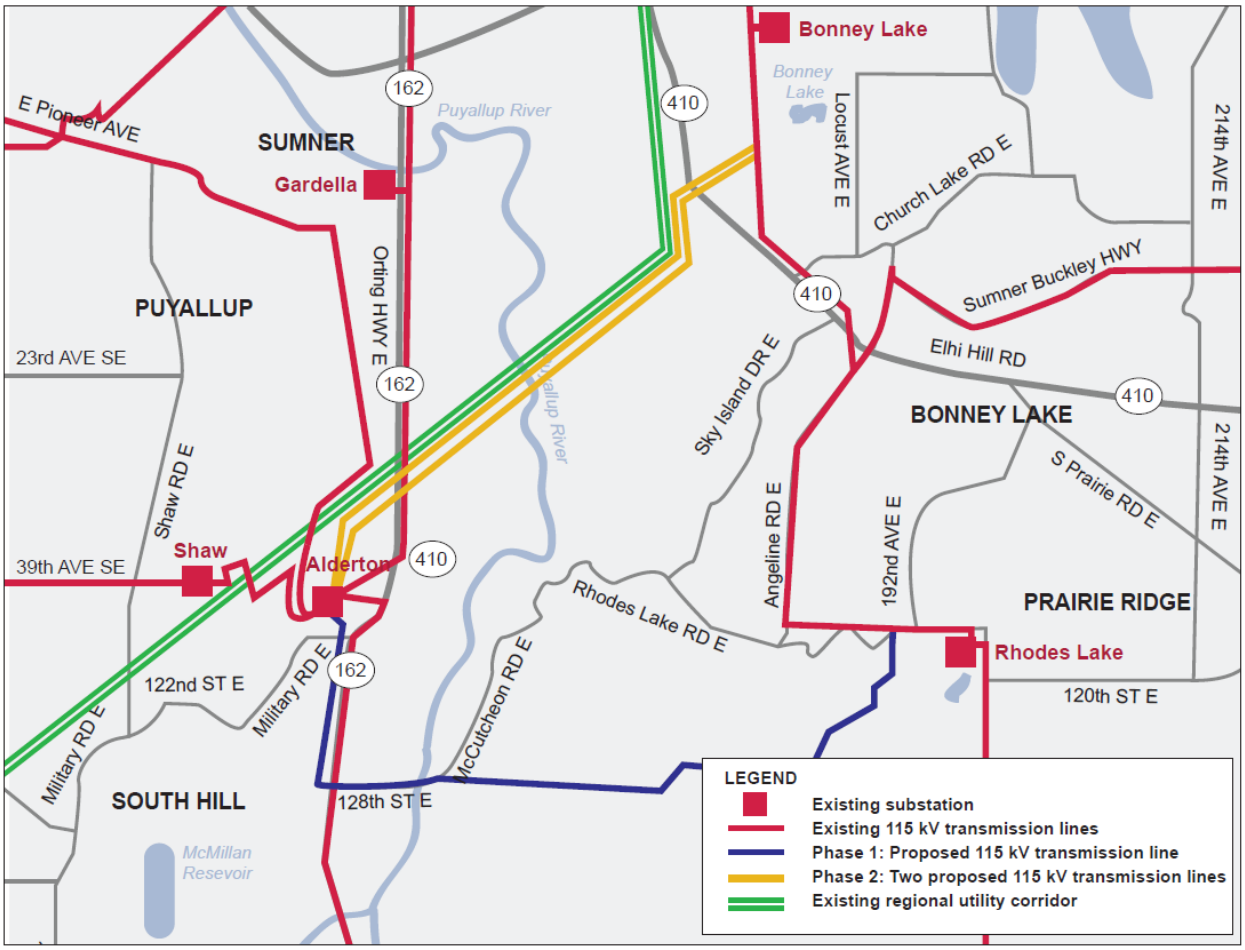
Appendix J. Lessons Learned Document

Phase I **lessons learned document**

Phase II to be completed when project is finished.

Appendix K. Project Map





Central Pierce - Alderton 115 kV transmission reliability improvement project