Other Attachment File(s)

*** Mandatory Other Attachment Filename:** 1235-SOPO.docx

Add Mandatory Other Attachment | Delete Mandatory Other Attachment | View Mandatory Other Attachment

To add more "Other Attachment" attachments, please use the attachment buttons below.

Add Optional Other Attachment | Delete Optional Other Attachment | View Optional Other Attachment

Project/Performance Site Location(s)

Project/Performance Site Primary Location

☐ I am submitting an application as an individual, and not on behalf of a company, state, local or tribal government, academia, or other type of organization.

Organization Name: Public Utility District No 1 of Snohomish County
UEI: EM4RX1ZLK8K5
* Street1: PO Box 1107
Street2:
* City: Everett
County: Snohomish
* State: WA: Washington
Province:
* Country: USA: UNITED STATES
* ZIP / Postal Code: 98206-1107
* Project/ Performance Site Congressional District: WA-008

Project/Performance Site Location 1

☐ I am submitting an application as an individual, and not on behalf of a company, state, local or tribal government, academia, or other type of organization.

Organization Name: Public Utility District No 1 of Snohomish County
UEI: EM4RX1ZLK8K5
* Street1: PO Box 1107
Street2:
* City: Everett
County: Snohomish
* State: WA: Washington
Province:
* Country: USA: UNITED STATES
* ZIP / Postal Code: 98206-1107
* Project/ Performance Site Congressional District: WA-001

Project/Performance Site Location 2

☐ I am submitting an application as an individual, and not on behalf of a company, state, local or tribal government, academia, or other type of organization.

Organization Name: Public Utility District No 1 of Snohomish County
UEI: EM4RX1ZLK8K5
* Street1: PO Box 1107
Street2:
* City: Everett
County: Snohomish
* State: WA: Washington
Province:
* Country: USA: UNITED STATES
* ZIP / Postal Code: 98206-1107
* Project/ Performance Site Congressional District: WA-002

Additional Location(s) Add Attachment | Delete Attachment | View Attachment

OMB Number: 4040-0004
Expiration Date: 11/30/2025

Application for Federal Assistance SF-424

* 1. Type of Submission:
- [ ] Preapplication
- [x] Application
- [ ] Changed/Corrected Application

* 2. Type of Application:
- [x] New
- [ ] Continuation
- [ ] Revision

* If Revision, select appropriate letter(s):

* Other (Specify):

* 3. Date Received: 03/15/2023

4. Applicant Identifier: TA2-028-E

5a. Federal Entity Identifier:

5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name: Public Utility District 1 of Snohomish County

* b. Employer/Taxpayer Identification Number (EIN/TIN): 91-6001034

* c. UEI: EM4RX1ZLK8K5

d. Address:

* Street1: 2320 California Street
Street2:
* City: Everett
County/Parish: SNOHOMISH
* State: WA: Washington
Province:
* Country: USA: UNITED STATES
* Zip / Postal Code: 98201-3750

e. Organizational Unit:

Department Name:

Division Name:

f. Name and contact information of person to be contacted on matters involving this application:

Prefix: Ms.
* First Name: Kimberly
Middle Name:
* Last Name: Johnston
Suffix:

Title: Director of Govt/External Affairs Strategy

Organizational Affiliation: Snohomish County PUD

* Telephone Number: 4253596676
Fax Number:

* Email: KDJohnston@snopud.com

Application for Federal Assistance SF-424

*** 9. Type of Applicant 1: Select Applicant Type:**

D: Special District Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

National Energy Technology Laboratory

11. Catalog of Federal Domestic Assistance Number:

81.254

CFDA Title:

Grid Infrastructure Deployment and Resilience

*** 12. Funding Opportunity Number:**

DE-FOA-0002740

* Title:

BIL Grid Resilience and Innovation Partnerships (GRIP)

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

Add Attachment | Delete Attachment | View Attachment

*** 15. Descriptive Title of Applicant's Project:**

Snohomish County PUD’s Secure Modern Automated and Reliable Technology Project (SnoSMART)

Attach supporting documents as specified in agency instructions.

Add Attachments | Delete Attachments | View Attachments

Application for Federal Assistance SF-424

16. Congressional Districts Of:

* a. Applicant: WA-008

* b. Program/Project: WA-008

Attach an additional list of Program/Project Congressional Districts if needed.

1234-WA-Congressional Districts.docx | Add Attachment | Delete Attachment | View Attachment

17. Proposed Project:

* a. Start Date: 11/01/2023

* b. End Date: 10/31/2028

18. Estimated Funding ($):

* a. Federal	30,000,000.00
* b. Applicant	30,000,000.00
* c. State	0.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	60,000,000.00

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

☐ a. This application was made available to the State under the Executive Order 12372 Process for review on .

☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review.

☒ c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**

☐ Yes ☒ No

If "Yes", provide explanation and attach

Add Attachment | Delete Attachment | View Attachment

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 18, Section 1001)**

☒ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: Ms.

* First Name: Kimberly

Middle Name:

* Last Name: Johnston

Suffix:

* Title: Director of Govt/External Affairs Strategy

* Telephone Number: 425-359-6676

Fax Number:

* Email: KDJohnston@snopud.com

* Signature of Authorized Representative: Kim Johnston

* Date Signed: 03/15/2023

BUDGET INFORMATION - Non-Construction Programs

OMB Number: 4040-0006
Expiration Date: 02/28/2025

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. BIL – Grid Resilience and Innovation Partnerships (GRIP)	DE-FOA-0002740	$	$	$ 3,283,975.50	$ 3,283,975.50	$ 6,567,951.00
2.						
3.						
4.						
5. Totals		$	$	$ 3,283,975.50	$ 3,283,975.50	$ 6,567,951.00

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SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY (1)	(2)	(3)	(4)	Total (5)
	BIL – Grid Resilience and Innovation Partnerships (GRIP)				
a. Personnel	$ 16,843,457.00	$	$	$	$ 16,843,457.00
b. Fringe Benefits	10,274,509.00				10,274,509.00
c. Travel					
d. Equipment	18,924,719.00				18,924,719.00
e. Supplies					
f. Contractual	11,626,000.00				11,626,000.00
g. Construction					
h. Other	2,361,062.00				2,361,062.00
i. Total Direct Charges (sum of 6a-6h)	60,029,747.00				$ 60,029,747.00
j. Indirect Charges					$
k. TOTALS (sum of 6i and 6j)	$ 60,029,747.00	$	$	$	$ 60,029,747.00
7. Program Income	$	$	$	$	$

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SECTION C - NON-FEDERAL RESOURCES

(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e)TOTALS
8. BIL – Grid Resilience and Innovation Partnerships (GRIP)	$ 30,014,873.00	$	$	$ 30,014,873.00
9.				
10.				
11.				
12. TOTAL (sum of lines 8-11)	$ 30,014,873.00	$	$	$ 30,014,873.00

SECTION D - FORECASTED CASH NEEDS

	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	$ 3,283,975.50	$ 39,246.00	$ 1,044,163.50	$ 1,804,864.50	$ 395,701.50
14. Non-Federal	$ 3,283,975.50	39,246.00	1,044,163.50	1,804,864.50	395,701.50
15. TOTAL (sum of lines 13 and 14)	$ 6,567,951.00	$ 78,492.00	$ 2,088,327.00	$ 3,609,729.00	$ 791,403.00

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT

(a) Grant Program	FUTURE FUNDING PERIODS (YEARS)			
	(b)First	(c) Second	(d) Third	(e) Fourth
16. BIL – Grid Resilience and Innovation Partnerships (GRIP)	$ 4,958,600.00	$ 8,673,434.00	$ 7,240,306.00	$ 5,858,557.00
17.				
18.				
19.				
20. TOTAL (sum of lines 16 - 19)	$ 4,958,600.00	$ 8,673,434.00	$ 7,240,306.00	$ 5,858,557.00

SECTION F - OTHER BUDGET INFORMATION

21. Direct Charges:

22. Indirect Charges:

23. Remarks:

STATEMENT OF PROJECT OBJECTIVES (SOPO)

Snohomish County PUD's Secure Modern Automated and Reliable Technology Project

SnoSMART Project

A. OBJECTIVES

SnoSMART will move smart grid capabilities from our centralized substations into the distribution grid via two core elements: Distribution Automation Infrastructure (DAI) and a modern SCADA/ADMS system. These elements work together to deliver exciting new capabilities on the SnoPUD grid and move us toward the smart grid our future demands.

The DAI element will rely on our skilled IBEW electrical workers and, engineering and design teams to install hundreds of communications enabled smart grid devices that will deliver:

- Wildfire risk mitigation and prevention in our territory with the highest wildfire risks.
- Improved grid visibility and control capabilities for our grid operators.
- New data analytics possibilities with new grid monitoring devices.

The SCADA/ADMS element will leverage the DAI infrastructure to enable DAI devices to engage in smart grid functions and to deliver:

- Grid reconfiguration in response to outages caused by extreme weather.
- Improved grid voltage regulation in response to grid-wide resource adequacy needs.
- Protection system reconfiguration in response to real-time wildfire risk conditions.
- Improved information and planning tools to integrate electric vehicles, renewable energy resources, and other grid-edge devices.

SnoPUD will leverage and expand on existing community and labor initiatives, and partnerships, to maximize SnoSMART benefits to our communities, with specific focus on Justice 40 disadvantaged communities and tribal lands.

The SnoSMART project requires a smart grid strategy, community support, and a skilled workforce. SnoPUD has everything needed for project success and will be an excellent partner for the Department of Energy.

B. SCOPE OF WORK

The DAI element success depends on close coordination between SnoPUD's engineering staff designing the work, and the represented labor resources doing the construction. The DAI element is comprised of three buckets of work. 1) Development and Testing – Each smart grid equipment type used in the DAI element will be engineered, configured, and tested in SnoPUD's Smart Grid Test Lab. 2) Design – A diverse team will design a substation's optimal location for smart grid devices, identify work locations, acquire permits, and develop engineering settings for each smart grid device. 3) Construction – Smart grid devices inside a substation footprint are built, tested, and commissioned. The DAI element will install hundreds of smart grid switching devices, voltage regulation devices, and wildfire mitigation devices in SnoPUD's northern and eastern parts of its service territory.

The SCADA/ADMS element will replace SnoPUD's existing systems which are not well suited for our smart grid of the future vision. SnoPUD will partner with a SCADA/ADMS software vendor

to replace our aging system with a best-in-class, modern SCADA/ADMS software system. The SCADA/ADMS system replacement will use a phased approach to its plan. Phase one will install the core SCADA/OMS functionality while phase two will install a modern ADMS system. The ADMS system will enable the smart grid functions that utilize the DAI equipment. The SCADA/ADMS replacement element will result in a fully functional SCADA/OMS system with advanced ADMS functionality deployed in a demonstration area.

SnoPUD will partner with labor, local government, regulatory, and emergency management organizations to ensure SnoSMART activities align with community priorities and that benefits are realized to the greatest extent by Justice 40 tribes and disadvantaged communities. We will specifically build upon partnerships involving resiliency, clean energy, and decarbonization initiatives and projects already underway.

C. TASKS TO BE PERFORMED

Task 1.0 - Project Management and Planning

Subtask 1.1 – Project Management Plan (PMP):

Within 30 days of award, the Recipient shall submit a Project Management Plan (PMP) to the designated Federal Project Officer (FPO). The Recipient shall not proceed beyond Task 1.0 until the PMP has been accepted by the FPO.

The PMP shall be revised and resubmitted as often as necessary, during the course of the project, to capture any major/significant changes to the planned approach, budget, key personnel, major resources, etc.

The Recipient shall manage and direct the project in accordance with the accepted PMP to meet all technical, schedule and budget objectives and requirements. The Recipient will coordinate activities to effectively accomplish the work. The Recipient will ensure that project plans, results, and decisions are appropriately documented, and that project reporting and briefing requirements are satisfied.

Subtask 1.2: National Environmental Policy Act (NEPA) Compliance

As required, the Recipient shall provide the documentation necessary for NEPA compliance.

Subtask 1.3: Cybersecurity Plan (CSP)*

The CSP shall be revised and resubmitted as often as necessary, during the course of the project, to capture any major/significant changes.

Subtask 1.4: Continuation Briefing(s):

The Recipient will brief DOE on roughly an annual basis to explain the plans, progress and results of the technical effort. The briefing shall also describe performance relative to project success criteria, milestones, and the Go/No-Go Decision point that are documented in the Project Management Plan (PMP).

Task 2.0 – Distribution Automation Infrastructure Project

Subtask 2.1 – Development and Testing

The DAI team will develop the control panel templates and communication settings for each new type of equipment. The scope for this work includes testing protection capabilities and verification in our Smart Grid Test Lab. This work is scheduled for budget periods one through three.

Subtask 2.2 – Smart Switch Design Phase

In the design phase the DAI team will perform detailed design work for each substation region. The design team will identify ideal locations for smart switch devices with input from construction, system operations, and engineering. The team will create construction drawings, acquire necessary permits and create settings for each smart grid device. This work is scheduled for budget periods one through five.

Subtask 2.3 – Smart Switch Install Phase

The DAI team will install and commission smart switches. This cross-functional team effort includes the IBEW crews installing the equipment, verifying functionality, verifying communications, and commissioning each device. This work is scheduled for budget periods one through five.

Subtask 2.4 – Voltage Regulation Deployment Phase

The DAI team will design, engineer, construct, and commission voltage regulation devices. This work is slated for budget periods three through five.

Subtask 2.5 – Wildfire Mitigation Deployment Phase

The DAI team will design, engineer, construct, and commission wildfire mitigation devices. This work is slated for budget periods three through five.

Task 3.0 – SCADA/ADMS Upgrade Project

The SCADA/ADMS project element is divided into two project phases, SCADA and ADMS. The SCADA phase precedes the ADMS phase, but the tasks required for successful completion are largely the same for both project phases. The timing is different between the SCADA and ADMS phases and are called out in the subtasks below.

Subtask 3.1 – Initiate Phase

The SCADA/ADMS teams negotiate and sign a contract with the SCADA/ADMS vendor, establish teams, refine project schedule, and define system architecture. SCADA and ADMS subtasks are in budget period one.

Subtask 3.2 – Define Phase

The SCADA/ADMS team will define use cases, business process, and identify system requirements and customizations. SCADA subtask is in budget period two and ADMS is in budget period four.

Subtask 3.3 – Design Phase

The SCADA/ADMS teams will hold design workshops for all software modules, computer hardware, data models, and enterprise system integrations. Designs are reviewed and approved by vendor and team. SCADA subtask is in budget period two and ADMS is in budget period four.

Subtask 3.4 – Install Phase

The SCADA/ADMS team will order and install computer hardware and software. SCADA subtask is in budget period two and ADMS is in budget period four.

Subtask 3.5 – Build Phase

The SCADA/ADMS team will create interfaces to enterprise systems, and data models are built. SCADA subtask is in budget period three and ADMS is in budget period five.

Subtask 3.6 – Test Planning Phase

The SCADA/ADMS team will develop test cases and prepare for software acceptance tests. SCADA subtask is in budget period three and ADMS is in budget period four.

Subtask 3.7 – Testing Phase

The SCADA/ADMS team will verify software meets design criteria and all integrations are complete. SCADA subtask is in budget period three and ADMS is in budget period five.

Subtask 3.8 – Training Phase

The SCADA/ADMS team will receive software training and train all SnoPUD end users. SCADA subtask is in budget period four and ADMS is in budget period five.

Subtask 3.9 – Cutover Phase

The SCADA/ADMS team will prepare for and switch over to the new SCADA/ADMS system. SCADA subtask is in budget period four and ADMS is in budget period five.

Task 4.0 – Community Benefits Plan

Subtask 4.1 – Community and Workforce Engagement

Partner with labor, tribal, regulatory, community, local government, and emergency management agencies and organizations to maximize project benefits and mitigate impacts for communities, with special attention on disadvantaged communities (DACs). Budget periods one through five.

Subtask 4.2 – Investing in the American Workforce

Develop a workforce strategy building on SnoPUD's workforce development partnership with our labor union by increasing our engagement with educational and community-based organizations. Budget period one.

Subtask 4.3 – Diversity, Equity, Inclusion and Accessibility

Expand partnerships with community workforce organizations to lower barriers to underrepresented sectors. Partners include tribal, high school and college institutions with workforce initiatives. Budget period one.

Subtask 4.4 – Justice 40 Initiative

Monitor and report on metrics measuring increase in energy resilience and decrease in energy burden to Justice 40 communities throughout the SnoPUD service territory. Budget periods four and five.

D. DELIVERABLES

Subtask 1.1: Project Management Plan

Subtask 1.3 – Cybersecurity Plan

Subtask 1.4 – Pre-Continuation Briefing Document(s)

Task 2 and 3 – Go/No-Go Decision Briefing and Documentation

In addition to the deliverables listed above, the Recipient shall submit all periodic, topical, final, and other reports in accordance with the Federal Assistance Reporting Checklist and accompanying instructions.

BRIEFINGS/TECHNICAL PRESENTATIONS

The Recipient shall prepare, and present periodic briefings, technical presentations and demonstrations as requested by the Federal Project Officer, which may be held at a DOE or the Recipient's facility, other mutually agreeable location, or via webinar. Such meetings may include all or a combination of the following:

Kickoff Briefing - Not more than 30 days after submission of the Project Management Plan, the Recipient shall prepare and present a project summary briefing as part of a Project Kickoff Meeting.

Pre-Continuation Briefing - Not less than 90 days prior to the planned start of a budget period, the Recipient shall brief the DOE on the results to date, and their plans for the subsequent periods of work. The DOE will consider the information from this briefing, as well as the content of deliverables submitted to date, prior to authorizing continuing the project.

Final Project Briefing - Not less than 30 days prior to the end of the project, the Recipient shall prepare and present a Final Project Briefing on the results and accomplishments of the entire project.

Other Briefings – The Recipient shall prepare and present technical, financial, and/or administrative briefings as requested by the DOE. Additionally, the DOE may require Recipients to make technical presentations at national and/or industry conferences.

NETL F 451.1-1/3
Revised: 12/3/2014
Reviewed: 12/3/2014
(Previous Editions Obsolete)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

I. INSTRUCTIONS

The proposer shall prepare this Environmental Questionnaire (EQ) as accurately and completely as possible. Supporting information can be provided as attachments. The proposer must identify the location of the project and specifically describe the activities that would occur at that location. The proposer must provide specific information and quantities, regarding air emissions, wastewater discharges, solid wastes, etc., to facilitate the necessary review. In addition, the proposer must submit with this EQ a FINAL copy of the project's statement of work (SOW) or statement of project objective (SOPO) that will be used in the contract/agreement between the proposer and the U.S Department of Energy (DOE).

II. QUESTIONNAIRE

A. PROJECT SUMMARY

1. Solicitation/Project Number: 40107 Proposer: Snohomish County PUD
2. This Environmental Questionnaire pertains to a: X Recipient or Prime Contractor ☐ Sub-recipient or Subcontractor
3. Principal Investigator: John Hieb Telephone Number: 425.783.4395
4. Project Title: Snohomish County PUD's Secure Modern Automated and Reliable Technology Project (SnoSMART)
5. Expected Project Duration: 2023 - 2028
6. Location of Activities covered by **this** Environmental Questionnaire: (City/Township, County, State): Rural and Tribal regions of northern and eastern Snohomish County, Washington, and Camano Island in Island County, Washington.
7. List the full scope of activities planned (only for the location that is the subject of this Environmental Questionnaire).

   The SnoSMART project is an infrastructure and software project meant to improve SnoPUD's system reliability, mitigate wildfire risks, and enable demand management. This approximately $60 million project will deploy hundreds of wireless-connected smart grid devices to our distribution grid and upgrade the software tools to operate them. The SnoSMART project will revolutionize system visibility and control for our grid operators, further prepare the grid for electric vehicle adoption, and enhance our ability to add distributed energy resources through advanced system planning.

   Distribution Automation Infrastructure (DAI): The first element of the SnoSMART project proposes the installation of hundreds of communication-enabled smart grid devices including reclosers, switches, regulators, and capacitor banks composing our Distribution Automation Infrastructure. These smart grid devices will be installed in our more rural and Tribal communities in the heavily treed northern and eastern portions of our service territory. The focus on these areas is to maximize reliability and wildfire risk mitigation benefits.

   Modern SCADA / ADMS System: The second element of the SnoSMART project proposes the installation of a modern SCADA / ADMS system. The DAI will dramatically increase the information and data our grid operators receive. The SCADA / ADMS system will unlock the potential of the DAI by cohesively presenting the new information and insights to grid operators in real-time while enabling smart-grid functions like Fault Location Isolation and Service Restoration (FLISR) and Voltage and VAR Optimization (VVO).

   These two distinct elements work together to deliver exciting new capabilities on the SnoPUD grid and move us toward the smart grid our future demands.

8. List all other locations where work would be performed by the primary contractor of the project and subcontractor(s). Each of the following must have an individual Environmental Questionnaire.

Subcontractor or sub-recipient	Location of activities for this project
N/A	See attached "Location of Work Spreadsheet".

9. Identify and select the checkbox with the predominant project work activities under Group A, B, or C

Group A

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

☐ Routine administrative, procurement, training, and personnel actions. Contract activities/awards for management support, financial assistance, and technical services in support of agency business, programs, projects, and goals. Literature searches and information gathering, material inventories, property surveys; data analysis, computer modeling, analytical reviews, technical summary, conceptual design, feasibility studies, document preparation, data dissemination, and paper studies. Technical assistance including financial planning, assistance, classroom training, public meetings, management training, survey participation, academic contribution, technical consultation, and stakeholders surveys. Workshop and conference planning, preparation, and implementation which may involve promoting energy efficiency, renewable energy, and energy conservation.

STOP! ***If all work activities related to this project can be classified and described within categories under Group A, proceed directly to Section III CERTIFICATION BY PROPOSER. No additional information is required.***
If project work activities are described in either Group(s) B or C; then continue filling out questionnaire.

Group B

☐ Laboratory Scale Research, Bench Scale Research, Pilot Scale Research, Proof-of-Concept Scale Research, or Field Test Research. Work DOES NOT involve new building/facilities construction and site excavation/groundbreaking activities. This work typically involves routine operation of existing laboratories, commercial buildings/properties, offices and homes, project test facilities, factories/power plants, vehicles test stands and components, refueling facilities, utility systems, or other existing structures/facilities. Work will NOT involve major change in facilities missions and operations, land use planning, new/modified regulatory/operating permit requirements. Includes work specific to routine DOE Site operations and Lab research work activities, but NOT building construction and site preparation. DOE work typically involves laboratory facilities and lab equipment operations, buildings and grounds management activities; and buildings and facilities maintenance, repairs, reconfiguration, remodeling, equipment use and replacement.

Group C

X Pilot Test Facilities Construction, Pilot Scale Research, Field Scale Demonstration, or Commercial Scale Application. Work typically involves facility construction, site preparation/excavation/groundbreaking, and/or demolition. This work would include construction, retrofit, replacement, and/or major modifications of laboratories, test facilities, energy system prototypes, and power generation infrastructure. Work may also involve construction and maintenance of utilities system right-of-ways, roads, vehicle test facilities, commercial buildings/properties, fuel refinery/mixing facilities, refueling facility, power plants, underground wells, and pipelines, and other types of energy research related facilities. This work may require new or modified regulatory permits, environmental sampling and monitoring requirements, master planning, public involvement, and environmental impact review. Includes work specific to DOE Site Operations and Lab operation activities involving building and facilities construction, replacement, decommissioning/demolition, site preparation, land use changes, or change in research facilities mission or operations.

B. PROPOSED PROJECT ALTERNATIVES

1. If applicable, list any project alternatives considered to achieve the project objectives.

As a public agency, all actions considered to achieve project objectives undergo due diligence to ensure we continue to be good stewards of our customer's resources. Infrastructure and software design includes an evaluation of the available technology, compatibility with our system and cost of procurement and installation. Alternatives to the proposed project including the following:

1. Business as usual/no upgrades – This is not a viable alternative, as wildfire risks, energy demand concerns and reliability concerns require mitigation to fulfill our requirement of providing safe, reliable, efficient and cost-effective power to our customers. Furthermore, by not implementing available technology for grid management, Snohomish County PUD would be lagging best management practices which would lead to more expensive and extensive upgrades in the future.

2. Implement infrastructure and software upgrades in a phased approach as funding allows – this would significantly increase the time required to implement necessary upgrades. As a result, elevated risks due to wildfires, demands and

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

reliability would remain while upgrades are in progress. Using only local funds would increase the time required for the upgrades from 5 years to an estimated 20 years.

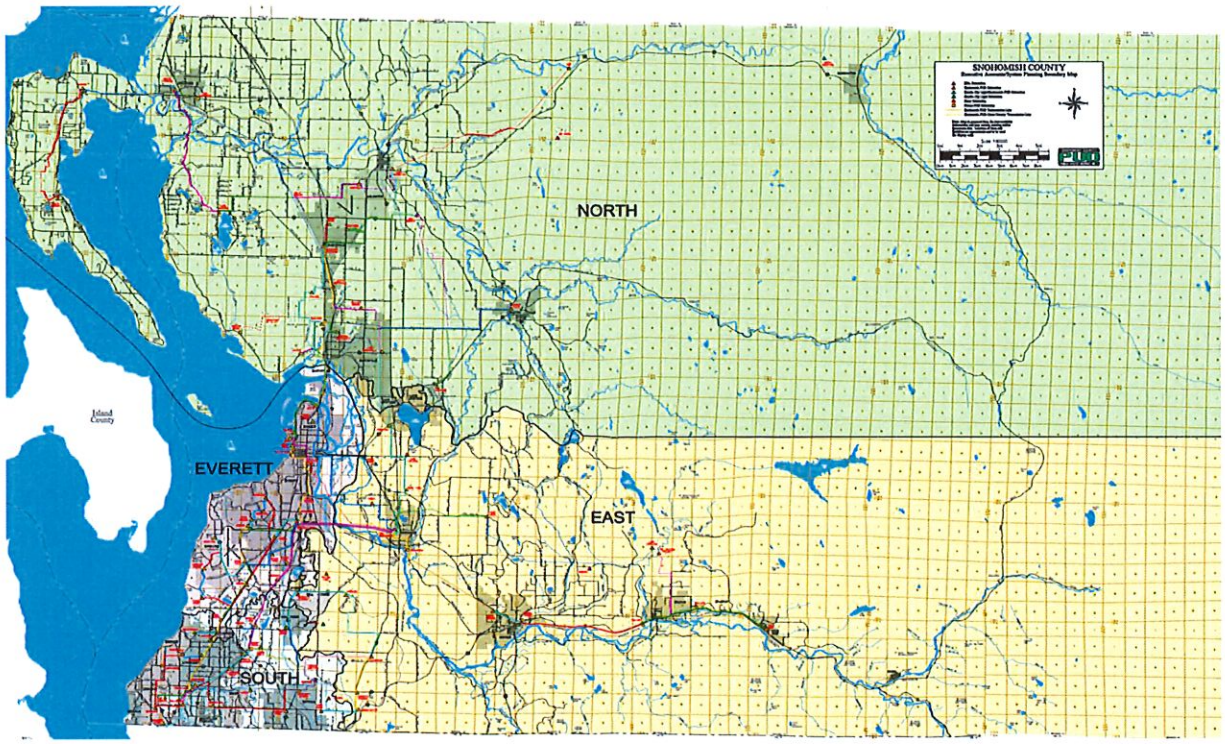
C. PROJECT LOCATION

1. Provide a brief description of the project location (physical location, surrounding area, adjacent structures).

The infrastructure element of this project includes installation of hundreds of communication-enabled smart grid devices including reclosers, switches, regulators, and capacitor banks composing our Distribution Automation Infrastructure. These smart grid devices will be installed in our more rural and Tribal communities in the heavily treed northern and eastern portions of our service territory. The focus on these areas is to maximize reliability and wildfire risk mitigation benefits. Existing infrastructure consisting of utility poles and distribution wires will be utilized whenever possible.

2. **Attach** a project site location map of the project work area.

Distribution Automation Infrastructure will be deployed in the NORTH and EAST areas, Snohomish County and Camano Island, Washington



D. ENVIRONMENTAL IMPACTS

NEPA procedures require evaluations of possible effects (including land use, energy resource use, natural, historic and cultural resources, and pollutants) from proposed projects on the environment.

1. Land Use

a. Characterize present land use where the proposed project would be located.

□ Urban	X Industrial	X Commercial	X Agricultural
X Suburban	X Rural	X Residential	□ Research Facilities

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

X Forest ☐ University Campus ☐ Other: _____

b. Identify the total size of the facility, structure, or system and what portion would be used for the proposed project.

The structure included in this project is the existing electrical distribution system including poles, wires, equipment and necessary appurtenances. No increase in number of poles or miles of wires is anticipated to be necessary to support distribution automation infrastructure equipment. The proposed project impacts the entire system.

c. Describe planned construction, installation, and/or demolition activities, i.e., roads, utilities system right-of-ways, parking lots, buildings, laboratories, storage tanks, fueling facilities, underground wells, pipelines, or other structures.
X No construction would be anticipated for this project.

The proposed project consists of acquisition, installation, operation, modification and removal of electricity distribution control and monitoring devices for grid demand and response, communication systems, data processing equipment and similar electronic equipment. The majority of the equipment would be installed on existing poles. If needed, poles may be replaced to accommodate weight of the replacement or additional equipment.

d. Describe how land use would be affected by operational activities associated with the proposed project.
X No land areas would be affected.

All activities included in the proposed project will occur on previously disturbed or developed land.

e. Describe any plans to reclaim areas that would be affected by the proposed project.
X No land areas would be affected.

f. Would the proposed project affect any unique or unusual landforms (e.g., cliffs, waterfalls, etc.)?
X No ☐ Yes (describe)

g. Would the proposed project be located in or near local, state, or federal parks; forests; monuments; scenic waterways; wilderness; recreation facilities; or tribal lands? ☐ No X Yes (describe)

The proposed project includes numerous local and state parks, water resources including beaches, lakes, rivers and streams, and wilderness and other recreational resources and Tribal lands in Snohomish County and Camano Island, Island County, Washington. No increase in number of poles or miles of distribution wire is anticipated in support of the proposed project.

2. Construction Activities and/or Operation

a. Identify project structure(s), power line(s), pipeline(s), utilities system(s), right-of-way(s) or road(s) that will be constructed and clearly mark them on a project site map or topographic map as appropriate. X None

The proposed project consists of using existing infrastructure to install wireless-connected smart grid devices to our distribution grid and software upgrades to operate the devices.

b. Would the proposed project require the construction of waste pits or settling ponds?
X No ☐ Yes (describe and identify location, and estimate surface area disturbed)

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c. Would the proposed project affect any existing body of water? X No ☐ Yes (describe)

Existing poles will be utilized for the proposed projects. In the event that a pole requires up-grading to accommodate replacement equipment, the project will be designed to avoid any bodies of water.

d. Would the proposed project impact a floodplain or wetland? X No ☐ Yes (describe)

Existing poles will be utilized for the proposed projects. In the event that a pole requires up-grading to accommodate replacement equipment, the project will be designed to avoid any floodplains or wetlands, or mitigated if avoidance is not possible.

e. Would the proposed project potentially cause runoff/sedimentation/erosion? ☐ No X Yes (describe)

Potential temporary impact during installation of replacement utility poles only. Best management practices for land disturbing activities would be employed during installation.

f. Would the proposed project include activities located on perma-frost, near fault zones, or involve fracturing, well drilling, geologic stimulation, sequestration, active seismic data collection, and/or deepwater operations?
X No ☐ Yes (describe)

g. Would the proposed project involve any of the following: nanotechnology; recombinant DNA or genetic engineering; facility decommissioning or disposition of equipment/materials; or management of radioactive wastes/materials?
☐ No X Yes (describe)

The proposed project will replace existing manual equipment such as electromechanical reclosers, regulators and capacitor banks with smart devices. Equipment that is removed will be retrofitted if practical, or disposed of according to local and federal environmental requirements.

3. Biological Resources

a. Identify any State or Federally listed endangered or threatened plant or animal species potentially affected by the proposed project.
X None

Attached is a list of species known to be endangered or threatened in Snohomish or Island Counties under State or Federal Endangered Species Regulations as reported using the Washington State Priority Habitats and Species List Database.

The proposed project will utilize existing infrastructure for poles and wires. Avoiding impact to threatened or endangered species will be included in each design phase.

b. Would any designated critical habitat be affected by the proposed project? X No ☐ Yes (describe)

Existing poles will be utilized for the proposed projects. In the event that a pole requires up-grading to accommodate replacement equipment, the project will be designed to avoid any critical habitats.

c. Describe any impacts that construction would have on any other types of sensitive or unique habitats.
X No planned construction ☐ No habitats ☐ None ☐ Impact (describe)

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d. Would any foreign substances/materials be introduced into ground or surface waters, soil, or other earth/geologic resource because of project activities? How would these foreign substances/materials affect the water, soil, biota, and geologic resources? X No □ Yes (describe)

e. Would any migratory animal corridors be impacted or disrupted by the proposed project? X No □ Yes (describe)

4. Socioeconomic and Infrastructure Conditions

a. Would local socio-economic changes result from the proposed project? X No □ Yes (describe)

b. Would the proposed project generate increased traffic use of roads through local neighborhoods, urban or rural areas?
X No □ Yes (describe)

c. Would the proposed project require new transportation access (roads, rail, etc.)? Describe location, impacts, costs.
X No □ Yes (describe)

d. Would the proposed project create a significant increase in local energy usage? X No □ Yes (describe)

5. Historical/Cultural Resources

a. Describe any historical, archaeological, or cultural sites in the vicinity of the proposed project; note any sites included on the National Register of Historic Places. X None

Existing poles will be utilized for the proposed projects. In the event that a pole requires up-grading to accommodate replacement equipment, the project will be designed to avoid any historical, archaeological or cultural sites.

b. Would construction or operational activities planned under the proposed project disturb any historical, archaeological, or cultural sites? X No planned construction □ No historic sites □ Yes (describe) X No Impact (discuss)

Existing poles will be utilized for the proposed projects. In the event that a pole requires up-grading to accommodate replacement equipment, the project will be designed to avoid any historical, archaeological or cultural sites.

c. Has the State Historic Preservation Office been contacted with regard to this project? X No □ Yes (describe)

d. Would the proposed project interfere with visual resources (e.g., eliminate scenic views) or alter the present landscape?
X No □ Yes (describe)

e. Would the proposed project be located on or adjacent to tribal lands, lands considered to be sacred, or lands used for traditional purposes? Describe any known tribal sensitivities for the proposed project area.

The proposed project includes Tribal lands, lands considered to be sacred or lands used for traditional purposes. Existing poles will be utilized for the equipment installation . In the event that a pole requires up-grading to accommodate replacement equipment, the project will be designed to avoid impact to Tribal lands.

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6. Atmospheric Conditions/Air Quality

a. Identify air quality conditions in the immediate vicinity of the proposed project with regard to attainment of National Ambient Air Quality Standards (NAAQS). This information is available under the Green Book Non-Attainment Areas for Criteria Pollutants located at http://www.epa.gov/air/oaqps/greenbk/astate.html

	Attainment	Non-Attainment
1-hour Ozone	X	
PM 2.5	X	
PM 10	X	
Carbon Monoxide	X	
Sulfur Dioxide	X	
Lead	X	
Nitrogen Dioxide	X	

b. Would proposed project require issuance of new or modified local, state, or federal air permits to perform project related work and activities? X No □ Yes (describe)

c. Would the proposed project be in compliance with local and state air quality requirements? X Yes
If not, please explain.

d. Would the proposed project be classified as either a New Source or a major modification to an existing source?
X No □ Yes (describe)

e. What types of air emissions, including fugitive emissions, would be anticipated from the proposed project, and what would be the maximum annual rate of emissions for the project?

	Maximum per Year	Total for Project
□ SO_x	N/A	N/A
□ NO_x	N/A	N/A
□ PM - 2.5	N/A	N/A
□ PM - 10	N/A	N/A
□ CO	N/A	N/A
□ CO_2	N/A	N/A
□ Lead	N/A	N/A
□ H_2S	N/A	N/A
□ Organic solvent vapors or other volatile organic compounds--List: N/A		

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□ Hazardous air pollutants -- List: N/A
□ Other -- List: N/A
X None

f. Would any types of emission control or particulate collection devices be used?
X No □ Yes (describe, including collection efficiencies)

g. How would emissions be vented?

N/A

7. Hydrologic Conditions/Water Quality

a. What nearby water bodies may be affected by the proposed project? Provide distance(s) from the project site.

No water bodies will be affected by the proposed project.

b. What sources would supply potable and process water for the proposed project? None needed

c. Quantify the wastewater that would be generated by the proposed project.

		Gallons/day	Gallons/year
□	Non-contact cooling water	N/A	N/A
□	Process water	N/A	N/A
□	Sanitary	N/A	N/A
□	Other -- describe:	N/A	N/A
X	None		

d. What would be the major components of <u>each</u> type of wastewater (e.g., coal fines)? X No wastewater produced

e. Identify the local treatment facility that would receive wastewater from the proposed project.
X No discharges to local treatment facility

f. Describe how wastewater would be collected and treated. X No wastewater produced

g. Would any run-off or leachates be produced from storage piles or waste disposal sites? X No □ Yes (describe source)

h. Would project require issuance of new or modified water permits to perform project work or site development activities?
X No □ Yes (describe)

i. Where would wastewater effluents from the proposed project be discharged? X No wastewater produced

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j. Would the proposed project be permitted to discharge effluents into an existing body of water?
X No □ Yes (describe water use and effluent impact)

k. Would a new or modified National Pollutant Discharge Elimination System (NPDES) permit be required?
X No □ Yes (describe)

l. Would the proposed project adversely affect the quality or movement of groundwater? X No □ Yes (describe)

m. Would the proposed project require issuance of an Underground Injection Control (UIC) permit?
X No □ Yes (describe)

n. Would the proposed project be located in or near a wellhead protection area, drinking water protection area, or above a sole source aquifer or underground source of drinking water (USDW)?
X No □ Yes (describe)

The proposed project will utilize existing infrastructure including poles and wires. Any upgrades to poles will be designed to avoid wellhead protection areas, drinking water protection areas, sole source aquifers and underground source of drinking water.

8. Solid and Hazardous Wastes

a. Identify and estimate wastes that would be generated from the project. Solid wastes are defined as any solid, liquid, semi-solid, or contained gaseous material that is discarded, has served its intended purpose, or is a manufacturing or mining by-product (See EPA Municipal Solid Waste and Municipal Solid Waste by State).

	Annual Quantity
□ **Municipal solid waste (e.g., paper, plastic, etc.)**	N/A
□ **Coal or coal by-products**	**N/A**
□ **Other -- Identify:**	**N/A**
□ **Hazardous waste – Identify:**	**N/A**
X None	

b. Would project require issuance of new or modified solid waste and/or hazardous waste related permits to perform project work activities? X No □ Yes (explain)

c. How and where would solid waste disposal be accomplished?
X None generated
□ On-site (identify and describe location)
□ Off-site (identify location and describe facility and treatment)

d. How would wastes for disposal be transported?

None generated

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e. Describe hazardous wastes that would be generated, treated, handled, or stored under this project. Hazardous waste information can be found at EPA Hazardous Waste website. X None

f. How would hazardous or toxic waste be collected and stored? X None used or produced

g. If hazardous wastes would require off-site disposal, have arrangements been made with a certified TSD (Treatment, Storage, and Disposal) facility?
X Not required □ Arrangements not yet made □ Arrangements made with a certified TSD facility (identify)

9. Health/Safety Factors

a. Identify hazardous or toxic materials that would be used in the proposed project.
X None □ Hazardous or toxic materials that would be used (identify):

b. Describe the potential impacts of this project's hazardous materials on human health and the environment.
X None

c. Would there be any special physical hazards or health risks associated with the project? X No □ Yes (describe)

No new or additional physical or health hazards exists due to the proposed project.

d. Does a worker safety program exist at the location of the proposed project? □ No X Yes (describe)

The District's Accident Prevention Manual applies to any employee activities associated with the proposed project.

e. Would additional safety training be necessary for any new laboratory, equipment, or processes involved with the project?
X No □ Yes (describe)

f. Describe any increases in ambient noise levels to the public from construction and operational activities.
X None □ Increase in ambient noise level (describe)

g. Would project construction result in the removal of natural or other barriers that act as noise screens?
X No construction planned □ No □ Yes (describe)

h. Would hearing protection be required for workers? □ No X Yes (describe)

The use of hand tools may exceed safe noise levels, requiring workers to wear hearing protection during installation only. After installation, the only increase in noise levels is during operation of reclosers. This noise increase is minimal and temporary.

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10. Environmental Restoration and/or Waste Management

a. Would the proposed project include CERCLA removals or similar actions under RCRA or other authorities?
X No □ Yes (describe)

b. Would the proposed project include siting, construction, and operation of temporary pilot-scale waste collection and treatment facilities or pilot-scale waste stabilization and containment facilities? X No □ Yes (describe)

c. Would the proposed project involve operations of environmental monitoring and control systems?
X No □ Yes (describe)

d. Would the proposed project involve siting, construction, operation, or decommissioning of a facility for storing packaged hazardous waste for 90 days or less? X No □ Yes (describe)

E. REGULATORY COMPLIANCE

1. For the following laws, describe any existing permits, new or modified permits, manifests, responsible authorities or agencies, contacts, etc., that would be required for the proposed project

a. Resource Conservation and Recovery Act (RCRA): X None □ New Required □ Modification Required
Describe:

b. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA):
X None □ New Required □ Modification Required
Describe:

c. Toxic Substance Control Act (TSCA): X None □ New Required □ Modification Required
Describe:

d. Clean Water Act (CWA): X None □ New Required □ Modification Required
Describe:

e. Underground Storage Tank Control Program (UST): X None □ New Required □ Modification Required
Describe:

f. Underground Injection Control Program (UIC): X None □ New Required □ Modification Required
Describe:

g. Clean Air Act (CAA): X None □ New Required □ Modification Required
Describe:

h. Endangered Species Act (ESA): X None □ New Required □ Modification Required
Describe:

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i.	Floodplains and Wetlands Regulations: Describe:	X	None	□	New Required	□	Modification Required
j.	Fish and Wildlife Coordination Act (FWCA): Describe:	X	None	□	New Required	□	Modification Required
k.	National Historic Preservation Act (NHPA): Describe:	X	None	□	New Required	□	Modification Required
l.	Coastal Zone Management Act (CZMA): Describe:	X	None	□	New Required	□	Modification Required

2. Identify any other environmental laws and regulations (Federal, state, and local) for which compliance would be necessary for this project, and describe the permits, manifests, and contacts that would be required.

None anticipated. The proposed project utilizes existing infrastructure including poles and wires.

F. DESCRIBE ANY ISSUES THAT WOULD GENERATE PUBLIC CONTROVERSY REGARDING THE PROPOSED PROJECT. □ None

A small segment of the population continues to express concerns regarding perceived health risks from electromagnetic fields (EMF). The proposed project will not increase EMF beyond existing levels.

G. WOULD THE PROPOSED PROJECT PRODUCE ADDITIONAL DEVELOPMENT, OR ARE OTHER MAJOR DEVELOPMENTS PLANNED OR UNDERWAY, IN THE PROJECT AREA?

X No □ Yes (describe)

Unknown. Any major developments planned or underway in the project area are independent of, and unaffected by, the proposed project.

H. SUMMARIZE THE SIGNIFICANT IMPACTS THAT WOULD RESULT FROM THE PROPOSED PROJECT.

X None (provide supporting detail) □ Significant impacts (describe)

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I. PROVIDE A DESCRIPTION OF HOW THE PROJECT WOULD BE DECOMMISSIONED, INCLUDING THE DISPOSITION OF EQUIPMENT AND MATERIALS.

Equipment and materials, including reclosers, regulators, capacitors, poles and wires, are reused or recycled in accordance with state and federal regulations whenever possible. Poles that are no longer in use are removed and holes backfilled.

III. CERTIFICATION BY PROPOSER

I hereby certify that the information provided herein is current, accurate, and complete as of the date shown immediately below.

Signature: Colleen M Murphy Date (mm/dd/yyyy): 03/14/2023

Typed Name: Colleen Murphy

Title: Manager, Environmental Affairs

Organization: Snohomish County PUD

IV. REVIEW AND APPROVAL BY DOE

I hereby certify that I have reviewed the information provided in this questionnaire, have determined that all questions have been appropriately answered, and judge the responses to be consistent with the efforts proposed.

DOE Project Manager

Signature: _____ Date (mm/dd/yyyy): _____

Typed Name: _____

Snohomish County PUD SnoSMART Smart Grid Grant Application

Locations of Work (DE-FOA-0002740)				
Prime or Sub	**Name**	**City**	**State**	**Zip Code + 4**
Prime	Public Utility District No 1 of Snohomish County	Arlington	WASHINGTON	98223-1002 through 98223-9996
Prime	Public Utility District No 1 of Snohomish County	Gold Bar	WASHINGTON	98251-4100 through 98251-9800
Prime	Public Utility District No 1 of Snohomish County	Granite Falls	WASHINGTON	98252-3600 through 98252-9800
Prime	Public Utility District No 1 of Snohomish County	Camano Island	WASHINGTON	98282-4000 through 98282-9551
Prime	Public Utility District No 1 of Snohomish County	Darrington	WASHINGTON	98241-9100 through 98241-9746
Prime	Public Utility District No 1 of Snohomish County	Everett	WASHINGTON	98201-1000 through 98201-9997
Prime	Public Utility District No 1 of Snohomish County	Everett	WASHINGTON	98203-1201 through 98203-7402
Prime	Public Utility District No 1 of Snohomish County	Everett	WASHINGTON	98204-1100 through 98204-9397
Prime	Public Utility District No 1 of Snohomish County	Everett	WASHINGTON	98205-1207 through 98205-7620
Prime	Public Utility District No 1 of Snohomish County	Everett	WASHINGTON	98208-1800 through 98208-9734
Prime	Public Utility District No 1 of Snohomish County	Index	WASHINGTON	98251-9165
Prime	Public Utility District No 1 of Snohomish County	Lake Stevens	WASHINGTON	98258-1402 through 98258-9818
Prime	Public Utility District No 1 of Snohomish County	Marysville	WASHINGTON	98270-2000 through 98270-9599
Prime	Public Utility District No 1 of Snohomish County	Marysville	WASHINGTON	98271-3406 through 98271-9793
Prime	Public Utility District No 1 of Snohomish County	Monroe	WASHINGTON	98272-1000 through 98272-9805

Prime	Public Utility District No 1 of Snohomish County	Snohomish	WASHINGTON	98290-0900 through 98290-9997
Prime	Public Utility District No 1 of Snohomish County	Snohomish	WASHINGTON	98296-3400 through 98296-9402
Prime	Public Utility District No 1 of Snohomish County	Stanwood	WASHINGTON	98292-1906 through 98292-9850
Prime	Public Utility District No 1 of Snohomish County	Startup	WASHINGTON	98293-9800
Prime	Public Utility District No 1 of Snohomish County	Sultan	WASHINGTON	98294-5000 through 98294-9802
Prime	Public Utility District No 1 of Snohomish County	Tulalip	WASHINGTON	98271-6007 through 98271-9771

Snohomish County PUD SnoSMART Smart Grid Grant Application
Washington State or Federal Threatened or Endangered Species in Snohomish or Island Counties
Source: Washington State Priority Habitats and Species List Database

	Species/ Habitats	State Status	Federal Status
Fishes	Bull Trout/ Dolly Varden	Candidate *	Threatened *
	Chinook Salmon		Threatened (Upper Columbia Spring run is Endangered)
	Chum Salmon		Threatened
	Coho Salmon		Threatened – Lower Columbia
	Rainbow Trout/ Steelhead/ Inland Redband Trout	Candidiate **	Threatened **
	Sockeye Salmon		Threatened – Ozette Lake Endangered – Snake River
	Bocaccio Rockfish		Endangered
	Canary Rockfish		Threatened
	Yelloweye Rockfish		Threatened
Amphibians	Oregon Spotted Frog	Endangered	Threatened
Reptiles	Western Pond Turtle (formerly Pacific Pond Turtle)	Endangered	
Birds	Marbled Murrelet	Threatened	Threatened
	Yellow-billed Cuckoo	Endangered	Threatened
	Northern Spotted Owl (formerly called Spotted Owl)	Endangered	Threatened
	Short-tailed Albatross	Candidate	Endangered
	Tufted Puffin	Endangered	
	Oregon Vesper Sparrow	Endangered	
Mammals	Cascade Red Fox	Endangered	
	Fisher	Endangered	
	Grizzly Bear	Endangered	Threatened
	Lynx	Threatened	Threatened
Invertebrates	Pinto (Northern) Abalone	Endangered	
	Taylor's Checkerspot	Endangered	Endangered

* Bull Trout only
** Steelhead only

Instructions and Summary

Award Number: _____ **Date of Submission:** _____

Award Recipient: _____ **Form submitted by:** _____

(May be award recipient or sub-recipient)

Please read the instructions on each worksheet tab before starting. If you have any questions, please ask your DOE contact!

1. If using this form for award application, negotiation, or budget revision, fill out the blank white cells in workbook tabs a. through j. with total project costs. If using this form for invoice submission, fill out tabs a. through j. with total costs for just the proposed invoice and fill out tab k. per the instructions on that tab.
2. Blue colored cells contain instructions, headers, or summary calculations and should not be modified. Only blank white cells should be populated.
3. Enter detailed support for the project costs identified for each Category line item within each worksheet tab to autopopulate the summary tab.
4. The total budget presented on tabs a. through i. must include both Federal (DOE) and Non-Federal (cost share) portions.
5. All costs incurred by the preparer's sub-recipients, vendors, and Federal Research and Development Centers (FFRDCs), should be entered only in section f. Contractual. All other sections are for the costs of the preparer only.
6. Ensure all entered costs are allowable, allocable, and reasonable in accordance with the administrative requirements prescribed in 2 CFR 200, and the applicable cost principles for each entity type: FAR Part 31 for For-Profit entities; and 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities.
7. Add rows as needed throughout tabs a. through j. If rows are added, formulas/calculations may need to be adjusted by the preparer. Do not add rows to the Instructions and Summary tab. If your project contains more than five budget periods, consult your DOE contact before adding additional budget period rows or columns.
8. ALL budget period cost categories are rounded to the nearest dollar.

BURDEN DISCLOSURE STATEMENT

Public reporting burden for this collection of information is estimated to average 3 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of Information Resources Management Policy, Plans, and Oversight, AD-241-2 - GTN, Paperwork Reduction Project (1910-5162), U.S. Department of Energy 1000 Independence Avenue, S.W., Washington, DC 20585; and to the Office of Management and Budget, Paperwork Reduction Project (1910-5162), Washington, DC 20503.

SUMMARY OF BUDGET CATEGORY COSTS PROPOSED

The values in this summary table are from entries made in subsequent tabs, only blank white cells require data entry

Section A - Budget Summary

	Federal	Cost Share			Total Costs	Cost Share %	Proposed Budget Period Dates
Budget Period 1	$3,283,976	$3,283,976			$6,567,951	50.00%	**January 1, 2024-Dec 31, 2024**
Budget Period 2	$4,958,600	$4,958,600			$9,917,200	50.00%	**January 1, 2025-Dec 31, 2025**
Budget Period 3	$8,673,434	$8,673,434			$17,346,867	50.00%	**January 1, 2026-Dec 31, 2026**
Budget Period 4	$7,240,306	$7,240,306			$14,480,613	50.00%	**January 1, 2027-Dec 31, 2027**
Budget Period 5	$5,858,557	$5,858,557			$11,717,115	50.00%	**January 1, 2028-Dec 31, 2028**
Total	$30,014,873	$30,014,873			$60,029,746	50.00%	

Section B - Budget Categories

CATEGORY	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Total Costs	% of Project	**Comments** (as needed)
a. Personnel	$1,177,479	$3,187,668	$4,457,756	$3,997,409	$4,023,145	$16,843,457	28.06%	
b. Fringe Benefits	$718,262	$1,944,477	$2,719,231	$2,438,420	$2,454,118	$10,274,509	17.12%	
c. Travel	$0	$0	$0	$0	$0	$0	0.00%	
d. Equipment	$1,580,000	$3,252,900	$4,905,023	$5,105,126	$4,081,670	$18,924,719	31.53%	
e. Supplies	$0	$0	$0	$0	$0	$0	0.00%	
f. Contractual								
Sub-recipient	$0	$0	$0	$0	$0	$0	0.00%	
Vendor	$2,906,500	$1,162,600	$4,650,400	$2,325,200	$581,300	$11,626,000	19.37%	
FFRDC	$0	$0	$0	$0	$0	$0	0.00%	
Total Contractual	$2,906,500	$1,162,600	$4,650,400	$2,325,200	$581,300	$11,626,000	19.37%	
g. Construction	$0	$0	$0	$0	$0	$0	0.00%	
h. Other Direct Costs	$185,710	$369,555	$614,458	$614,458	$576,881	$2,361,062	3.93%	
Total Direct Costs	$6,567,951	$9,917,200	$17,346,867	$14,480,613	$11,717,115	$60,029,746	100.00%	
i. Indirect Charges	$0	$0	$0	$0	$0	$0	0.00%	
Total Costs	$6,567,951	$9,917,200	$17,346,867	$14,480,613	$11,717,115	$60,029,746	100.00%	

Additional Explanation (as needed):

a. Personnel

INSTRUCTIONS - PLEASE READ!!!

1. List project costs solely for employees of the entity completing this form. All personnel costs for subrecipients and vendors must be included under f. Contractual.
2. All personnel should be identified by position title and not employee name. Enter the amount of time (e.g., hours or % of time) and the base pay rate and the total direct personnel compensation will automatically calculate. Rate basis (e.g., actual salary, labor distribution report, state civil service rates, etc.) must also be identified.
3. If loaded labor rates are utilized, a description of the costs the loaded rate is comprised of must be included in the Additional Explanation section below. DOE must review all components of the loaded labor rate for reasonableness and unallowable costs (e.g. fee or profit).
4. If a position and hours are attributed to multiple employees (e.g. Technician working 4000 hours) the number of employees for that position title must be identified.
5. Each budget period is rounded to the nearest dollar.

SOPO Task #	Position Title	Budget Period 1			Budget Period 2			Budget Period 3			Budget Period 4			Budget Period 5			Project Total Hours	Project Total Dollars	Rate Basis
		Time (Hrs)	Pay Rate ($/Hr)	Total Budget Period 1	Time (Hrs)	Pay Rate ($/Hr)	Total Budget Period 2	Time (Hrs)	Pay Rate ($/Hr)	Total Budget Period 3	Time (Hrs)	Pay Rate ($/Hr)	Total Budget Period 4	Time (Hrs)	Pay Rate ($/Hr)	Total Budget Period 5			
2	Distribution Engineer	896	$48.24	$43,223	1784	$50.17	$89,503	2800	$52.18	$146,094	2800	$54.26	$151,938	2480	$56.43	$139,956	10760	$570,713	
2	Relay Technician	924	$73.51	$67,923	1636	$76.45	$125,073	2962	$79.51	$235,504	2842	$82.69	$235,001	2824	$86.00	$242,854	11188	$906,355	
2	Protection Engineer	920	$59.41	$54,657	1632	$61.79	$100,835	3062	$64.26	$196,758	2942	$66.83	$196,608	2916	$69.50	$202,666	11472	$751,524	
2	Planning Engineer	90	$73.49	$6,614	180	$76.43	$13,757	660	$79.49	$52,461	660	$82.67	$54,560	654	$85.97	$56,226	2244	$183,619	
2	Wireman	268	$63.10	$16,911	532	$65.62	$34,912	1040	$68.25	$70,979	1040	$70.98	$73,818	1092	$73.82	$80,609	3972	$277,229	
2	Telecom Technician	402	$60.58	$24,353	798	$63.00	$50,277	1560	$65.52	$102,216	1560	$68.14	$106,305	1638	$70.87	$116,085	5958	$399,236	
2	DMS Engineer	154	$73.49	$11,317	308	$76.43	$23,540	642	$79.49	$51,031	642	$82.67	$53,072	640	$85.97	$55,023	2386	$193,983	
2	Automation Engineer	596	$48.24	$28,751	1084	$50.17	$54,384	1820	$52.18	$94,961	1760	$54.26	$95,504	1508	$56.43	$85,102	6768	$358,702	
2	OT Specialist	864	$66.33	$57,309	1656	$68.98	$114,236	2716	$71.74	$194,853	2636	$74.61	$196,678	2256	$77.60	$175,058	10128	$738,134	
2	Control Center Operator	172	$63.37	$10,900	327	$65.90	$21,551	631	$68.54	$43,249	613	$71.28	$43,696	604	$74.13	$44,777	2347	$164,173	
2	Outside Line Foreman	616	$72.41	$44,605	1226	$75.31	$92,326	2016	$78.32	$157,890	2016	$81.45	$164,206	1876	$84.71	$158,915	7750	$617,942	
2	Outside Line Journey Level	616	$64.36	$39,646	1226	$66.93	$82,062	2016	$69.61	$140,337	2016	$72.40	$145,951	1876	$75.29	$141,248	7750	$549,243	
2	Outside Line Journey Level	616	$64.36	$39,646	1226	$66.93	$82,062	2016	$69.61	$140,337	2016	$72.40	$145,951	1876	$75.29	$141,248	7750	$549,243	
2	Equipment Operator	616	$51.13	$31,496	1226	$53.18	$65,193	2016	$55.30	$111,489	2016	$57.51	$115,949	1876	$59.81	$112,213	7750	$436,340	
2	Entry Helper	616	$33.87	$20,864	1226	$35.22	$43,186	2016	$36.63	$73,854	2016	$38.10	$76,808	1876	$39.62	$74,333	7750	$289,044	
2	Entry Helper	616	$33.87	$20,864	1226	$35.22	$43,186	2016	$36.63	$73,854	2016	$38.10	$76,808	1876	$39.62	$74,333	7750	$289,044	
2	Crew Coordinator	134	$75.62	$10,133	266	$78.64	$20,920	520	$81.79	$42,531	520	$85.06	$44,232	546	$88.46	$48,302	1986	$166,118	
2	Outside Line Serviceperson	268	$68.22	$18,283	532	$70.95	$37,745	1040	$73.79	$76,738	1040	$76.74	$79,808	1092	$79.81	$87,150	3972	$299,724	
2	GIS specialist	168	$38.13	$6,405	334	$39.65	$13,243	682	$41.24	$28,123	682	$42.89	$29,248	812	$44.60	$36,216	2678	$113,235	
2	Maps+Records Coordinator	67	$38.86	$2,604	133	$40.41	$5,375	260	$42.03	$10,928	260	$43.71	$11,365	273	$45.46	$12,411	993	$42,683	
2	Drafter	45	$44.54	$2,004	90	$46.32	$4,169	177	$48.17	$8,527	177	$50.10	$8,868	207	$52.11	$10,786	696	$34,354	
2	DAI Project manager	1000	$75.25	$75,250	1000	$78.26	$78,260	1000	$81.39	$81,390	1000	$84.65	$84,646	1000	$88.03	$88,032	5000	$407,578	
1,2,3	Sr. Manager	268	$105.72	$28,333	89	$109.95	$9,785	89	$114.35	$10,177	89	$118.92	$10,584	268	$123.68	$33,146	803	$92,025	
3	SR. OT Specialist	894	$67.19	$60,068	1342	$69.88	$93,776	1789	$72.67	$130,011	1789	$75.58	$135,212	894	$78.60	$70,271	6708	$489,338	
3	OT Specialist	894	$53.56	$47,883	1342	$55.70	$74,753	1789	$57.93	$103,638	1789	$60.25	$107,783	894	$62.66	$56,016	6708	$390,072	
3	Prof. Engineer	0	$75.25	$0	179	$78.26	$14,009	1342	$81.39	$109,226	1789	$84.65	$151,432	1789	$88.03	$157,489	5099	$432,155	
3	OT specialist	0	$53.56	$0	179	$55.70	$9,971	1342	$57.93	$77,743	1789	$60.25	$107,783	1342	$62.66	$84,087	4652	$279,583	
3	OT specialist	0	$53.56	$0	179	$55.70	$9,971	1342	$57.93	$77,743	1342	$60.25	$80,852	447	$62.66	$28,008	3310	$196,574	
3	SR. OT Specialist	0	$67.19	$0	0	$69.88	$0	894	$72.67	$64,969	1342	$75.58	$101,428	894	$78.60	$70,271	3130	$236,668	
3	Sr. OT specialist	0	$67.19	$0	0	$69.88	$0	1789	$72.67	$130,011	268	$75.58	$20,255	894	$78.60	$70,271	2951	$220,538	
3	OT specialist	0	$53.56	$0	0	$55.70	$0	1342	$57.93	$77,743	447	$60.25	$26,931	894	$62.66	$56,016	2683	$160,689	
3	Operator 2	0	$74.46	$0	179	$77.44	$13,861	1342	$80.54	$108,079	1342	$83.76	$112,402	1342	$87.11	$116,898	4205	$351,242	
3	Operator 2	447	$74.46	$33,284	894	$77.44	$69,230	894	$80.54	$71,999	447	$83.76	$37,440	447	$87.11	$38,937	3129	$250,889	
3	Enterprise Architect	224	$105.72	$23,681	716	$109.95	$78,723	358	$114.35	$40,936	179	$118.92	$21,287	179	$123.68	$22,138	1656	$186,766	
3	Sr. Application Analyst	447	$67.19	$30,034	1789	$69.88	$125,011	1789	$72.67	$130,011	1789	$75.58	$135,212	1789	$78.60	$140,620	7603	$560,889	
3	Applications Architect	447	$84.28	$37,673	1610	$87.65	$141,118	1252	$91.16	$114,129	716	$94.80	$67,879	716	$98.60	$70,595	4741	$431,394	
3	Sr. Application Analyst	224	$67.19	$15,051	894	$69.88	$62,471	894	$72.67	$64,969	894	$75.58	$67,568	894	$78.60	$70,271	3800	$280,330	
3	Infrastructure Architect	0	$84.28	$0	1073	$87.65	$94,050	358	$91.16	$32,634	179	$94.80	$16,970	358	$98.60	$35,297	1968	$178,951	
3	Information Security Analyst	112	$67.19	$7,525	447	$69.88	$31,235	447	$72.67	$32,485	447	$75.58	$33,784	447	$78.60	$35,135	1900	$140,165	
3	Applications Architect	224	$84.28	$18,879	1252	$87.65	$109,739	1073	$91.16	$97,812	358	$94.80	$33,940	358	$98.60	$35,297	3265	$295,667	
3	Infrastructure Architect	0	$84.28	$0	1073	$87.65	$94,050	358	$91.16	$32,634	179	$94.80	$16,970	358	$98.60	$35,297	1968	$178,951	
3	Applications Architect	45	$84.28	$3,793	716	$87.65	$62,758	716	$91.16	$65,269	268	$94.80	$25,407	268	$98.60	$26,424	2013	$183,650	
3	Project Manager	447	$67.19	$30,034	894	$69.88	$62,471	537	$72.67	$39,025	537	$75.58	$40,586	1431	$78.60	$112,481	3846	$284,597	
3	Sr. Project Manager	447	$75.25	$33,637	1789	$78.26	$140,007	1789	$81.39	$145,607	1789	$84.65	$151,432	1789	$88.03	$157,489	7603	$628,172	
3	Sr. Application Analyst	134	$67.19	$9,003	894	$69.88	$62,471	894	$72.67	$64,969	537	$75.58	$40,586	358	$78.60	$28,140	2817	$205,169	
3	Sr. Application Analyst	0	$67.19	$0	0	$69.88	$0	0	$72.67	$0	0	$75.58	$0	0	$78.60	$0	0	$0	
3	Sr. Infrastructure Systems Analyst	0	$67.19	$0	1073	$69.88	$74,979	358	$72.67	$26,017	179	$75.58	$13,529	358	$78.60	$28,140	1968	$142,664	
3	Sr. Infrastructure Systems Analyst	0	$67.19	$0	1073	$69.88	$74,979	358	$72.67	$26,017	179	$75.58	$13,529	358	$78.60	$28,140	1968	$142,664	
3	Data & Analytics Engineers	0	$54.64	$0	358	$56.83	$20,344	358	$59.10	$21,157	179	$61.46	$11,002	179	$63.92	$11,442	1074	$63,945	
3	Data Scientist	0	$75.25	$0	716	$78.26	$56,034	716	$81.39	$58,276	179	$84.65	$15,152	358	$88.03	$31,515	1969	$160,977	
3	Sr. Application Analyst	224	$67.19	$15,051	1789	$69.88	$125,011	1789	$72.67	$130,011	894	$75.58	$67,568	537	$78.60	$42,210	5233	$379,851	
3	Sr. Application Analyst	0	$67.19	$0	894	$69.88	$62,471	894	$72.67	$64,969	358	$75.58	$27,058	358	$78.60	$28,140	2504	$182,637	
3	Sr. Application Analyst	0	$67.19	$0	1252	$69.88	$87,487	1252	$72.67	$90,986	537	$75.58	$40,586	358	$78.60	$28,140	3399	$247,199	
3	Sr. Database Administrator	0	$67.19	$0	1073	$69.88	$74,979	358	$72.67	$26,017	179	$75.58	$13,529	358	$78.60	$28,140	1968	$142,664	
1,2,3	HR recruiter	1789	$53.56	$95,819	0	$55.70	$0	0	$57.93	$0	0	$60.25	$0	0	$62.66	$0	1789	$95,819	
1,2,3,4	Grant Coordinator	447	$53.56	$23,941	447	$55.70	$24,899	447	$57.93	$25,895	447	$60.25	$26,931	447	$62.66	$28,008	2235	$129,674	
4	Community Benefit Coordinator	447	$67.19	$30,034	447	$69.88	$31,235	447	$72.67	$32,485	447	$75.58	$33,784	447	$78.60	$35,135	2235	$162,673	
				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
				$0			$0			$0			$0			$0	0	$0	
	Total Personnel Costs	**18825**		**$1,177,479**	**46300**		**$3,187,668**	**65064**		**$4,457,756**	**57153**		**$3,997,409**	**54606**		**$4,023,145**	**241948**	**$16,843,457**	

Additional Explanation (as needed):

b. Fringe Benefits

INSTRUCTIONS - PLEASE READ!!!

1. Fill out the table below by position title. If all employees receive the same fringe benefits, you can show "Total Personnel" in the Labor Type column instead of listing out all position titles.

2. The rates and how they are applied should not be averaged to get one fringe cost percentage. Complex calculations should be described/provided in the Additional Explanation section below.

3. The fringe benefit rates should be applied to all positions, regardless of whether those funds will be supported by Federal Share or Recipient Cost Share.

4. Each budget period is rounded to the nearest dollar.

Labor Type	Budget Period 1			Budget Period 2			Budget Period 3			Budget Period 4			Budget Period 5			Total Project
	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	
Distribution Engineer	$ 43,223	61.00%	$26,366	$ 89,503	61.00%	$54,597	$ 146,094	61.00%	$89,117	$ 151,938	61.00%	$92,682	$ 139,956	61.00%	$85,373	$348,135
Relay Technician	$ 67,923	61.00%	$41,433	$ 125,073	61.00%	$76,294	$ 235,504	61.00%	$143,657	$ 235,001	61.00%	$143,351	$ 242,854	61.00%	$148,141	$552,877
Protection Engineer	$ 54,657	61.00%	$33,341	$ 100,835	61.00%	$61,510	$ 196,758	61.00%	$120,022	$ 196,608	61.00%	$119,931	$ 202,666	61.00%	$123,626	$458,430
Planning Engineer	$ 6,614	61.00%	$4,035	$ 13,757	61.00%	$8,392	$ 52,461	61.00%	$32,001	$ 54,560	61.00%	$33,281	$ 56,226	61.00%	$34,298	$112,007
Wireman	$ 16,911	61.00%	$10,316	$ 34,912	61.00%	$21,296	$ 70,979	61.00%	$43,297	$ 73,818	61.00%	$45,029	$ 80,609	61.00%	$49,172	$169,110
Telecom Technician	$ 24,353	61.00%	$14,855	$ 50,277	61.00%	$30,669	$ 102,216	61.00%	$62,352	$ 106,305	61.00%	$64,846	$ 116,085	61.00%	$70,812	$243,534
DMS Engineer	$ 11,317	61.00%	$6,904	$ 23,540	61.00%	$14,360	$ 51,031	61.00%	$31,129	$ 53,072	61.00%	$32,374	$ 55,023	61.00%	$33,564	$118,329
Automation Engineer	$ 28,751	61.00%	$17,538	$ 54,384	61.00%	$33,174	$ 94,961	61.00%	$57,926	$ 95,504	61.00%	$58,257	$ 85,102	61.00%	$51,912	$218,808
OT Specialist	$ 57,309	61.00%	$34,959	$ 114,236	61.00%	$69,684	$ 194,853	61.00%	$118,860	$ 196,678	61.00%	$119,973	$ 175,058	61.00%	$106,785	$450,262
Control Center Operator	$ 10,900	61.00%	$6,649	$ 21,551	61.00%	$13,146	$ 43,249	61.00%	$26,382	$ 43,696	61.00%	$26,655	$ 44,777	61.00%	$27,314	$100,146
Outside Line Foreman	$ 44,605	61.00%	$27,209	$ 92,326	61.00%	$56,319	$ 157,890	61.00%	$96,313	$ 164,206	61.00%	$100,166	$ 158,915	61.00%	$96,938	$376,944
Outside Line Journey Level	$ 39,646	61.00%	$24,184	$ 82,062	61.00%	$50,058	$ 140,337	61.00%	$85,606	$ 145,951	61.00%	$89,030	$ 141,248	61.00%	$86,161	$335,039
Outside Line Journey Level	$ 39,646	61.00%	$24,184	$ 82,062	61.00%	$50,058	$ 140,337	61.00%	$85,606	$ 145,951	61.00%	$89,030	$ 141,248	61.00%	$86,161	$335,039
Equipment Operator	$ 31,496	61.00%	$19,213	$ 65,193	61.00%	$39,768	$ 111,489	61.00%	$68,008	$ 115,949	61.00%	$70,729	$ 112,213	61.00%	$68,450	$266,167
Entry Helper	$ 20,864	61.00%	$12,727	$ 43,186	61.00%	$26,343	$ 73,854	61.00%	$45,051	$ 76,808	61.00%	$46,853	$ 74,333	61.00%	$45,343	$176,317
Entry Helper	$ 20,864	61.00%	$12,727	$ 43,186	61.00%	$26,343	$ 73,854	61.00%	$45,051	$ 76,808	61.00%	$46,853	$ 74,333	61.00%	$45,343	$176,317
Crew Coordinator	$ 10,133	61.00%	$6,181	$ 20,920	61.00%	$12,761	$ 42,531	61.00%	$25,944	$ 44,232	61.00%	$26,982	$ 48,302	61.00%	$29,464	$101,332
Outside Line Serviceperson	$ 18,283	61.00%	$11,153	$ 37,745	61.00%	$23,024	$ 76,738	61.00%	$46,810	$ 79,808	61.00%	$48,683	$ 87,150	61.00%	$53,162	$182,831
GIS specialist	$ 6,405	61.00%	$3,907	$ 13,243	61.00%	$8,078	$ 28,123	61.00%	$17,155	$ 29,248	61.00%	$17,841	$ 36,216	61.00%	$22,092	$69,073
Maps+Records Coordinator	$ 2,604	61.00%	$1,588	$ 5,375	61.00%	$3,279	$ 10,928	61.00%	$6,666	$ 11,365	61.00%	$6,933	$ 12,411	61.00%	$7,571	$26,036
Drafter	$ 2,004	61.00%	$1,223	$ 4,169	61.00%	$2,543	$ 8,527	61.00%	$5,201	$ 8,868	61.00%	$5,409	$ 10,786	61.00%	$6,579	$20,956
DAI Project manager	$ 75,250	61.00%	$45,903	$ 78,260	61.00%	$47,739	$ 81,390	61.00%	$49,648	$ 84,646	61.00%	$51,634	$ 88,032	61.00%	$53,699	$248,623
Sr. Manager	$ 28,333	61.00%	$17,283	$ 9,785	61.00%	$5,969	$ 10,177	61.00%	$6,208	$ 10,584	61.00%	$6,456	$ 33,146	61.00%	$20,219	$56,135
SR. OT Specialist	$ 60,068	61.00%	$36,641	$ 93,776	61.00%	$57,203	$ 130,011	61.00%	$79,307	$ 135,212	61.00%	$82,479	$ 70,271	61.00%	$42,865	$298,496
OT Specialist	$ 47,883	61.00%	$29,208	$ 74,753	61.00%	$45,599	$ 103,638	61.00%	$63,219	$ 107,783	61.00%	$65,748	$ 56,016	61.00%	$34,170	$237,944
Prof. Engineer	$ -	61.00%	$0	$ 14,009	61.00%	$8,545	$ 109,226	61.00%	$66,628	$ 151,432	61.00%	$92,373	$ 157,489	61.00%	$96,068	$263,615
OT specialist	$ -	61.00%	$0	$ 9,971	61.00%	$6,082	$ 77,743	61.00%	$47,423	$ 107,783	61.00%	$65,748	$ 84,087	61.00%	$51,293	$170,546
OT specialist	$ -	61.00%	$0	$ 9,971	61.00%	$6,082	$ 77,743	61.00%	$47,423	$ 80,852	61.00%	$49,320	$ 28,008	61.00%	$17,085	$119,910
SR. OT Specialist	$ -	61.00%	$0	$ -	61.00%	$0	$ 64,969	61.00%	$39,631	$ 101,428	61.00%	$61,871	$ 70,271	61.00%	$42,865	$144,368
Sr. OT specialist	$ -	61.00%	$0	$ -	61.00%	$0	$ 130,011	61.00%	$79,307	$ 20,255	61.00%	$12,356	$ 70,271	61.00%	$42,865	$134,528
OT specialist	$ -	61.00%	$0	$ -	61.00%	$0	$ 77,743	61.00%	$47,423	$ 26,931	61.00%	$16,428	$ 56,016	61.00%	$34,170	$98,021
Operator 2	$ -	61.00%	$0	$ 13,861	61.00%	$8,455	$ 108,079	61.00%	$65,928	$ 112,402	61.00%	$68,565	$ 116,898	61.00%	$71,308	$214,257
Operator 2	$ 33,284	61.00%	$20,303	$ 69,230	61.00%	$42,230	$ 71,999	61.00%	$43,919	$ 37,440	61.00%	$22,838	$ 38,937	61.00%	$23,752	$153,043
Enterprise Architect	$ 23,681	61.00%	$14,446	$ 78,723	61.00%	$48,021	$ 40,936	61.00%	$24,971	$ 21,287	61.00%	$12,985	$ 22,138	61.00%	$13,504	$113,927
Sr. Application Analyst	$ 30,034	61.00%	$18,321	$ 125,011	61.00%	$76,257	$ 130,011	61.00%	$79,307	$ 135,212	61.00%	$82,479	$ 140,620	61.00%	$85,778	$342,142
Applications Architect	$ 37,673	61.00%	$22,981	$ 141,118	61.00%	$86,082	$ 114,129	61.00%	$69,619	$ 67,879	61.00%	$41,406	$ 70,595	61.00%	$43,063	$263,151
Sr. Application Analyst	$ 15,051	61.00%	$9,181	$ 62,471	61.00%	$38,107	$ 64,969	61.00%	$39,631	$ 67,568	61.00%	$41,217	$ 70,271	61.00%	$42,865	$171,001
Infrastructure Architect	$ -	61.00%	$0	$ 94,050	61.00%	$57,370	$ 32,634	61.00%	$19,907	$ 16,970	61.00%	$10,352	$ 35,297	61.00%	$21,531	$109,160
Information Security Analyst	$ 7,525	61.00%	$4,590	$ 31,235	61.00%	$19,054	$ 32,485	61.00%	$19,816	$ 33,784	61.00%	$20,608	$ 35,135	61.00%	$21,433	$85,501
Applications Architect	$ 18,879	61.00%	$11,516	$ 109,739	61.00%	$66,941	$ 97,812	61.00%	$59,665	$ 33,940	61.00%	$20,703	$ 35,297	61.00%	$21,531	$180,357
Infrastructure Architect	$ -	61.00%	$0	$ 94,050	61.00%	$57,370	$ 32,634	61.00%	$19,907	$ 16,970	61.00%	$10,352	$ 35,297	61.00%	$21,531	$109,160
Applications Architect	$ 3,793	61.00%	$2,313	$ 62,758	61.00%	$38,283	$ 65,269	61.00%	$39,814	$ 25,407	61.00%	$15,498	$ 26,424	61.00%	$16,118	$112,027
Project Manager	$ 30,034	61.00%	$18,321	$ 62,471	61.00%	$38,107	$ 39,025	61.00%	$23,805	$ 40,586	61.00%	$24,758	$ 112,481	61.00%	$68,613	$173,604
Sr. Project Manager	$ 33,637	61.00%	$20,518	$ 140,007	61.00%	$85,404	$ 145,607	61.00%	$88,821	$ 151,432	61.00%	$92,373	$ 157,489	61.00%	$96,068	$383,185
Sr. Application Analyst	$ 9,003	61.00%	$5,492	$ 62,471	61.00%	$38,107	$ 64,969	61.00%	$39,631	$ 40,586	61.00%	$24,758	$ 28,140	61.00%	$17,165	$125,153
Sr. Application Analyst	$ -	61.00%	$0	$ -	61.00%	$0	$ -	61.00%	$0	$ -	61.00%	$0	$ -	61.00%	$0	$0
Sr. Infrastructure Systems Analyst	$ -	61.00%	$0	$ 74,979	61.00%	$45,737	$ 26,017	61.00%	$15,870	$ 13,529	61.00%	$8,253	$ 28,140	61.00%	$17,165	$87,025
Sr. Infrastructure Systems Analyst	$ -	61.00%	$0	$ 74,979	61.00%	$45,737	$ 26,017	61.00%	$15,870	$ 13,529	61.00%	$8,253	$ 28,140	61.00%	$17,165	$87,025
Data & Analytics Engineers	$ -	61.00%	$0	$ 20,344	61.00%	$12,410	$ 21,157	61.00%	$12,906	$ 11,002	61.00%	$6,711	$ 11,442	61.00%	$6,980	$39,006
Data Scientist	$ -	61.00%	$0	$ 56,034	61.00%	$34,181	$ 58,276	61.00%	$35,548	$ 15,152	61.00%	$9,242	$ 31,515	61.00%	$19,224	$98,196
Sr. Application Analyst	$ 15,051	61.00%	$9,181	$ 125,011	61.00%	$76,257	$ 130,011	61.00%	$79,307	$ 67,568	61.00%	$41,217	$ 42,210	61.00%	$25,748	$231,709
Sr. Application Analyst	$ -	61.00%	$0	$ 62,471	61.00%	$38,107	$ 64,969	61.00%	$39,631	$ 27,058	61.00%	$16,505	$ 28,140	61.00%	$17,165	$111,409
Sr. Application Analyst	$ -	61.00%	$0	$ 87,487	61.00%	$53,367	$ 90,986	61.00%	$55,502	$ 40,586	61.00%	$24,758	$ 28,140	61.00%	$17,165	$150,791
Sr. Database Administrator	$ -	61.00%	$0	$ 74,979	61.00%	$45,737	$ 26,017	61.00%	$15,870	$ 13,529	61.00%	$8,253	$ 28,140	61.00%	$17,165	$87,025
HR recruiter	$ 95,819	61.00%	$58,449	$ -	61.00%	$0	$ -	61.00%	$0	$ -	61.00%	$0	$ -	61.00%	$0	$58,449
Grant Coordinator	$ 23,941	61.00%	$14,604	$ 24,899	61.00%	$15,188	$ 25,895	61.00%	$15,796	$ 26,931	61.00%	$16,428	$ 28,008	61.00%	$17,085	$79,101
Community Benefit Coordinator	$ 30,034	61.00%	$18,321	$ 31,235	61.00%	$19,054	$ 32,485	61.00%	$19,816	$ 33,784	61.00%	$20,608	$ 35,135	61.00%	$21,433	$99,231
0	$ -	61.00%	$0	$ -	61.00%	$0	$ -	61.00%	$0	$ -	61.00%	$0	$ -	61.00%	$0	$0
0	$ -	61.00%	$0	$ -	61.00%	$0	$ -	61.00%	$0	$ -	61.00%	$0	$ -	61.00%	$0	$0
0	$ -	61.00%	$0	$ -	61.00%	$0	$ -	61.00%	$0	$ -	61.00%	$0	$ -	61.00%	$0	$0
0	$ -	61.00%	$0	$ -	61.00%	$0	$ -	61.00%	$0	$ -	61.00%	$0	$ -	61.00%	$0	$0
0			$0			$0			$0			$0			$0	$0
Total:	**$1,177,479**		**$718,262**	**$3,187,668**		**$1,944,477**	**$4,457,756**		**$2,719,231**	**$3,997,409**		**$2,438,420**	**$4,023,145**		**$2,454,118**	**$10,274,509**

A federally approved fringe benefit rate agreement, or a proposed rate supported and agreed upon by DOE for estimating purposes is required at the time of award negotiation if reimbursement for fringe benefits is requested. Please check (X) one of the options below and provide the requested information if not previously submitted.

______ A fringe benefit rate has been negotiated with, or approved by, a federal government agency. A copy of the latest rate agreement is/was included with the project application.*

__x____ There is not a current federally approved rate agreement negotiated and available.**

*Unless the organization has submitted an indirect rate proposal which encompasses the fringe pool of costs, please provide the organization's benefit package and/or a list of the components/elements that comprise the fringe pool and the cost or percentage of each component/element allocated to the labor costs identified in the Budget Justification (Form EERE 335.1).

**When this option is checked, the entity preparing this form shall submit an indirect rate proposal in the format provided in the Sample Rate Proposal at http://www1.eere.energy.gov/financing/resources.html, or a format that provides the same level of information and which will support the rates being proposed for use in the performance of the proposed project.

Additional Explanation (as necessary): Please use this box (or an attachment) to list the elements that comprise your fringe benefits and how they are applied to your base (e.g. Personnel) to arrive at your fringe benefit rate. SnoPUD proposes the following fringe benefit rate based on our latest overhead rates as of July 2021. Breakdown is shown below and note SnoPUD does not anticipate the use of overtime labor to complete the SnoSMART project.

Snohomish County Public Utility District #1 Labor Overheads

New Rates as of July 2021

Account	Description	ST Rate	OT Rate
242102	PTO	12.70%	0.00%
242106	HOLIDAY	4.50%	0.00%
242107	MEDICARE	1.70%	1.70%
242108	S.T.D.	0.20%	0.00%
242109	SICK LEAVE	1.70%	0.00%
242110	SERVICE PAY	0.80%	0.00%
242111	401K DIST PD	1.80%	1.80%
242112	80% IND (Worker's Comp)	0.40%	0.40%
242113	100% IND (Worker's Comp)	0.10%	0.00%
242114	PENSION	12.10%	12.10%

c. Travel

INSTRUCTIONS - PLEASE READ!!!

1. Identify Foreign and Domestic Travel as separate items. Examples of Purpose of Travel are subrecipient site visits, DOE meetings, project mgmt. meetings, etc. Examples of Basis for Estimating Costs are past trips, travel quotes, GSA rates, etc.

2. All listed travel must be necessary for performance of the Statement of Project Objectives.

3. Federal travel regulations are contained within the applicable cost principles for all entity types. Travel costs should remain consistent with travel costs incurred by an organization during normal business operations as a result of the organizations written travel policy. In absence of a written travel policy, organizations must follow the regulations prescribed by the General Services Administration.

4. Each budget period is rounded to the nearest dollar.

SOPO Task #	Purpose of Travel	Depart From	Destination	No. of Days	No. of Travelers	Lodging per Traveler	Flight per Traveler	Vehicle per Traveler	Per Diem Per Traveler	Cost per Trip	Basis for Estimating Costs
	Domestic Travel	**Budget Period 1**									
1	**EXAMPLE!!!** Visit to PV manufacturer			2	2	$250	$500	$100	$160	$2,020	Current GSA rates
										$0	
										$0	
										$0	
										$0	
	International Travel										
										$0	
	Budget Period 1 Total									**$0**	
	Domestic Travel	**Budget Period 2**									
										$0	
										$0	
										$0	
										$0	
	International Travel										
										$0	
	Budget Period 2 Total									**$0**	
	Domestic Travel	**Budget Period 3**									
										$0	
										$0	
										$0	
										$0	
	International Travel										
										$0	
	Budget Period 3 Total									**$0**	
	Domestic Travel	**Budget Period 4**									
										$0	
										$0	
										$0	
										$0	
	International Travel										
										$0	
	Budget Period 4 Total									**$0**	
	Domestic Travel	**Budget Period 5**									
										$0	
										$0	
										$0	
										$0	
	International Travel										
										$0	
	Budget Period 5 Total									**$0**	
	PROJECT TOTAL									**$0**	

Additional Explanation (as needed): SnoPUD does not expect travel expenses to account for a significant portion of the project, and does not expect to ask for travel reimbursement.

d. Equipment

INSTRUCTIONS - PLEASE READ!!!

1. Equipment is generally defined as an item with an acquisition cost greater than $5,000 and a useful life expectancy of more than one year. Please refer to the applicable Federal regulations in 2 CFR 200 for specific equipment definitions and treatment.

2. List all equipment below, providing a basis of cost (e.g. vendor quotes, catalog prices, prior invoices, etc.). Briefly justify items as they apply to the Statement of Project Objectives. If it is existing equipment, provide logical support for the estimated value shown.

3. During award negotiations, provide a vendor quote for all equipment items over $50,000 in price. If the vendor quote is not an exact price match, provide an explanation in the additional explanation section below. If a vendor quote is not practical, such as for a piece of equipment that is purpose-built, first of its kind, or otherwise not available off the shelf, provide a detailed engineering estimate for how the cost estimate was derived.

4. Each budget period is rounded to the nearest dollar.

SOPO Task #	Equipment Item	Qty	Unit Cost	Total Cost	Basis of Cost	Justification of need
Budget Period 1						
2	651R-2 Recloser Control Panel replacement	22	$6,000	$132,000	Budgetary estimates from capital planning process using prior invoices and vendor quotes	
2	651R-2 Recloser (Recloser + Control Panel)	10	$36,000	$360,000	Same as above	
2	651RA DA Switch (Recloser + Control Panel)	36	$30,000	$1,080,000	Same as above	Test lab + installs
2	Single-phase recloser 1-ph install	1	$8,000	$8,000	High cost from 3 vendors (rounded)	For use in test lab and development
2	Single-phase recloser 2-ph install		$13,000	$0	High cost from 3 vendors (rounded)	
2	Single-phase recloser 3-ph install		$18,000	$0	High cost from 3 vendors (rounded)	
2	CL-7 Regulator Control Panel Replacement		$14,000	$0	Budgetary estimates from capital planning process using prior invoices and vendor quotes	
2	Capacitor Bank Controller Replacement		$8,000	$0	Budgetary estimates from capital planning process using prior invoices and vendor quotes	
				$0		
				$0		
	Budget Period 1 Total			$1,580,000		
Budget Period 2						
2	651R-2 Recloser Control Panel replacement	43	$6,300	$270,900	Assume a 5% escalation per year	
2	651R-2 Recloser (Recloser + Control Panel)	21	$37,800	$793,800		
2	651RA DA Switch (Recloser + Control Panel)	69	$31,500	$2,173,500		
2	Single-phase recloser 1-ph install		$8,400	$0		
2	Single-phase recloser 2-ph install		$13,650	$0		
2	Single-phase recloser 3-ph install		$18,900	$0		
2	CL-7 Regulator Control Panel Replacement	1	$14,700	$14,700		For use in test lab and development
2	Capacitor Bank Controller Replacement		$8,400	$0		
			$0	$0		
			$0	$0		
	Budget Period 2 Total			$3,252,900		
Budget Period 3						
2	651R-2 Recloser Control Panel replacement	43	$6,615	$284,445		
2	651R-2 Recloser (Recloser + Control Panel)	21	$39,690	$833,490		
2	651RA DA Switch (Recloser + Control Panel)	69	$33,075	$2,282,175		
2	Single-phase recloser 1-ph install	78	$8,820	$687,960		
2	Single-phase recloser 2-ph install	5	$14,333	$71,663		Test lab + installs
2	Single-phase recloser 3-ph install	6	$19,845	$119,070		Test lab + installs
2	CL-7 Regulator Control Panel Replacement	40	$15,435	$617,400		
2	Capacitor Bank Controller Replacement	1	$8,820	$8,820		For use in test lab and development
			$0	$0		
			$0	$0		
	Budget Period 3 Total			$4,905,023		
Budget Period 4						
2	651R-2 Recloser Control Panel replacement	43	$6,946	$298,667		
2	651R-2 Recloser (Recloser + Control Panel)	21	$41,675	$875,165		
2	651RA DA Switch (Recloser + Control Panel)	69	$34,729	$2,396,284		
2	Single-phase recloser 1-ph install	78	$9,261	$722,358		
2	Single-phase recloser 2-ph install	4	$15,049	$60,197		
2	Single-phase recloser 3-ph install	5	$20,837	$104,186		
2	CL-7 Regulator Control Panel Replacement	40	$16,207	$648,270		
2	Capacitor Bank Controller Replacement		$9,261	$0		
			$0	$0		
			$0	$0		
	Budget Period 4 Total			$5,105,126		
Budget Period 5						
2	651R-2 Recloser Control Panel replacement	16	$7,293	$116,689		
2	651R-2 Recloser (Recloser + Control Panel)	7	$43,758	$306,308		
2	651RA DA Switch (Recloser + Control Panel)	30	$36,465	$1,093,956		
2	Single-phase recloser 1-ph install	156	$9,724	$1,516,952		
2	Single-phase recloser 2-ph install	6	$15,802	$94,809		
2	Single-phase recloser 3-ph install	8	$21,879	$175,033		
2	CL-7 Regulator Control Panel Replacement	40	$17,017	$680,684		
2	Capacitor Bank Controller Replacement	10	$9,724	$97,241		
			$0	$0		
			$0	$0		
	Budget Period 5 Total			$4,081,670		
	PROJECT TOTAL			**$18,924,719**		

Additional Explanation (as needed): Assume a 5% inflation rate over course of the poject.

e. Supplies

INSTRUCTIONS - PLEASE READ!!!

1. Supplies are generally defined as an item with an acquisition cost of $5,000 or less and a useful life expectancy of less than one year. Supplies are generally consumed during the project performance. Please refer to the applicable Federal regulations in 2 CFR 200 for specific supplies definitions and treatment.

2. List all proposed supplies below, providing a basis of costs (e.g. vendor quotes, catalog prices, prior invoices, etc.). Briefly justify the need for the Supplies as they apply to the Statement of Project Objectives. Note that Supply items must be direct costs to the project at this budget category, and not duplicative of supply costs included in the indirect pool that is the basis of the indirect rate applied for this project.

3. Multiple supply items valued at $5,000 or less used to assemble an equipment item with a value greater than $5,000 with a useful life of more than one year should be included on the equipment tab. If supply items and costs are ambiguous in nature, contact your DOE representative for proper categorization.

4. Add rows as needed. If rows are added, formulas/calculations may need to be adjusted by the preparer.

5. Each budget period is rounded to the nearest dollar.

SOPO Task #	General Category of Supplies	Qty	Unit Cost	Total Cost	Basis of Cost	Justification of need
Budget Period 1						
4,6	**EXAMPLE!!!** Wireless DAS components	10	$360.00	$3,600	Catalog price	For Alpha prototype - Task 2.4
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 1 Total			**$0**		
Budget Period 2						
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 2 Total			$0		
Budget Period 3						
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 3 Total			$0		
Budget Period 4						
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 4 Total			$0		
Budget Period 5						
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
				$0		
	Budget Period 5 Total			$0		
	PROJECT TOTAL			**$0**		

Additional Explanation (as needed): SnoPUD expects to incur some additional expenses as part of this project for installation of equipment including jumper cables, bolts, connectors, wiring, etc. but does not expect to ask for reimbursement of these supplies. Many of the lines in the 'Equipment' tab represent SnoPUD's compatible units which are a collection of the main equipment (recloser and control panel for example) plus all the required cables, bolts, connectors, etc. associated with the equipment installation.

f. Contractual

INSTRUCTIONS - PLEASE READ!!!
1. The entity completing this form must provide all costs related to subrecipients, vendors, and FFRDC partners in the applicable boxes below.
2. Subrecipients (partners, sub-awardees): Subrecipients shall submit a Budget Justification describing all project costs and calculations when their total proposed budget exceeds either (1) $100,000 or (2) 50% of total award costs. These subrecipient forms may be completed by either the subrecipients themselves or by the preparer of this form. The budget totals on the subrecipient's forms must match the subrecipient entries below. A subrecipient is a legal entity to which a subaward is made, who has performance measured against whether the objectives of the Federal program are met, is responsible for programmatic decision making, must adhere to applicable Federal program compliance requirements, and uses the Federal funds to carry out a program of the organization. All characteristics may not be present and judgment must be used to determine subrecipient vs. vendor status.
3. Vendors (including contractors): List all vendors and contractors supplying commercial supplies or services used to support the project. For each Vendor cost with total project costs of $250,000 or more, a Vendor quote must be provided. A vendor is a legal entity contracted to provide goods and services within normal business operations, provides similar goods or services to many different purchasers, operates in a competitive environment, provides goods or services that are ancillary to the operation of the Federal program, and is not subject to compliance requirements of the Federal program. All characteristics may not be present and judgment must be used to determine subrecipient vs. vendor status.
4. Federal Funded Research and Development Centers (FFRDCs): FFRDCs must submit a signed Field Work Proposal during award application. The award recipient may allow the FFRDC to provide this information directly to DOE, however project costs must also be provided below.
5. Each budget period is rounded to the nearest dollar.

SOPO Task #	Sub-Recipient Name/Organization	Purpose and Basis of Cost	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Project Total
2,4	**EXAMPLE!!!** XYZ Corp.	Partner to develop optimal lens for Gen 2 product. Cost estimate based on personnel hours.	$48,000	$32,000	$16,000			**$96,000**
								$0
								$0
								$0
								$0
								$0
								$0
		Sub-total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

SOPO Task #	Vendor Name/Organization	Purpose and Basis of Cost	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Project Total
6	**EXAMPLE!!!** ABC Corp.	Vendor for developing robotics to perform lens inspection. Estimate provided by vendor.	$32,900	$86,500				**$119,400**
3	SCADA/ADMS Vendor Costs	Vendor for SCADA/ADMS software, hardware, implementatoin services, training, support	$2,906,500	$1,162,600	$4,650,400	$2,325,200	$581,300	**$11,626,000**
								$0
								$0
								$0
								$0
		Sub-total	**$2,906,500**	**$1,162,600**	**$4,650,400**	**$2,325,200**	**$581,300**	**$11,626,000**

SOPO Task #	FFRDC Name/Organization	Purpose and Basis of Cost	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Project Total
								$0
								$0
		Sub-total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

	Total Contractual		**$2,906,500**	**$1,162,600**	**$4,650,400**	**$2,325,200**	**$581,300**	**$11,626,000**

Additional Explanation (as needed): SnoPUD does not have a project vendor quote for the estimated vendor costs. Instead, the estimates provided in this tab are based on project costs for a peer utility with a similar project scope and timeline as laid out in the SnoSMART workplan. The cost estimates are based on the average bid price for the two software vendors on the peer utility's short list. The vendor selection and contract negotions will take place if/when DOE selects SnoPUD for grant award funding.

g. Construction

PLEASE READ!!!

1. Construction, for the purpose of budgeting, is defined as all types of work done on a particular building, including erecting, altering, or remodeling. Construction conducted by the award recipient is entered on this page. Any construction work that is performed by a vendor or subrecipient should be entered under f. Contractual.

2. List all proposed construction below, providing a basis of cost such as engineering estimates, prior construction, etc., and briefly justify its need as it applies to the Statement of Project Objectives.

3. Each budget period is rounded to the nearest dollar.

Overall description of construction activities: Example Only!!! - Build wind turbine platform

SOPO Task #	General Description	Cost	Basis of Cost	Justification of need
Budget Period 1				
3	EXAMPLE ONLY!!! Three days of excavation for platform site	$28,000	Engineering estimate	Site must be prepared for construction of platform.
	Budget Period 1 Total	$0		
Budget Period 2				
	Budget Period 2 Total	$0		
Budget Period 3				
	Budget Period 3 Total	$0		
Budget Period 4				
	Budget Period 4 Total	$0		
Budget Period 5				
	Budget Period 5 Total	$0		
	PROJECT TOTAL	**$0**		

Additional Explanation (as needed): SnoPUD does not expect any construction costs as defined in this tab and does not anticipate asking for any reimbursements in this category.

h. Other Direct Costs

INSTRUCTIONS - PLEASE READ!!!

1. Other direct costs are direct cost items required for the project which do not fit clearly into other categories. These direct costs must not be included in the indirect costs (for which the indirect rate is being applied for this project). Examples are: tuition, printing costs, etc. which can be directly charged to the project and are not duplicated in indirect costs (overhead costs).

2. Basis of cost are items such as vendor quotes, prior purchases of similar or like items, published price list, etc.

3. Each budget period is rounded to the nearest dollar.

SOPO Task #	General Description and SOPO Task #	Cost	Basis of Cost	Justification of need
	Budget Period 1			
2	Foreman Truck, Ford F550 XCAB 2020	$17,833	FEMA reimbursement rate 9/15/2021-9/15/2023	Vehicle costs at 28.95/hour foreman work
2	Lineman Bucket, International 7600 2018	$51,978	same as above	Vehicle costs at 84.38/hour outside line journey level work
2	Lineman Bucket, International 7500 2013	$84,139	same as above	Vehicle costs at 136.59/hour outside line journey level work
2	Ford F350 XCAB 2020	$20,772	same as above	Vehicle costs at 33.72/hour flagger work
2	Serviceman Bucket, Ford F550 OH SVC Trk 2019	$10,988	same as above	Vehicle costs at 41/hour serviceman work
	Budget Period 1 Total	$185,710		
	Budget Period 2			
2	Foreman Truck, Ford F550 XCAB 2020	$35,493	FEMA reimbursement rate 9/15/2021-9/15/2023	Vehicle costs at 28.95/hour foreman work
2	Lineman Bucket, International 7600 2018	$103,450	same as above	Vehicle costs at 84.38/hour outside line journey level work
2	Lineman Bucket, International 7500 2013	$167,459	same as above	Vehicle costs at 136.59/hour outside line journey level work
2	Ford F350 XCAB 2020	$41,341	same as above	Vehicle costs at 33.72/hour flagger work
2	Serviceman Bucket, Ford F550 OH SVC Trk 2019	$21,812	same as above	Vehicle costs at 41/hour serviceman work
	Budget Period 2 Total	$369,555		
	Budget Period 3			
2	Foreman Truck, Ford F550 XCAB 2020	$58,363	FEMA reimbursement rate 9/15/2021-9/15/2023	Vehicle costs at 28.95/hour foreman work
2	Lineman Bucket, International 7600 2018	$170,110	same as above	Vehicle costs at 84.38/hour outside line journey level work
2	Lineman Bucket, International 7500 2013	$275,365	same as above	Vehicle costs at 136.59/hour outside line journey level work
2	Ford F350 XCAB 2020	$67,980	same as above	Vehicle costs at 33.72/hour flagger work
2	Serviceman Bucket, Ford F550 OH SVC Trk 2019	$42,640	same as above	Vehicle costs at 41/hour serviceman work
	Budget Period 3 Total	$614,458		
	Budget Period 4			
2	Foreman Truck, Ford F550 XCAB 2020	$58,363	FEMA reimbursement rate 9/15/2021-9/15/2023	Vehicle costs at 28.95/hour foreman work
2	Lineman Bucket, International 7600 2018	$170,110	same as above	Vehicle costs at 84.38/hour outside line journey level work
2	Lineman Bucket, International 7500 2013	$275,365	same as above	Vehicle costs at 136.59/hour outside line journey level work
2	Ford F350 XCAB 2020	$67,980	same as above	Vehicle costs at 33.72/hour flagger work
2	Serviceman Bucket, Ford F550 OH SVC Trk 2019	$42,640	same as above	Vehicle costs at 41/hour serviceman work
	Budget Period 4 Total	$614,458		
	Budget Period 5			
2	Foreman Truck, Ford F550 XCAB 2020	$54,310	FEMA reimbursement rate 9/15/2021-9/15/2023	Vehicle costs at 28.95/hour foreman work
2	Lineman Bucket, International 7600 2018	$158,297	same as above	Vehicle costs at 84.38/hour outside line journey level work
2	Lineman Bucket, International 7500 2013	$256,243	same as above	Vehicle costs at 136.59/hour outside line journey level work
2	Ford F350 XCAB 2020	$63,259	same as above	Vehicle costs at 33.72/hour flagger work
2	Serviceman Bucket, Ford F550 OH SVC Trk 2019	$44,772	same as above	Vehicle costs at 41/hour serviceman work
	Budget Period 5 Total	$576,881		
	PROJECT TOTAL	**$2,361,062**		

Additional Explanation (as needed):

A. FEMA Rates

FEMA publishes equipment rates applicable on a national basis.[131] FEMA's rate schedule includes any item powered by fuel or attached to any item powered by fuel. FEMA develops equipment rates based on all costs associated with ownership and operation of equipment (except for operator labor). FEMA equipment rate components include depreciation, overhead, equipment overhaul (labor, parts, and supplies), maintenance (labor, parts, and supplies), lubrication, tires, ground engaging component (if applicable), and fuel. Because the rates include maintenance costs, a mechanic's labor costs to maintain Applicant-owned equipment are ineligible.

i. Indirect Costs

INSTRUCTIONS - PLEASE READ!!!
1. Fill out the table below to indicate how your indirect costs are calculated. Use the box below to provide additional explanation regarding your indirect rate calculation.
2. The rates and how they are applied should not be averaged to get one indirect cost percentage. Complex calculations or rates that do not do not correspond to the below categories should be described/provided in the Additional Explanation section below. If questions exist, consult with your DOE contact before filling out this section.
3. The indirect rate should be applied to both the Federal Share and Recipient Cost Share.
4. Each budget period is rounded to the nearest dollar.

	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Total	Explanation of BASE
Provide ONLY Applicable Rates:							
Overhead Rate	0.00%	0.00%	0.00%	0.00%	0.00%		
General & Administrative (G&A)	0.00%	0.00%	0.00%	0.00%	0.00%		
FCCM Rate, if applicable	0.00%	0.00%	0.00%	0.00%	0.00%		
OTHER Indirect Rate	0.00%	0.00%	0.00%	0.00%	0.00%		
Indirect Costs (As Applicable):							
Overhead Costs						**$0**	
G&A Costs						**$0**	
FCCM Costs, if applicable						**$0**	
OTHER Indirect Costs						**$0**	
Total indirect costs requested:	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	

A federally approved indirect rate agreement, or rate proposed (supported and agreed upon by DOE for estimating purposes) is required if reimbursement of indirect costs is requested. Please check (X) one of the options below and provide the requested information if it has not already been provided as requested, or has changed.

_____ An indirect rate has been approved or negotiated with a federal government agency. A copy of the latest rate agreement is included with this application, and will be provided electronically to the Contracting Officer for this project.

___X__ There is not a current, federally approved rate agreement negotiated and available*.

***When this option is checked, the entity preparing this form shall submit an indirect rate proposal in the format provided by your DOE contact, or a format that provides the same level of information and which will support the rates being proposed for use in performance of the proposed project. Additionally, any non-Federal entity that has never received a negotiated indirect cost rate, except for those non-Federal entities described in Appendix VII to Part 200—States and Local Government and Indian Tribe Indirect Cost Proposals, paragraph D.1.b, may elect to charge a de minimis rate of 10% of modified total direct costs (MTDC) which may be used indefinitely.As described in §200.403 Factors affecting allowability of costs, costs must be consistently charged as either indirect or direct costs, but may not be double charged or inconsistently charged as both. If chosen, this methodology once elected must be used consistently for all Federal awards until such time as a non-Federal entity chooses to negotiate for a rate, which the non-Federal entity may apply to do at any time.**

You must provide an explanation (below or in a separate attachment) and show how your indirect cost rate was applied to this budget in order to come up with the indirect costs shown.

Additional Explanation (as needed): *IMPORTANT: Please use this box (or an attachment) to further explain how your total indirect costs were calculated. If the total indirect costs are a cumulative amount of more than one calculation or rate application, the explanation and calculations should identify all rates used, along with the base they were applied to (and how the base was derived), and a total for each (along with grand total). SnoPUD has not identified any 'Indirect' costs and does not anticipate asking for any reimbursement in this cost category. All indirect costs are associted with labor are included in the Fringe section.

Cost Share

PLEASE READ!!!

1. A detailed presentation of the cash or cash value of all cost share proposed must be provided in the table below. All items in the chart below must be identified within the applicable cost category tabs a. through i. in addition to the detailed presentation of the cash or cash value of all cost share proposed provided in the table below. Identify the source organization & amount of each cost share item proposed in the award.

2. Cash Cost Share - encompasses all contributions to the project made by the recipient, subrecipient, or third party (an entity that does not have a role in performing the scope of work) for costs incurred and paid for during the project. This includes when an organization pays for personnel, supplies, equipment, etc. for their own company with organizational resources. If the item or service is reimbursed for, it is cash cost share. All cost share items must be necessary to the performance of the project. Any partial donation of goods or services is considered a discount and is not allowable.

3. In Kind Cost Share - encompasses all contributions to the project made by the recipient, subrecipient, or third party (an entity that does not have a role in performing the scope of work) where a value of the contribution can be readily determined, verified and justified but where no actual cash is transacted in securing the good or service comprising the contribution. In Kind cost share items include volunteer personnel hours, the donation of space or use of equipment, etc. The cash value and calculations thereof for all In Kind cost share items must be justified and explained in the Cost Share Item section below. All cost share items must be necessary to the performance of the project. If questions exist, consult your DOE contact before filling out In Kind cost share in this section. Vendors may not provide cost share. Any partial donation of goods or services is considered a discount and is not allowable.

4. Funds from other Federal sources MAY NOT be counted as cost share. This prohibition includes FFRDC sub-recipients. Non-Federal sources include any source not originally derived from Federal funds. Cost sharing commitment letters from subrecipients and third parties must be provided with the original application.

5. Fee or profit, including foregone fee or profit, **are not allowable** as project costs (including cost share) under any resulting award. The project may only incur those costs that are allowable and allocable to the project (including cost share) as determined in accordance with the applicable cost principles prescribed in FAR Part 31 for For-Profit entities and 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities.

6. NOTE: A Recipient who elects to employ the 10% de minimis Indirect Cost rate **cannot claim the resulting indirect costs as a Cost Share contribution.**

7. NOTE: A Recipient **cannot claim "unrecovered indirect costs"** as a Cost Share contribution, **without prior approval.**

8. Each budget period is rounded to the nearest dollar.

Organization/Source	Type (Cash or In Kind)	Cost Share Item	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Total Project Cost Share
ABC Company **EXAMPLE!!!**	Cash	Project partner ABC Company will provide 20 PV modules for product development at the price of $680 per module	$13,600					**$13,600**
SnoPUD	Cash	Personnel costs	$588,740	$1,593,834	$2,228,878	$1,998,705	$2,011,573	**$8,421,728**
SnoPUD	Cash	Personnel fringe costs	$359,131	$972,239	$1,359,616	$1,219,210	$1,227,059	**$5,137,254**
SnoPUD	Cash	Equipment purchases	$790,000	$1,626,450	$2,452,511	$2,552,563	$2,040,835	**$9,462,359**
SnoPUD	Cash	Contract with SCADA/ADMS vendor	$1,453,250	$581,300	$2,325,200	$1,162,600	$290,650	**$5,813,000**
SnoPUD	Cash	Vehicle Costs - Crew work	$92,855	$184,778	$307,229	$307,229	$288,441	**$1,180,531**
								$0
								$0
								$0
								$0
								$0
		Totals	**$3,283,976**	**$4,958,600**	**$8,673,434**	**$7,240,306**	**$5,858,557**	**$30,014,873**

Total Project Cost: $60,029,746 **Cost Share Percent of Award: 50.0%**

Additional Explanation (as needed):

Applicant Name: 0 Award Number: 0

Budget Information - Non Construction Programs

OMB Approval No. 0348-0044

Section A - Budget Summary

Grant Program Function or Activity	Catalog of Federal Domestic Assistance Number	Estimated Unobligated Funds		New or Revised Budget			
		Federal	Non-Federal	Federal	Non-Federal		Total
(a)	(b)	(c)	(d)	(e)	(f)		(g)
1. Budget Period 1				$3,283,976	$3,283,976		$6,567,951
2. Budget Period 2				$4,958,600	$4,958,600		$9,917,200
3. Budget Period 3				$8,673,434	$8,673,434		$17,346,867
4. Budget Period 4				$7,240,306	$7,240,306		$14,480,613
5. Budget Period 5				$5,858,557	$5,858,557		$11,717,115
6. Totals				$30,014,873	$30,014,873		$60,029,746

Section B - Budget Categories

6. Object Class Categories	Grant Program, Function or Activity					Total (5)
	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	
a. Personnel	$1,177,479	$3,187,668	$4,457,756	$3,997,409	$4,023,145	$16,843,457
b. Fringe Benefits	$718,262	$1,944,477	$2,719,231	$2,438,420	$2,454,118	$10,274,509
c. Travel	$0	$0	$0	$0	$0	$0
d. Equipment	$1,580,000	$3,252,900	$4,905,023	$5,105,126	$4,081,670	$18,924,719
e. Supplies	$0	$0	$0	$0	$0	$0
f. Contractual	$2,906,500	$1,162,600	$4,650,400	$2,325,200	$581,300	$11,626,000
g. Construction	$0	$0	$0	$0	$0	$0
h. Other	$185,710	$369,555	$614,458	$614,458	$576,881	$2,361,062
i. Total Direct Charges (sum of 6a-6h)	$6,567,951	$9,917,200	$17,346,867	$14,480,613	$11,717,115	$60,029,746
j. Indirect Charges	$0	$0	$0	$0	$0	$0
k. **Totals** (sum of 6i-6j)	$6,567,951	$9,917,200	$17,346,867	$14,480,613	$11,717,115	$60,029,746

7. Program Income						$0

SnoSMART

Snohomish County PUD's **S**ecure **M**odern **A**utomated and **R**eliable **T**echnology Project

ACCELERATE OUR SMART GRID VISION FROM 20 TO 5 YEARS

Prime Recipient: Snohomish County Public Utility District #1 (SnoPUD)

Project Manager: John Hieb, Principal Engineer

Executive Sponsor: Kimberly Johnston, Director of Government Relations, External Affairs, Strategy

Funding Request: $30M from DOE; $30M from SnoPUD

USDOE SMART GRID GRANT (40107) TOPIC AREA 2

SnoSMART Technology and Goals

Accelerate SnoPUD Smart Grid Implementation from 20 to 5 years

SnoSMART project goals are to enhance grid resiliency, improve reliability, mitigate wildfire risks, and improve grid efficiencies through:

1. Fault Location, Isolation and Restoration (FLISR) – vastly improves grid reliability by automating fault location, reducing restoration times in many cases *from hours to minutes*.
2. Voltage and VAR Optimization/Demand Voltage Reduction – enables adjusting the voltage delivered to customers to reduce consumption for *demand reduction during peak times or for energy efficiency*.
3. Wildfire & Extreme Weather Risk Mitigation – automates system safety and protection controls during times of increased fire risk and extreme weather events.

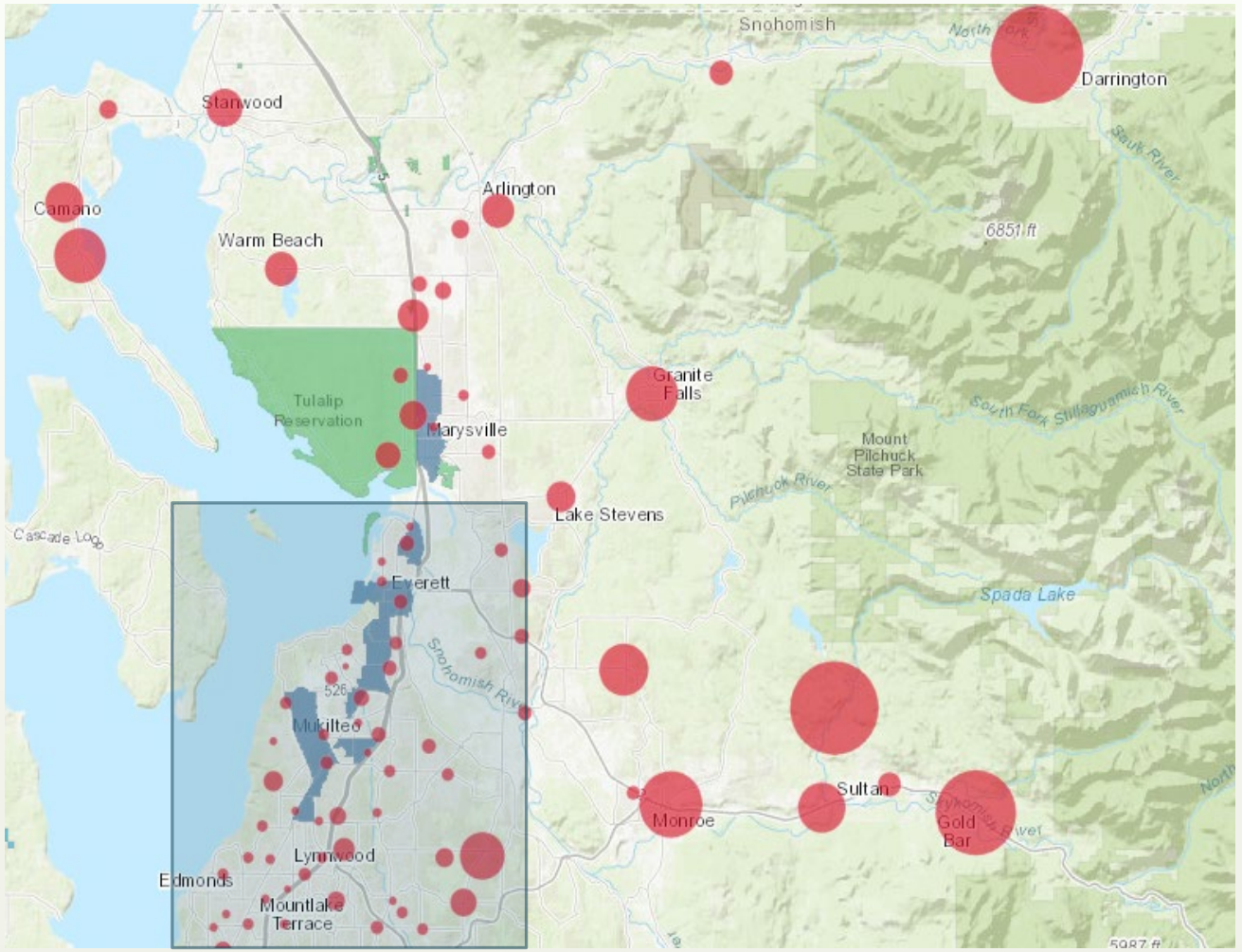
SnoSMART will achieve project goals through software and infrastructure upgrades to:

1. Replace SnoPUD's aging SCADA and ADMS systems with a modern system designed for the utility of the future.
2. Deploy hundreds of communication-enabled grid devices that will be controlled by the new SCADA/ADMS system and system operators.
3. Replace fire-causing expulsion fuses in the areas with the highest chance to ignite wildfires.

SnoSMART will create diverse employment opportunities across numerous SnoPUD departments such as:

Line, Operational Technologies, IT, System Planning & Protection, Telecommunications, Distribution Engineering, and more.

Communities We Engage and Serve



SnoSMART will accelerate smart grid benefits to all Snohomish PUD customers with particular focus on **improved reliability, increased resiliency, and wildfire mitigation to vulnerable communities** in the north and east parts of SnoPUD's service territory.

The eastern part of the county is heavily forested and will directly benefit from **reduced wildfire risks**. All communities will benefit from potential **avoided smoke exposure and reduced energy burden**.

SnoSMART will leverage existing community partnerships and resilience projects to **engage Justice 40 communities**.

Red circles represent substation reliability. Smaller circles indicate substations with better reliability. Blue and Green areas are Justice 40 disadvantaged communities and tribal nation lands. Shaded communities are outside work area but will benefit from avoided smoke exposure and grid efficiencies.

Snohomish PUD's Secure Modern Automated and Reliable Technology Project

SnoSMART Project Manager: John DL Hieb, P.E. – Principal Engineer

The SnoSMART project is an infrastructure and software project meant to improve SnoPUD's system reliability, mitigate wildfire risks, and enable demand management. This $60 million project will deploy hundreds of wireless-connected smart grid devices to our distribution grid and upgrade the software tools to operate them. The SnoSMART project will revolutionize system visibility and control for our grid operators, further prepare the grid for transportation and building electrification, and enhance our ability to add distributed energy resources through advanced system planning. SnoSMART will create approximately seventeen new full-time jobs in our organization.

About Snohomish PUD

Snohomish County Public Utility District #1 (SnoPUD) is Washington State's largest public utility district, serving a population of 860,000 people and 25,000 businesses through 377,000 electric meters. We serve one of the fastest growing counties in the country and our communities have increasingly diverse needs and challenges.

The Challenges

Grid reliability has become more important than ever as our communities become increasingly reliant on electricity for heating, cooling, transportation and connectivity to employment and education. Extended outages can significantly affect vulnerable communities that may lack resources needed to be resilient without electricity. Additionally, recent events in the western United States and our county have demonstrated the importance of implementing measures to mitigate wildfire risk in vulnerable communities. It is likely that climate change will only elevate the importance of mitigation in years to come.

The SnoSMART Solution

SnoSMART will reduce energy burden for all SnoPUD customers and help prevent wildfire smoke exposure throughout the region. Our project will leverage existing partnerships with tribes, regulatory agencies, local governments, and labor to enhance community and grid resiliency and support safe, healthy, sustainable, and equitable communities. This funding will accelerate the implementation of these advancements by 15 years, allowing SnoPUD to make a truly generational leap forward. This will be accomplished by:

- Replacing fire-causing expulsion fuses in highest risk areas
- Install hundreds of wireless smart grid devices to improve grid reliability
- Upgrading aging software and technology systems to enable a more efficient grid

REX HABNER
Business Manager - Financial Secretary

DAMIAN HERNANDEZ, President
HELEN BERGLUND, Vice President
CHRISTINIA S. ROBERTON, Recording Secretary
SCOTT HINES, Treasurer

LOCAL UNION No. 77
International Brotherhood of Electrical Workers

19415 International Blvd, SeaTac, WA 98188 • Mailing Address P.O. BOX 68728, Seattle, WA 98168
Office (206) 323-4505 • Fax (206) 323-0186 • Construction Dispatch (206) 323-0585

March 14, 2023

Secretary Jennifer Granholm
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

Dear Madam Secretary:

On behalf of International Brotherhood of Electrical Workers (IBEW) Local No. 77 (Local 77), we offer our enthusiastic support for the Snohomish County Public Utility District No. 1 (SnoPUD) SnoSMART project grant application. I am the bargaining representative for approximately 600 members employed by SnoPUD. IBEW Local 77 represents over 8,300 members in the State of Washington, North Idaho, and parts of NW Montana. We represent workers within utilities, or contractors for utilities, in the energy generation, transmission, distribution, and maintenance sectors in nearly every community in Washington state. Among our employers, few are as poised to partner with Local 77 as SnoPUD has demonstrated through a history of innovative and extensive labor engagements.

SnoPUD and IBEW both benefit from our strong partnership. Our continued use of an Interest Based Bargaining approach to negotiate our Collective Bargaining Agreements demonstrates maturity and mutual respect in our labor relations. Both of our organizations are very involved in, and are advocates for, strong apprenticeship programs. We are also committed to expanding our community workforce engagement externally. In the coming months, we will explore multiple projects intended to reduce barriers to high-paying IBEW positions faced by women and other underrepresented groups, such as:

- Expanding the scope and presence of existing pre-apprentice programs to include electrical and water apprenticeship preparation, increasing access for women and other underrepresented groups to within reasonable commuting distances; and
- Exploring opportunities to partner with SnoPUD in growing IBEW presence in and support for the Tulalip Tribe's pre-apprentice program, particularly in student's readiness for clean energy apprenticeship programs.

Ensuring the prudency of funding is important to SnoPUD, but also the workforce of IBEW Local 77. We provide our wholehearted support for awarding SnoPUD the SnoSMART project grant. Together, SnoPUD and IBEW are creating a clean energy future in our shared community, where our members and their families can thrive.

Sincerely,

Nichole Reedy
Senior Assistant Business Manager
IBEW Local 77

6406 Marine Dr
Tulalip, WA 98271-9694
360-716-4500
Fax 360-716-0628

March 3rd, 2023

Secretary Jennifer Granholm
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

SUBJECT: Letter of Support for Snohomish County Public Utility District US DOE GRIP Proposal.

Dear Madam Secretary:

Tulalip Tribes is excited to partner with the Snohomish Public Utility District (Snohomish PUD) in support of the proposal entitled "**Snohomish County PUD's Secure Modern Automated and Reliable Technology Project**" (SnoSMART) being submitted in response to the US Department of Energy DE-FOA-00002740.

The Tulalip Tribes is a federally recognized sovereign Indian tribe with a reservation in western Washington. We are signatory to the 1855 Treaty of Point Elliott and are the successors in interest to the Snoqualmie, Snohomish and Skykomish and other allied bands signatory to that treaty. Under the Treaty, the Tulalip Tribes expressly reserved rights necessary to continue our lifeway activities.

Tulalip Tribes supports the proposed project's overall goals of developing, deploying and field demonstrating the application of smart grid technologies to enhance grid resilience. We believe this proposal helps us realize our goal of providing energy resilience for our members, particularly those most vulnerable to power outages, extreme weather events, and wildfire smoke, such as tribal elders and children. Furthermore, SnoSMART will complement and enable planned tribal microgrid projects that we are pursuing in partnership with Snohomish PUD.

We look forward to leveraging our existing relationship to collaborate with Snohomish PUD and other project partners on this significant project.

Sincerely,

Ryan Miller
Director, Treaty Rights &
Government Affairs

PUGET SOUND
Clean Air Agency

1904 3rd Ave #105
Seattle, WA 98101

206-343-8800

pscleanair.gov

March 9, 2023

Secretary Jennifer Granholm
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

RE: Snohomish County Public Utility District's US DOE GRIP Proposal

Dear Madam Secretary:

The Puget Sound Clean Air Agency (the Agency) is pleased to support the Snohomish Public Utility District's (Snohomish PUD, or SnoPUD) "Secure Modern Automated and Reliable Technology Project" (SnoSMART). The Agency's strategic vision is "healthy air, climate, and environmental justice for the benefit of all people in the Puget Sound region." This project will provide critical grid resiliency services that will ultimately enable a clean and equitable energy transition, furthering the region's progress toward our vision.

The Agency is a special-purpose regional government agency chartered by Washington State law to protect and manage local air quality. Our jurisdiction covers King, Kitsap, Pierce, and Snohomish counties, home to over half the state's population. The Agency synergizes its efforts with federal and state air quality strategies and works to stimulate shifts in policy in favor of lower-carbon fuels. We also prioritize regional efforts to reduce emissions, especially in areas that experience disproportionate impacts from air pollution. Primary sources of air pollution in the Puget Sound region are transportation, woodsmoke, and, increasingly, wildfire smoke.

The Agency and SnoPUD have a history of collaborating to improve local air quality through targeted woodsmoke mitigation measures, including replacing older woodstoves with energy-efficient heat pumps. We look forward to extending that collaboration under SnoPUD's SnoSMART initiative: this innovative grid resiliency project will reduce wildfire incidents from power line failures, thus reducing local exposure to wildfire smoke. We support exploring new partnerships between our agencies and other community-based organizations that would provide added benefit to smoke mitigation, community resiliency, and conservation efforts under SnoSMART.

We strongly support SnoPUD's application for funding and I urge you to reach out if you have any questions.

Sincerely,

Christine Cooley
Executive Director

Snohomish County

Department of Emergency Management

720 80th Street SW, Bldg. A
Everett, WA 98203
(425) 388-5060
www.snoco.org

Dave Somers
County Executive

Secretary Jennifer Granholm
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

Dear Madam Secretary:

Snohomish County Department of Emergency Management (DEM) supports the Snohomish County Public Utility District No. 1 (PUD) grant application for its SnoSMART project recognizing the magnitude of benefits the project would bring to our community including: 1) eventual significant reduced outage restoration times, particularly benefitting vulnerable residents in tribal and rural areas, and 2) wildfire and wildfire smoke prevention and mitigation. Furthermore, we recognize that a resilient and reliable grid is the foundation in which enables Snohomish County to meet goals established in its Climate Action Plan related to electrification of transportation and buildings.

A critical partnership exists between the PUD and DEM through collaboration on the County's Emergency Support Function (ESF) system. The PUD Emergency Management Department contributes to the County's common operating picture by sharing information related to energy system damage and outages while supplying information concerning restoration times. This partnership was particularly relevant during the Bolt Creek Fire (2022) when a request for a public safety power shutdown occurred in the eastern part of Snohomish County which is rural and considered socially vulnerable. The PUD is a critical and reliable partner for both emergency preparedness and response.

DEM looks forward to partnering with the PUD to engage with Snohomish County communities through the life of the project to maximize the project's benefits to residents and businesses, particularly those in disadvantaged communities. The residents in eastern Snohomish County that would benefit from this project live in homes that are primarily heated with electricity and in communities accessed via roads that are prone to closure in the winter. By coupling more reliable heat in the winter with wildfire prevention, this project would be a significant step towards year-round resilience in these communities. The improved reliability, increased resilience, and mitigation of wildfire hazards, aligns with our mission to manage partnerships with the whole community to lessen the impact of disasters on people, property, environment, and the economy.

Sincerely,

Lucia Schmit
Director
Snohomish Department of Emergency Management

MARYSVILLE

EMERGENCY MANAGEMENT

March 13, 2023

Secretary Jennifer Granholm
U.S. Department of Energy
1000 Independence Ave. SW
Washington, DC 20585

RE: Snohomish County PUD Grant Application – SnoSMART project

Dear Madam Secretary:

On behalf of City of Marysville Emergency Management, we request your consideration and approval of a $25 million grant for Snohomish County PUD's SnoSMART project.

These crucial software and infrastructure upgrades will greatly benefit our city and surrounding communities with 1) eventual significant reduced outage restoration times, particularly benefitting vulnerable residents, and 2) wildfire and wildfire smoke prevention and mitigation. As a city that includes federally recognized Justice 40 communities, we appreciate the project's particular focus on prioritizing work to benefit vulnerable populations.

PUD is a critical partner with our Emergency Management program through collaboration on Snohomish County's Emergency Support Function (ESF) system. The PUD Emergency Management Department contributes to the common operating picture by sharing information related to energy system damage, outages and restoration times. This partnership demonstrates our shared commitment to supporting the whole community.

We look forward to partnering with the PUD through the life of the project to maximize SnoSMART benefits to Marysville residents and businesses. The improved reliability, increased resilience and mitigation of wildfire hazards aligns with our mission to lessen the impact of disasters on people, property, environment and the economy.

Sincerely,

Sarah LaVelle
Emergency Preparedness Manager

(360) 363-8096

Civic Center
501 Delta Ave
Marysville, WA 98270

PROJECT DESCRIPTION AND ASSURANCES DOCUMENT (PDAD)

Project title: Snohomish County PUD's Secure Modern Automated and Reliable Technology Project

Applicant Name: Public Utility District No 1 of Snohomish County

Applicant Address: PO Box 1107, Everett, WA 98206-1107

Names of all team member organizations (if applicable): N/A

Principal Investigator John Hieb (425)-783-4395 JDHieb@snopud.com

Business Point of Contact Kimberly Johnston (425) 359-6676 KDJohnston@snopud.com

Include any statements regarding confidentiality: N/A

Federal Share: $30 Million
Cost Share: $30 Million
Total Estimated Project Cost: $60 Million

Item 1: Specify (mark with "X")" the FOA Topic Area and as applicable the Area of Interest (AOI):

_____Topic Area 1: **Grid Resilience Grants** (BIL section 40101(c))

__X__Topic Area 2: **Smart Grid Grants** (BIL section 40107)

_____Topic Area 3: **Grid Innovation Program** (BIL section 40103(b)) – Area of Interest 1 (**Transmission** System Applications)

_____Topic Area 3: **Grid Innovation Program** (BIL section 40103(b)) – Area of Interest 2 (**Distribution** System Applications)

_____Topic Area 3: **Grid Innovation Program** (BIL section 40103(b)) – Area of Interest 3 (**Combination** System Applications)

TOPIC AREA 1 Specific Items:

Item 2: Specify (mark with "X")" the entity type of the applicant organization:

_____electric grid operator

_____electricity storage operator

_____electricity generator

_____ transmission owner or operator

_____distribution provider

_____fuel supplier

If further description is needed for the specified entity type, please provide below:

Item 3: Please provide the total amount (USD) of qualifying resilience investments (as outlined in DE-FOA-00002740) that has been spent for the previous 3 years. Please also provide the time period utilized for calculation of this amount.

Total Amount:
Time Period for Resilience Investments:

Note: Topic Area 1 applicants must submit as part of their application, a report detailing past, current, and future efforts by the eligible entity to reduce the likelihood and consequences of disruptive events. This report should include efforts over at least the previous 3 years and at least the next 3 years and any broader resilience strategy used by the applicant.

Item 4: Is the eligible entity a Small Utility as defined in DE-FOA-0002740 (sells no more than 4,000,000 MWh of electricity per year)? If NO is selected, skip to Item 7.

_____Yes

_____No

Note: If YES, applicant must provide their Form 861 for the last reporting year submitted to the Energy Information Administration (EIA).

Item 5: Per BIL section 40101(e)(2) (C) APPLICATION LIMITATIONS.—An eligible entity may not submit an application for a grant provided by the Secretary under subsection (c) and a grant provided by a State or Indian Tribe pursuant to subsection (d) during the same

application cycle.

Therefore, is the eligible entity a Subaward/Subcontract recipient for an application submitted under IIJA Section 40101(d), ALRD 2736? If "YES", please describe the differences between the GRIP FOA 2740 application [40101(c)] and the ALRD 2736 [40101(d)] applications in the box below:

_____Yes
_____No

TOPIC AREA 2 Specific
No items

TOPIC AREA 3 Specific

Item 6: Specify (mark with "X")" the entity type of the applicant organization:

_____a State

_____a combination of 2 or more States

_____an Indian Tribe

_____a unit of local government

_____a public utility commission

If further description is needed for the specified entity type, please provide below:

Item 7:

Authorized Organizational Representative (AOR): please provide name, address, phone number and e- mail address for the authorized agent to bind the entity

Authorized Organizational Representative (AOR):

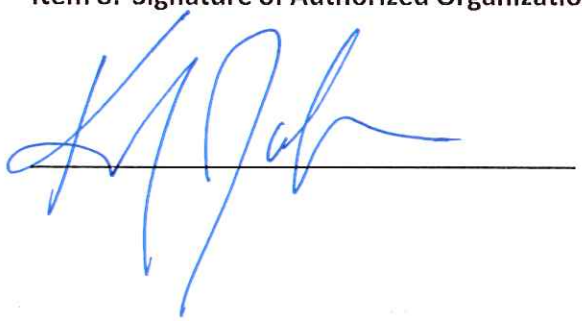
Name: Kimberly Johnston

Address: PO Box 1107, Everett, WA 98206-1107

Phone: (425) 359-6676

E-mail: KDJohnston@snopud.com

Item 8: Signature of Authorized Organizational Representative (AOR)



Locations of Work (DE-FOA-0002740)				
Prime or Sub	**Name**	**City**	**State**	**Zip Code + 4**
Prime	Public Utility District No 1 of Snohomish County	Arlington	WASHINGTON	98223-1002 through 98223-9996
Prime	Public Utility District No 1 of Snohomish County	Gold Bar	WASHINGTON	98251-4100 through 98251-9800
Prime	Public Utility District No 1 of Snohomish County	Granite Falls	WASHINGTON	98252-3600 through 98252-9800
Prime	Public Utility District No 1 of Snohomish County	Camano Island	WASHINGTON	98282-4000 through 98282-9551
Prime	Public Utility District No 1 of Snohomish County	Darrington	WASHINGTON	98241-9100 through 98241-9746
Prime	Public Utility District No 1 of Snohomish County	Everett	WASHINGTON	98201-1000 through 98201-9997
Prime	Public Utility District No 1 of Snohomish County	Everett	WASHINGTON	98203-1201 through 98203-7402
Prime	Public Utility District No 1 of Snohomish County	Everett	WASHINGTON	98204-1100 through 98204-9397
Prime	Public Utility District No 1 of Snohomish County	Everett	WASHINGTON	98205-1207 through 98205-7620
Prime	Public Utility District No 1 of Snohomish County	Everett	WASHINGTON	98208-1800 through 98208-9734
Prime	Public Utility District No 1 of Snohomish County	Index	WASHINGTON	98251-9165
Prime	Public Utility District No 1 of Snohomish County	Lake Stevens	WASHINGTON	98258-1402 through 98258-9818
Prime	Public Utility District No 1 of Snohomish County	Marysville	WASHINGTON	98270-2000 through 98270-9599
Prime	Public Utility District No 1 of Snohomish County	Marysville	WASHINGTON	98271-3406 through 98271-9793
Prime	Public Utility District No 1 of Snohomish County	Monroe	WASHINGTON	98272-1000 through 98272-9805

Prime	Public Utility District No 1 of Snohomish County	Snohomish	WASHINGTON	98290-0900 through 98290-9997
Prime	Public Utility District No 1 of Snohomish County	Snohomish	WASHINGTON	98296-3400 through 98296-9402
Prime	Public Utility District No 1 of Snohomish County	Stanwood	WASHINGTON	98292-1906 through 98292-9850
Prime	Public Utility District No 1 of Snohomish County	Startup	WASHINGTON	98293-9800
Prime	Public Utility District No 1 of Snohomish County	Sultan	WASHINGTON	98294-5000 through 98294-9802
Prime	Public Utility District No 1 of Snohomish County	Tulalip	WASHINGTON	98271-6007 through 98271-9771

Snohomish County PUD

SnoSMART Project Technical Volume

Topic Area 2: Smart Grid Grants (40107)

Entity Type:
Publicly Owned Electric Grid Operator

Technical Point of Contact:
John Hieb, P.E.
Principal Engineer
JDHieb@snopud.com
425-783-4395 (cell)

Business Point of Contact:
Kimberly Johnston
Director of Government Relations, External Affairs & Strategy
KDJohnston@snopud.com
425-359-6676 (cell)

Names of all Team Member Organizations
Snohomish County Public Utility District #1

Names of Senior/Key Personnel
Kim Johnston – Director of Government Relations, External Affairs and Strategy
John Hieb – Principal Engineer, System Planning and Protection
Mark Flury – Senior Manager Transmission & Distribution Systems Operation & Engineering
Lesley Maas – Senior Grant Coordinator
Ramona Marino – Operational Technologies Manager
Nick Johnston – Telecommunications Manager
Jeanne Harshbarger – System Planning and Protection Manager

Project Location(s):
Snohomish County and Camano Island (Washington State); Congressional Districts WA-001, WA-002, and WA-008

SnoSMART Project Overview

Snohomish County PUD's Secure Modern Automated and Reliable Technology Project

Background

About Snohomish County PUD

Snohomish County Public Utility District #1 (SnoPUD) is Washington State's largest public utility district, serving a population of 860,000 people and 25,000 businesses through 377,000 electric meters. Our service territory covers 2,200 square miles served by 6,600 miles of overhead and underground electrical line. We serve one of the fastest growing counties in the country and our communities have increasingly diverse needs and challenges. We have urban, semi-urban, and rural customers as well as large business customers including U.S. Naval Station Everett, the Boeing Company, the Port of Everett, Amazon, and several Native American tribes.

SnoPUD purchases nearly 80 percent of our energy from the Bonneville Power Administration, and the power we supply to our customers is on average 97 percent carbon-free. As we look to meet the evolving demands of a clean and equitable energy future, we will increasingly turn to innovative technologies and strategic partnerships to accomplish this critical work.

What is the SnoSMART Project?

The SnoSMART project is an infrastructure and software project intended to improve the flexibility, efficiency, reliability, and resilience of SnoPUD's grid. This $60 million project will deploy hundreds of wireless-connected smart grid devices to our distribution grid and upgrade the software tools to operate them. DOE funding will dramatically accelerate the SnoSMART project, reducing full deployment timeline from twenty years to five years. The SnoSMART project will transform system visibility and control for our grid operators, further prepare the grid for widespread electrification of vehicles and buildings, and enhance our ability to add distributed energy resources through advanced system planning.

Project Development Status

All elements of the SnoSMART project are part of SnoPUD's strategic plan and we are in the early development stages of the Supervisory Control and Data Acquisition / Advanced Distribution Management System (SCADA/ADMS) replacement element and the Distribution Automation Infrastructure (DAI) element. SnoPUD has successfully tested smart grid devices in our smart grid test lab and deployed the first field demonstration devices in March 2023. SnoPUD is currently developing a request for proposals for the SCADA/ADMS element.

Project Goal

SnoSMART will move smart grid capabilities from our centralized substations into the distribution grid via two core elements: Distribution Automation Infrastructure (DAI) and a

modern SCADA/ADMS system. These elements work together to deliver exciting new capabilities on the SnoPUD grid and move us toward the smart grid our future demands.

The DAI element will rely on our skilled IBEW electrical workers and engineering and design teams to install hundreds of communications enabled smart grid devices that will deliver:

- Wildfire risk mitigation and prevention in our territory with the highest wildfire risks
- Improved grid visibility and control capabilities for our grid operators
- New data analytics possibility with new grid monitoring devices

The SCADA/ADMS element will leverage the DAI infrastructure to enable DAI devices to engage in smart grid functions and to deliver:

- Grid reconfiguration capabilities that will increase flexibility, efficiency, reliability and resilience in normal operations and in response to outages caused by extreme weather.
- Improved grid voltage regulation in response to grid-wide resource adequacy needs.
- Protection system reconfiguration in response to real-time wildfire risk conditions.
- Improved information and planning tools to integrate electric vehicles, renewable energy resources, and other grid-edge devices.

DOE Impact

SnoSMART is a $60 million infrastructure and technology project for which SnoPUD plans to request $30 million in Smart Grid funding from the Department of Energy (DOE). The funding will dramatically accelerate the implementation of our two interrelated project elements.

- Our existing SCADA/ADMS software was commissioned 10 years ago and does not have the capabilities required for SnoPUD's utility of the future vision with thousands of smart grid devices, autonomous controls and grid-edge devices.
- The DAI element will enable smart grid functionality and wildfire mitigation capabilities in our rural and energy burdened communities in the north and east. SnoPUD currently budgets approximately one million dollars per year with a 20+ year deployment schedule for DAI.

The DOE funding would dramatically accelerate the implementation of the SnoSMART project by 15 years, create approximately 17 new, good-paying jobs in our local community, and allow SnoPUD to make a truly generational leap forward.

Community Benefits Plan

The SnoSMART Community Benefits Plan (CBP) utilizes existing strategic labor, community, and agency partnerships, including a productive and strong union partnership, to enhance community and grid resiliency for safe, healthy, sustainable and equitable communities.

The CBP describes the partnerships and underway initiatives that SnoSMART will leverage to amplify project benefits, particularly in DACs and with our workforce, and mitigate any

potential negative impacts. As SnoSMART implementation will go largely unseen by our customers, our plan centers on project elements that are complementary to resiliency and clean energy projects planned or underway and that are most visible to our communities.

SnoSMART benefits will flow to three broad categories of DACs, depending on the specific program benefits:

1. Disadvantaged communities within the geographic bounds of the DAI element, including the Tulalip Tribes, will benefit directly from wildfire risk mitigation. Furthermore, these DACs will realize significant reductions in outage restoration times.
2. All disadvantaged communities in Snohomish County will see benefits from increased system efficiencies and improved voltage regulation for peak demand reduction and conservation.
3. DACs in the regional airshed will directly benefit from avoidance of environmental exposure and burden created by wildfire smoke. Wildfire smoke has become a significant health risk to DACs in recent years.

SnoSMART requires a smart grid strategy, community support, and a skilled labor workforce. SnoPUD has everything needed for project success and is excited to partner with the Department of Energy to bring our SnoSMART vision to reality.

SnoSMART Technical Description

Relevance and Outcomes

SnoPUD is proposing installation of almost 1,000 smart devices utilizing the secure wireless communications network being deployed as part of SnoPUD's $100 million advanced metering infrastructure (AMI) project. Sensus, a Xylem brand is providing the innovative FlexNet™ communications network designed for a Distribution Automation (DA) system. SnoPUD has deployed two smart grid devices using the FlexNet™ communications in the field for demonstration. SnoPUD will leverage the lessons learned from our previous DA pilot, field demonstration, and industry peer guidance to deploy our DAI with confidence.

The DAI devices will provide remote telemetry, two-way information flow from the field to our control center, and remote reconfiguration capabilities upon installation. The SCADA/ADMS element will unlock the full potential of the DAI element upon its completion. The new SCADA/ADMS system will be capable of handling the large amount of new information coming in from smart grid devices, improve system efficiency through application of improved voltage controls, improve reliability through operator initiated and autonomous remote grid reconfiguration, and improve SnoPUD's ability to visualize and integrate electric vehicles (EVs) and other grid-edge devices.

How SnoSMART Addresses Topic Area 2's Goals and Objectives

SnoSMART will **increase visibility of the electrical system to grid operators** in multiple ways. The DAI element of the project will enable monitoring and control of field devices that otherwise would not allow remote communications as soon as the smart grid devices are installed. Later, the SCADA/ADMS element will organize, prioritize, and present sophisticated analysis information to grid operators in a manageable and actionable format.

SnoSMART helps mitigate the impacts of extreme weather on grid resiliency by providing remote system reconfiguration capabilities to minimize outage breadth and duration. SnoSMART will also help prevent wildfires by replacing potentially fire sparking fuses with single-phase reclosers in high fire risk areas and allow for remote configuration of wildfire specific system protection settings. Finally, SnoSMART will reduce peak system loads during extreme weather by optimizing system voltage.

SnoSMART will help **integrate and aggregate distributed energy resources** (DER) by increasing monitoring of distribution system protection and control devices and providing monitoring and control capabilities to all installed devices in the distribution system via the DAI element.

The project will **support the two-way flow of electric power and localized analytics** to provide information between electricity system operators and consumers. The project will enable improved outage communications with customers through improved restoration time estimates and SMS text messaging interfaces for outage, restoration, or safety purposes.

Grid-Benefitting Outcomes Delivered by SnoSMART

SnoSMART will dramatically improve system reliability through remote switching, automatic grid reconfiguration, and improved outage diagnosis capabilities. In 2021, switching on SnoPUD's distribution grid reduced total outage minutes by 35 percent. Based on outage analysis and industry experience we expect a further 25 percent improvement when circuit tie switches can be operated remotely to reconfigure the grid following a fault. Each smart switching device will immediately provide these remote-control benefits upon construction and integration into SnoPUD's existing and proposed SCADA systems.

SnoSMART will enable demand reduction capabilities including demand response and load control through voltage optimization. Demand response and voltage optimization will be used to address grid-wide resource inadequacy concerns.

How SnoSMART Supports State, Local, Tribal, Community, and Our Shared Goals of Regional Resilience in Reducing the Likelihood and Consequences of Disruptive Events, Decarbonization, or Other Energy Strategies and Plans

The core purpose of SnoSMART is to serve our customers more reliably by reducing the impact of outages, mitigating the potential impacts of wildfires and other weather-related events, better enabling demand management strategies, and supporting renewable energy integration.

Many of our tribal and underserved communities are in the heavily treed, rural areas that see the largest outage impacts from tree-related and extreme weather events. These areas are targeted for DAI deployment and will see the most benefit from distribution automation and fault location, isolation, and service restoration (FLISR) applications.

The areas targeted for DAI include most of the areas designated extreme and high-risk wildfire areas within SnoPUD's service territory. Our board of commissioners are supportive of the wildfire mitigation plan that will broadly benefit all SnoPUD customers and the regional airshed by reducing wildfire smoke exposure. As Puget Sound summers become hotter and drier, local wildfires and the resulting smoke pose an increasingly significant hazard to our communities. In recent years, the Puget Sound region has experienced nearly annual severe prolonged wildfire smoke events. These smoke events typically coincide with heat waves and are particularly severe for the region's DACs where many residents lack air conditioning and are therefore limited in the degree that they can close their homes and protect their families from smoke infiltration. DOE funding would both improve and accelerate our ability to deploy these critical infrastructure upgrades and better execute our wildfire mitigation plans.

SnoSMART helps SnoPUD meet customer and community timelines and expectations **for decarbonization and distributed energy generation.** The data collected from the DAI and an ADMS & SCADA upgrade will enable our system planners to produce more sophisticated system planning studies. These planning studies improve grid utilization in alignment with our demand side energy strategies. The new monitoring capabilities will improve modeling of time-varying loads such as those associated with EVs and informing innovative rate structures.

How SnoSMART will reduce innovative technology risk, achieve further deployment at-scale, and lead to additional private sector investments

SnoPUD is mid-transition from locally managed grid devices and operations to the centrally optimized smart grid of our future with better remote monitoring and control of our grid. SnoPUD has made significant progress toward our grid of the future by installing fiber communications to all 96 of our substations and replacing nearly half of our electromechanical recloser installations with reclosers capable of communicating to an ADMS system. SnoPUD's next step is to bring smart grid out to the distribution grid. We currently plan for this transition to take 20 years, mainly due to financial constraints. While we are excited for our grid of the future, we cannot responsibly afford a faster transition given our current resources. Federal funding for SnoSMART will help us accelerate adoption of a more modern grid with communications to our entire service territory, enabling us to incorporate other new technologies in just five years.

New technologies we hope to incorporate following the DOE-funded project include a Distributed Energy Resource Management System (DERMS) for DER control. A DERMS would utilize the ADMS for operational control to increase efficiency and manage EV charging and vehicle-to-grid (V2G) resources. We are committed to generating and buying carbon-free power, and we see DERs as integral to that initiative. A DERMS system will allow us to observe

and remotely control DERs to maintain grid stability as DER adoption increases. Using the DAI element's remote grid reconfiguration capabilities, SnoPUD could create electrically isolated islands which could be powered by microgrids to increase the grid's resiliency.

The funding for remote control of devices will allow us to utilize our ADMS system to improve operational efficiency through voltage optimization and network topology optimization. While software can model these efficiencies, without remotely operable devices in the field, there is no way to implement these changes and realize the benefits.

SnoSMART supports private sector investment into transportation decarbonization by enabling SnoPUD to facilitate the aggregation and integration of EVs and other grid-edge devices more easily into our system. Not only does Washington State have some of the most aggressive electric vehicle standards in the nation, but our service territory includes the Port of Everett, which plans to fully electrify their operations, and Interstate-5, the main North-South highway corridor of the west coast. Current SnoPUD models predict that residential EV adoption will drive a 40 percent increase in peak residential sector load; other major EV studies show similar impacts.

We predict many businesses we serve will begin converting their fleets to EVs. Recently, a large distribution center operator contacted SnoPUD with plans to electrify their fleet vehicles. In addition, we are working with Everett Transit to install and pilot induction charging for electric buses as part of their transit electrification plans; we expect to see other transit agencies and bus operators follow suit. Expanded communications to commercial, industrial, and residential customers will enable us to employ more energy efficient and economic load-shaping strategies related to EV charging.

Finally, funding for this project will enable SnoPUD to incorporate new devices to help mitigate wildfire and extreme weather events. We believe it is critical for the continued well-being of our communities that we take extra precautions to help prevent our equipment from becoming a possible ignition source for a wildfire. Please see Use Case 1 below for detail of how SnoSMART supports our Wildfire Mitigation Plan.

SnoSMART Use Cases and Desired Outcomes

Use Case 1: Wildfire & Extreme Weather Risk Mitigation

In 2020, SnoPUD contracted with BKI Engineering to develop a Wildfire Mitigation Plan detailing operational policies and practices to prevent, prepare for, and respond to wildfire events. BKI Engineering identified the extreme and high-risk portions of our territory for wildfire risk where our prevention and mitigation efforts should be concentrated.

Wildfire mitigation baseline practices – SnoPUD is implementing a wildfire mitigation strategy which will change the protection strategy in our high-risk areas. Effectively, the distribution substation breakers are programmed with a wildfire specific protection strategy upon entering the high-risk weather conditions and are restored to 'normal' protection strategy at the end of

wildfire season. This seasonal adjustment is only done at our substation breakers, not for field protective devices.

SnoSMART Impact – The DAI protective devices will also be programmed with wildfire specific protection strategy allowing for a more targeted approach. The remote control capability also allows SnoPUD to move between normal and wildfire-specific protection settings more freely resulting in a risk-based adjustment of protection strategies.

We determined that the greatest causes of wildfires for our service territory would be arcing from conductors falling on the ground, and molten material ejected by expulsion fuses during fault clearing. The DAI element will address these root causes by replacing expulsion fuses with single phase reclosers with vacuum bottle technology.

SnoSMART will replace 350 fuses in extreme and high-risk areas with single phase reclosers. These reclosers accept remote setting changes based on field conditions to operate on faster tripping and enable or disable reclosing. The devices, along with the DAI communication network we are currently deploying, allow control center staff to utilize ADMS system controls to remotely enable all DAI protective devices to switch into our wildfire specific protection strategy.

The areas with the highest wildfire risk are concentrated in the northern and eastern areas of our service territory. Upon request SnoPUD can share a detailed map highlighting the proposed locations of single phase recloser projects overlaid on a wildfire risk heat map.

Use Case 2: Voltage and VAR Optimization / Demand Voltage Reduction

There is a well-established relationship between the voltage supplied to an electric customer and the amount of power that customer uses. Specifically, lower voltages can result in lower energy consumption. SnoPUD has been a leader in the use of conservation voltage reduction (CVR) for decades.

Voltage control baseline – We use our substation load-side tap controllers (LTCs) to regulate the voltage in the lower end of the allowable voltage range. This is an open-loop control using only the information locally available at the substation transformer or distribution system voltage regulators.

SnoSMART Impact – The VVO application will utilize the DAI measurements, system configuration information, bell-weather AMI measurements, and power flow capabilities to improve the voltage optimization from an open-loop control to a closed-loop control strategy. The centralized control will also allow SnoPUD to dynamically adjust the control strategy to respond to grid emergencies, such as critical peak demand periods, with demand voltage reduction while providing customer benefits throughout the year.

The shorter circuits in the urban and semi-urban ‘Everett’ and ‘South’ portions of our service territory are ideal candidates for VVO application. The DAI will enhance the VVO application on longer, rural circuits in the ‘East’ and ‘North’ portions of our service territory with remote control of regulators and capacitor banks.

Use Case 3: Fault Location, Isolation, and Restoration (FLISR)

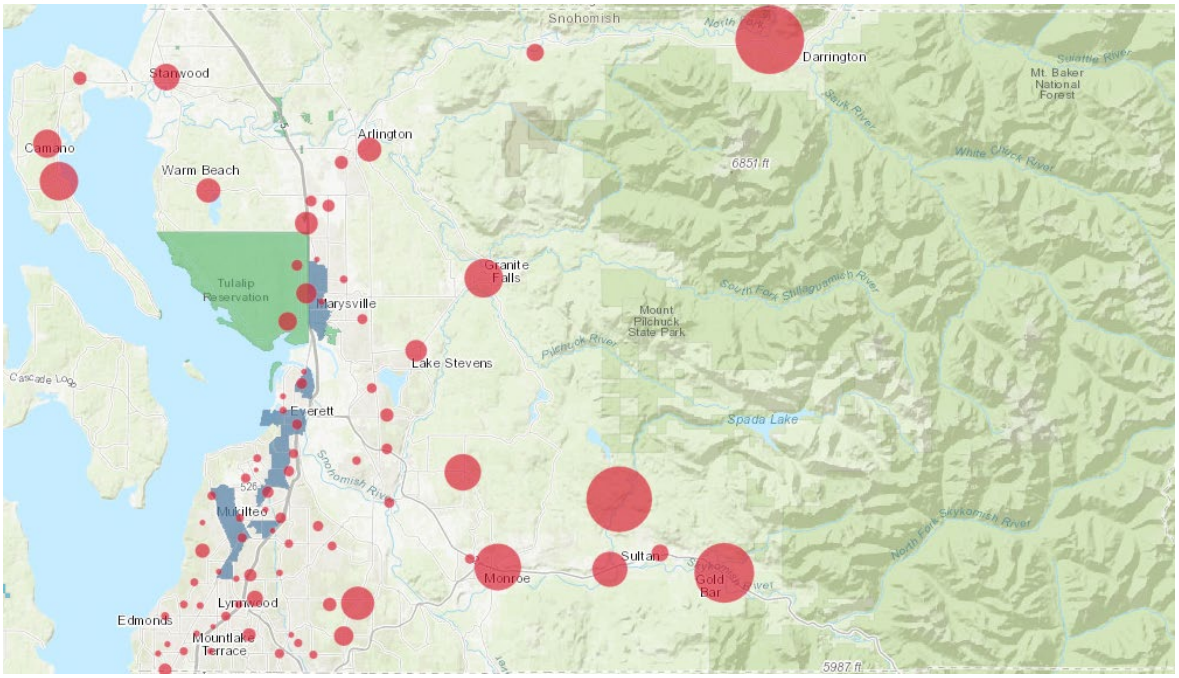
FLISR is an ADMS module which uses data gathered from field devices to pinpoint a fault location to a zone between two distribution devices and automatically restore all customers outside that faulted zone.

Outage identification and isolation baseline – Our control center is alerted of outages on the distribution system by customer calls. Operators dispatch a serviceperson to investigate the outages and assess the damage. The system operator then directs the serviceperson to drive to distribution switches to isolate damage and restore customers in unaffected sections of the system. This identification and isolation process takes 30 to 90 minutes, during which all customers on the circuit are without power.

SnoSMART Impact – The control center is notified of outages within seconds based on the new AMI and DAI devices. The operators diagnose the location of the fault based on DAI notifications and remotely operate distribution switches to isolate the damage and restore customers in unaffected sections of the system. This identification and isolation process can take 5-10 minutes with operator control and will be reduced to 1-5 minutes with the closed-loop FLISR application. SnoSMART will also enable improved system flexibility and efficiency through remote grid reconfiguration.

SnoPUD's DA pilot system and peer utility experience demonstrated the ability to improve reliability metrics by 25 percent or more. SnoSMART's DAI element will be deployed in the parts of our service territory that serve rural and tribal communities, which are also areas that experience more faults and realize greater benefits from the FLISR system.

Map 1: Disadvantaged Communities and Substation Reliability



Reference: DOE Disadvantaged Communities Reporter, https://www.energy.gov/diversity/justice40-initiative

Map 1 highlights the DOE Justice 40 disadvantaged communities (DACs) and reliability metrics for SnoPUD's substations. Each circle represents the relative reliability of one of SnoPUD's substations; smaller circles represent better reliability. The reliability metric used for circle size is System Average Interruption Duration Index (SAIDI); SAIDI is the most relevant metric for the SnoSMART project goals.

Feasibility

SnoPUD is well-positioned to achieve all targets laid out in this application and has experience with each piece of these interrelated project elements. SnoPUD owns all necessary infrastructure to accomplish a project of this scale. Specifically, SnoPUD is finishing the communication network deployment, a $40 million capital project, on time and on budget.

SnoPUD deployed a SCADA/ADMS system in the early 2010s and understands the development, configuration, and maintenance needs of SCADA/ADMS systems.

SnoPUD deployed a DA pilot in the 2010s to demonstrate the benefits and capabilities of smart grid devices deployed in the field. Today, SnoPUD is moving forward with a demonstration project utilizing the technology we are proposing in this application. SnoPUD has proven the technology exceeds the performance requirements of a smart grid device in our Smart Grid Test Lab and are confident field demonstrations will achieve similar success.

SnoPUD has an excellent relationship with the International Brotherhood of Electrical Workers Local No. 77 (IBEW) tasked with infrastructure construction, operations, and maintenance. This relationship is further described in the CBP. IBEW has shared their support for the project and will be involved in every step from engineering and design through commissioning and operations. SnoPUD has the community support from Tulalip Tribes, Snohomish County, the City of Marysville, and Puget Sound Clean Air Agency.

Cybersecurity Mindset

Cybersecurity is a core element of our technology and operational culture. As we evolve and innovate, we strive to "bake in" rather than "bolt on" security across the information (IT) and operational technology (OT) enterprise. Though regulated by NERC Critical Infrastructure Protection (CIP) we endeavor to go beyond compliance, grounding and mapping our cybersecurity program in the five key areas and best-practices outlined in the National Institute of Standards and Technology Cyber Security Framework (CSF).

Understanding that the threat posed by malicious cyber actors has created a climate in which a cybersecurity event is more likely than ever, we have invested heavily in enterprise-wide monitoring, alerting, and response technologies with a focus on recovery and resilience and, to the maximum extent practicable, our architectures are designed to "fail secure". We annually assess our cybersecurity maturity through rigorous self-assessments, third-party audits, and penetration tests using DOE and DHS products such as the Cybersecurity Capability and Maturity Model (C2M2) and CISA Cyber Resilience Review (CRR) and, notably, an innovative multi-year partnership with the Washington National Guard Cyber Mission Assurance Team. In

doing so, we have evolved our cybersecurity culture to focus on repeatable and sustainable processes, versus solely relying on technical controls.

These core cybersecurity functions are bolstered by a robust data classification, handling, security and privacy function - ensuring we understand the full data lifecycle while focusing on minimization. Further, we have integrated supply chain and vendor management functions into our cybersecurity and risk management programs, recognizing the essential role third-parties play in the provision of critical services and the role we play in enhancing the security of our supply chain.

Workplan

Project Objectives

The SnoSMART project is a multi-year infrastructure and software project meant to deliver smart grid benefits to SnoPUD's entire customer base. The project goals are to install approximately 1,000 smart grid devices in the north and east areas of SnoPUD's service territory and pair them with a modern SCADA/ADMS system to enable smart grid functions and mitigate wildfire risk.

The SnoSMART project will improve visibility to our grid operators, mitigate wildfire risks, enable remote configuration of protection systems, enable smart grid functions, improve SnoPUD's ability to integrate DERs, and enable customer-benefitting smart grid functions FLISR and VVO.

Buy America Requirements

The DAI project element will involve the alteration, and maintenance of SnoPUD's distribution infrastructure. SnoPUD confirmed the suppliers of the equipment intended for the DAI element will meet the 'Buy America' requirements as specified in Appendix C of DOE's document "FundOpp_DE-FOA-002740_Amd_000005.pdf".

Technical Scope Summary

Distribution Automation Infrastructure Element

The DAI element is focused on the installation of hundreds of wireless-connected smart grid devices meant to increase the visibility and controllability of the distribution grid. The workplan was developed before detailed design work has taken place so equipment numbers are based on numbers of existing equipment types and a device-per-feeder assumption that will meet the end-of-project goals. SnoPUD has assumed three smart switches[1] and/or reclosers per distribution circuit in our north and east regions.

[1] If the detailed design phase recommends fewer than three smart switches per feeder or operational efficiencies exceed expectations, substations feeding our disadvantaged communities in Everett along the Interstate 5 corridor will be added to the project scope.

The DAI element will install or retrofit approximately 200 protective reclosers, 300 smart switches, 120 3-phase regulator banks, 10 3-phase capacitor banks, and 350 single phase recloser installations.

The element workplan tasks include development and testing, design, and construction. Since the DAI element is a collection of hundreds of individual device installations, the workplan structure focuses on the completion of the process on a substation-by-substation basis. The tasks for each substation include development and testing, design, and construction.

Development and Testing

The DAI team will develop the control panel templates and communication settings for each new type of equipment. The scope for this work includes creating and testing protection capabilities, confirming communications between various systems, and installation and verification in our Smart Grid Test Lab. The development and testing will conclude when department leads affirm construction readiness. The development and testing must be complete before any smart grid devices of that type will be installed in the field. As part of SnoPUD's pilot demonstration project, the SEL 651R-2 recloser control panel has gone through the development and testing phase. The SEL 651R-2 control panel is ready for design and construction.

Design

In the design phase the DAI team will perform detailed design work for one substation. The DAI design for a substation includes:

- Identifying ideal locations for smart switch device retrofits and/or new installations.
    - This is a highly collaborative process relying on IBEW expertise on construction and field safety constraints, system operations, and engineering with use of data analytics for optimal location for DAI devices.
- Create detailed project drawings and acquire necessary permits for construction.
- Control panel settings development.

Construction

The DAI team will install the new equipment in the field. This is a collaborative process that includes the IBEW labor installing the equipment in the field, relay and telecom technicians verifying the equipment is properly functioning, SCADA and OT teams configuring and testing the devices in the SCADA system, and commissioning.

SCADA/ADMS Replacement Element

SnoPUD's existing SCADA/ADMS system was commissioned 10 years ago and does not have the capabilities required for SnoPUD's utility of the future vision. Replacing a core enterprise system like SCADA/ADMS is a significant undertaking since it relies on integrations with many other business software tools including GIS, asset management software, power supply dispatch, work order management, crew scheduling, customer information system, and outage map systems.

The element is divided into a SCADA/OMS deployment phase and an ADMS phase. The SCADA system installation is focused on ensuring the measurements and control of all communicating equipment in the field remains operational for our control center. The SCADA/OMS phase will develop the integrations between SnoPUD's enterprise software systems and the new SCADA system. The OMS system will be replaced and is in scope for this grant application since its electrical connectivity model is a pre-requisite to the ADMS smart grid applications like power flow, FLISR, and VVO. SnoPUD's existing system accurately solves power flows every day. The power flow application is the building block on which the FLISR and VVO applications are built. This head start gives us confidence in the proposed ADMS implementation timeline.

The ADMS phase will build upon the fully functioning SCADA/OMS system to perform its smart grid functions. The ADMS phase will begin shortly after the user acceptance testing for the SCADA/OMS phase. The staffing needs for the ADMS project element are largely the same as the SCADA/OMS phase with the addition of dedicated ADMS engineers with expertise in power systems analysis. The ADMS project element will ensure proper power system modeling and software configuration required for the FLISR and VVO smart grid applications.

The SCADA/ADMS element will conclude with FLISR and VVO in production in a demonstration area serving customers on the Tulalip Indian Reservation.

Work Breakdown Structure and Task Description Summary

The DAI and SCADA/ADMS project elements will be detailed separately throughout the WBS and task descriptions since the tasks are independent of each other will be completed in parallel.

Budget Period 1 – Project Kickoff, Develop and Test Smart Switch and Single Phase Recloser, Define OMS and SCADA, Community and Labor Partner Engagement

The DAI element will kick off with a series of stakeholder meetings, discussion and agreement on shared goals, and a schedule on reporting metrics. Next, the DAI team will begin the smart switch design for the first five identified substations in the demonstration areas. The smart switches for the first five substations will be under construction by end of budget period one. The initial substations are near the city of Arlington and the Tulalip Indian Reservation and were selected because they are the sites of our decommissioned distribution automation pilot areas.

The DAI team will 1) Develop and test a smart switch and a single phase recloser, 2) Design five substations, and 3) Construct recloser panel retrofit projects for five substations in pilot areas. **Go/No-Go** – First station design is complete.

The SCADA/ADMS team will complete the proposal evaluation process, conduct contract negotiations, and award a contract with the SCADA/ADMS vendor. The SCADA/ADMS teams for SnoPUD and the vendor are established. The SCADA/ADMS element will begin near the end of budget period one. **Go/No-Go –** SCADA/ADMS Vendor contract is signed.

Outreach team will explore partnership agreements and engage DACs to ensure utility and community alignment with initial project rollout. The labor team will engage IBEW to ensure early alignment with workplan and will explore workforce initiatives with community partners identified in CBP. **CBP SMART Goal**: Meet with representatives of all identified DACs in project area.

Budget Period 2 – Smart Switch Deployment, Develop and Test Voltage Regulator, and Design, Install, Build SCADA/OMS Equipment

The DAI team will 1) Develop and test a voltage regulator control panel, 2) Design ten substations, and 3) Construct recloser and smart switch projects for ten substations.

The SCADA/ADMS team will conduct the OMS and SCADA definition phase. The team is educated on the software capabilities and requirements. The team will also define system communications and hardware architecture and develop a baseline system configuration. Design workshops are held for all SCADA/OMS modules, system hardware, data model (GIS and other sources), and all external system integrations. **Go/No-Go** – SCADA/ADMS software installation is complete and system parameters are configured.

CBP SMART Goal: Execute at least one partnership or workforce agreement.

Budget Period 3 – Smart Switch Deployment, Finish Development and Testing, Start Wildfire Mitigation and Voltage Regulation, SCADA/OMS Interface Development and System Testing

The DAI team will 1) Complete the development task with the 2- and 3-phase single phase recloser configurations and the capacitor bank, 2) Design ten substations, 3) Construct recloser and smart switch projects for ten substations, 4) Construct approximately one-third of the regulator panel replacement jobs, and 5) Begin the wildfire mitigation project with design and construction of 25% of the single phase recloser devices. **Go/No-Go** – All device development work is complete and all smart grid devices are approved for construction.

The SCADA/ADMS team will conduct the build, test planning, and testing phase of the SCADA/ADMS element. The team will build interfaces to SnoPUD enterprise systems required for SCADA/OMS functionality. Customizations will be built and documented. Test cases are developed based on system requirements. The site acceptance, system performance, system integration, user acceptance tests are all created. **Go/No-Go** – The SCADA/ADMS team has completed testing and has accepted SCADA/OMS system. Outreach team engages emergency management partners to ensure project alignment with regional emergency management planning.

CBP SMART Goal: Incorporate wildfire mitigation and voltage regulation into regional emergency management planning.

Budget Period 4 – DAI Device Design and Deployment, SCADA/OMS Training and Production Cutover

The DAI team will 1) Design remaining 10 substations, 2) Construct one third of the voltage regulation devices, 3) Construct recloser and smart switch devices for final 10 substations, and 4) Continue wildfire mitigation project with design and construct 25% of the single phase recloser devices.

The SCADA/ADMS team will prepare for production cutover in the training phase. During this phase the subject matter experts will train all users of the software on all business processes using the new software platform. The SCADA/ADMS team will perform point-to-point testing of all Bulk Energy System substation points as well as spot checking data models in the new system for all converted substation models.

The production cutover phase includes a readiness review to ensure all tasks are complete and provides a step-by-step plan to cut over the system into production. Tabletop walk throughs and system validation work will prepare the team to perform production cutover of the SCADA/OMS software. **Go/No-Go** – The SCADA/OMS system is cutover to production.

The team will also kickoff the ADMS portion of the project with system design and software installation. All system architecture and requirements are defined and approved. Design workshops are held for the ADMS modules, and software is installed and configured based on requirements. The ADMS testing plans will be generated by the end of budget period four.

CBP SMART Goal: Demonstrate reduced energy burden, increased energy resilience and reduced energy burden per metrics identified in CBP.

Budget Period 5 – Finish DAI Deployment; ADMS Testing, Training, Demonstration Cutover

The DAI team will 1) Design and construct smart switch devices for remaining 4 substations, 2) Complete voltage regulation device construction with remaining voltage regulators and capacitor banks, and 3) Complete the wildfire mitigation work with construction of the final 50% of the single phase recloser projects. **Go/No-Go** – DAI smart grid device deployment is complete.

The SCADA/ADMS team will progress through the ADMS build, testing, training, and cutover phases. During the build phase the interfaces to enterprise systems are configured and customizations identified and created. During the testing phase the team verifies the integrations and system performance requirements are met. The team also verifies the software meets user expectations. During the training phase the vendor trains SnoPUD on the commands required to meet the business process requirements and trains subject matter experts. SnoPUD subject matter experts train ADMS end users. Finally, the ADMS system is moved into production in a demonstration area. For the ADMS functions, it is best practice to only cut over a demonstration area and expand ADMS operations on an incremental region-by-region basis. **Go/No-Go** – The ADMS FLISR and VVO functions are cutover to production in the demonstration area.

CBP SMART Goal: Demonstrate reduced energy burden, increased energy resilience and reduced energy burden per metrics identified in CBP.

End of Project Goals

The SnoSMART project will deploy DAI in the north and east areas of our service territory. The infrastructure will mitigate wildfire risks, allow for remote grid and protection scheme reconfigurations, and improve grid visibility to operators. The SCADA/ADMS system will demonstrate the smart grid benefits of FLISR and VVO in the demonstration area on the Tulalip Indian Reservation in preparation for a system-wide implementation.

Project Management Plan

The SnoSMART project will adopt a hierarchical structure to ensure on-time and on-budget project completion. The program sponsor will be a representative of SnoPUD's executive leadership team and will ensure adequate resources are available to the three project element managers.

The DAI element will be overseen by the existing DAI element manager which will transition from a part-time position to a full-time position. The DAI element manager will oversee all aspects of the infrastructure deployment ensuring the development, design, and construction work is completed according to the proposed schedule. The DAI element manager will coordinate with engineering, OT/IT, scheduling, and line construction departments. All interdepartmental dependencies and relevant handoff documentation have been identified as part of the existing DAI element. Several new hires in the engineering, design, and software administration roles tasked with preparing the DAI equipment for construction will be assigned to this element manager. The DAI element manager will coordinate with IBEW resources to implement and maintain a construction schedule that meets element goals and objectives laid out in the element plan. The engineering and design team will consist of a distribution engineer, protection engineer, automation engineer, telecommunications technician, relay technician, ADMS engineer, OT specialist and will pull from the IBEW construction team to build the infrastructure.

The SCADA/ADMS element manager will serve as the primary contact with the SCADA/ADMS vendor and will manage the schedule and partnership. Their responsibilities include ensuring the overall OT/IT element meets the goals and designs laid out in this funding opportunity as well as all other element requirements that fall outside the scope of the grant's objectives. This manager will oversee the SCADA/ADMS implementation and ensure SnoPUD meets the milestones and go/no-go points associated with the SCADA/ADMS element. This manager will oversee OT specialists, database administrators, DMS engineers, SCADA trainers, control center SMEs, and application analysts.

The third element manager is responsible for the IT infrastructure implementation. Specifically, this element manager will ensure all computer and networking hardware are installed, maintained, and meet all cybersecurity requirements. This manager will also oversee the integrations between the SCADA/ADMS system and SnoPUD's enterprise software solutions.

The team will include infrastructure architects, information security analysts, application analysts and architects.

An overall program manager will be assigned to the project and will ensure the project elements are coordinated, resources are available, and SnoPUD exceeds DOE's project management and reporting needs.

SnoPUD has developed a detailed DAI smart device workflow diagram documenting the tasks performed by each work group as well as all handoffs between departments. We have also developed an in-depth SCADA/ADMS work plan with greater granularity than is shown in this application. If requested, SnoPUD will share these supporting documents with DOE.

The employment strategy for the SnoSMART project relies on the reassignment of existing SnoPUD personnel to the project and new hires to backfill the reassigned employees with new hires. This will ensure the project has a technically qualified project team ready to implement these new project elements on-time and on-budget. SnoPUD will continue to build its relationship with IBEW to ensure all aspects of the project are properly installed and safe to operate.

Risk Management

As with any endeavor of this nature there are inherent risks to its success. SnoPUD has identified these risks and their possible impacts on the project. Having identified the risks, mitigation strategies have been developed for implementation as needed to ensure that the project will succeed. Risk management is an integral part of the project management process and the program manager will incorporate sufficient controls in the project to flag any risk that may potentially start to develop and have the appropriate mitigation plan ready to implement.

Risk Factor	Task Related Impacts	Mitigation
Schedule	Schedule changes will impact project interdependencies, critical path and implementation date	Utilize internal and consultant personnel experienced in smart grid applications to generate the project implementation plan and schedule. Incentivize SCADA/ADMS vendor to complete project on-time and include in contract negotiations.
Supply Chain	Increased lead time in both computer hardware and DAI hardware	SCADA/ADMS schedule includes extended hardware acquisition time. DAI project can adjust schedule based on equipment availability.
Resources: Labor, Material, Equipment Availability	Schedule changes will impact project interdependencies, critical path and implementation date	Initial dedication of the experienced personnel to the project; ensure proper lead time when ordering material and equipment
Technology (grid and computer hardware)	Must purchase all of the hardware, software, material and equipment made in USA	Primary vendors have verified they can meet Buy America requirements. Contracts and purchasing department will verify for all equipment.

Weather	Unusual weather events or natural catastrophe may delay the design or installation process.	Installation tasks may be able to be scheduled during non-storm season, reducing the risk.
Regulatory - Permits and approvals	The installation of new poles will be minimal but will be subject to municipal and county requirements and approval; Easements and tree permits may be required from property owners.	Endeavor to work within the local requirements when possible. If installations are disapproved by local jurisdictions in particular instances, seek alternate designs or work to educate local officials on project importance; seek higher governmental support.
O&M (Post-construction support)	Union issues (pay, hours, safety) may arise regarding operation.	Get initial buy-in from union and operators.
Public Concerns	Area residents may object to installation of new equipment in their neighborhoods.	Find alternate design or acceptable locations for infrastructure.

Budget Summary

SnoPUD is confident we can meet the DAI element timelines as this project represents less than ten percent of our annual capital budget and we have IBEW, executive leadership, and community support.

SnoPUD is also confident in our ability to meet the milestones laid out in the project schedule. The SCADA/ADMS project will be a heavy lift for our IT and OT resources, but we are confident both the existing technical team's capabilities and SnoPUD's ability to attract new resources to accomplish this element on-time and on budget.

The spending plan for each project is broken down by budget period and by project element. SnoPUD can provide more detailed budgets and proposed project schedules upon request.

	Cost Type	BP1	BP2	BP3	BP4	BP5	Total
DAI	Personnel + Fringe	$1,020,350	$1,925,225	$ 3,435,909	$ 3,527,541	$ 3,515,503	$ 13,424,528
	Equipment	$1,580,000	$3,252,900	$ 4,905,023	$ 5,105,126	$ 4,081,670	$ 18,924,719
	Other	$ 185,710	$ 369,555	$ 614,458	$ 614,458	$ 576,881	$ 2,361,062
SCADA/ ADMS	Personnel + Fringe	$ 634,223	$3,116,543	$ 3,647,087	$ 2,810,537	$ 2,860,100	$ 13,068,490
	Contractual	$2,906,500	$1,162,600	$ 4,650,400	$ 2,325,200	$ 581,300	$ 11,626,000
DAI Subtotal		$2,786,060	$5,547,680	$ 8,955,389	$ 9,247,125	$ 8,174,054	$ 34,710,309
SCADA/ ADMS Subtotal		$3,540,723	$4,279,143	$ 8,297,487	$ 5,135,737	$ 3,441,400	$ 24,694,490
Administrative		$ 241,168	$ 90,376	$ 93,991	$ 97,751	$ 101,661	$ 624,948
SnoSMART Total Costs		$6,567,951	$9,917,200	$17,346,867	$14,480,613	$11,717,115	$ 60,029,746

Project Milestones and Go/No-Go Points

SnoPUD has identified milestones and Go/No-Go points for each of the SnoSMART project elements and is confident in our ability to meet these milestones. The Go/No-Go points represent critical path milestones that will either kick-off the next portion of work or demonstrate completion of a critical milestone. SnoPUD will brief DOE upon completion of the Go/No-Go work and seek approval before moving into the next project steps.

Project Schedule and Milestones

Project	Task #	Phase Description	Budget Period 1				Budget Period 2				Budget Period 3				Budget Period 4				Budget Period 5			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
DAI	1	DEVELOPMENT AND TESTING			*	*				*		*	*	GnG								
	2	SMART SWITCH DESIGN PHASE		GNG																*		
	3	SMART SWITCH INSTALL PHASE			*																*	
	4	VOLTAGE REGULATION DEPLOYMENT										*					*				*	*
	5	WILDFIRE MITIGATION DEPLOYMENT									*											GnG
SCADA\OMS	1	INITIATE PHASE	*		GnG																	
	2	DEFINE PHASE				*	*	*														
	3	DESIGN PHASE							*													
	4	INSTALL PHASE							*	GnG												
	5	BUILD PHASE											*									
	6	TEST PLANNING PHASE									*	*										
	7	TESTING PHASE											*	GnG								
	8	TRAINING PHASE													*							
	9	CUTOVER PHASE															GnG		*			
ADMS	1	DEFINE PHASE														*						
	2	DESIGN PHASE															*					
	3	INSTALL PHASE																*				
	4	BUILD PHASE																		*		
	5	TEST PLANNING PHASE																				
	6	TESTING PHASE																	*	*		
	7	TRAINING PHASE																			*	
	8	CUTOVER PHASE																			GNG	*

Milestone #	Budget Period Quarter	Description	Success Value
DAI.1	BP1-Q1	Substation Design	First substation's smart switch design complete
DAI.2	BP1-Q3	Smart switch development	The development for a smart switch is complete; ready for construction projects
DAI.3	BP1-Q3	Smart switch construction	First substation's smart switch construction complete
DAI.4	BP1-Q4	Single Phase recloser development	Single phase recloser development is complete; ready for construction projects
DAI.5	BP2-Q4	Voltage regulator development	Voltage regulator development is complete; ready for construction projects
DAI.6	BP3-Q1	Wildfire mitigation installation	First single phase recloser is in service
DAI.7	BP3-Q2	Two Phase recloser development	Two phase recloser development is complete; ready for construction projects
DAI.8	BP3-Q2	Voltage regulation installation	First voltage regulator is in service
DAI.9	BP3-Q4	Capacitor bank development	Capacitor bank development is complete; ready for construction projects
DAI.10	BP3-Q3	Three Phase recloser development	Three phase recloser development is complete; ready for construction projects
DAI.11	BP3-Q4	Capacitor bank development	Capacitor bank development is complete; ready for construction projects
DAI.12	BP4-Q3	Voltage regulator progress	Two thirds of voltage regulators have been constructed
DAI.13	BP5-Q3	Smart switch complete	Smart switch construction is complete for all substations
DAI.14	BP5-Q3	Voltage regulator progress	All voltage regulators and capacitor banks have been constructed
DAI.15	BP5-Q4	Voltage regulation complete	All voltage regulation projects have been constructed
DAI.16	BP5-Q4	Wildfire mitigation complete	All single phase regulator projects have been constructed

Milestone Summary

Milestone #	Budget Period Quarter	Description	Success Value
SCADA.1	BP1-Q1	Project Initiation.	Project initiated with DOE and scheduled base lined.
SCADA.2	BP1-Q3	Contract signed with ADMS vendor.	Contract signature.
SCADA.3	BP1-Q4	SCADA\OMS Overview Workshop.	Workshop completed, documented and action items identified.
SCADA.4	BP2-Q1	Collect Data Workshop	Workshop completed, vendor received requested data, missing data identified.
SCADA.5	BP2-Q2	Buisiness Process Mapping	SnoPUD and Vendor review, map, and document business processes.
SCADA.6	BP2-Q3	Hardware Procurement	SCADA hardware procured and installed at SnoPUD facilities
SCADA.7	BP2-Q4	System Configuration	All SCADA and OMS software is configured based on original system design
SCADA.8	BP3-Q1	Develop Testing Plans	Site acceptance test, performance teste, and user acceptance tests are created
SCADA.9	BP3-Q2	Develop Test Cases	Sys. configuration and data models are created and loaded for software testing.
SCADA.10	BP3-Q3	Build SCADA/OMS interfaces.	Integration software is developed based upon designs and unit tested and passed.
SCADA.11	BP3-Q3	Site acceptance test.	Site acceptance test performed and system formally accepted.
SCADA.12	BP3-Q4	User acceptance test.	User acceptance test performed, defects identified and corrected.
SCADA.13	BP4-Q1	SCADA/OMS Software Training	Training on SCADA/OMS software begins for SMEs, end users, and administrators.
SCADA.14	BP4-Q3	SCADA/OMS Software Cutover	The SCADA/OMS software has been put into production
SCADA.15	BP5-Q1	Post cutover support.	System cut over and in production. System officially in post cutover support.
ADMS.1	BP4-Q2	ADMS Kickoff Meeting	Workshop completed, documented and action items identified.
ADMS.2	BP4-Q3	ADMS Interface Design	Integration software is developed based upon designs and unit tested and passed.
ADMS.3	BP4-Q4	System Configuration	All ADMS software is configured based on original system design
ADMS.4	BP5-Q1	Integration Testing	System integration tests are complete
ADMS.5	BP5-Q2	ADMS Customizations Built	ADMS system customizations are built and verified.
ADMS.6	BP5-Q2	User acceptance test.	User acceptance tests complete
ADMS.7	BP5-Q3	End user training.	End users trained on the use of the ADMS software.
ADMS.8	BP5-Q3	System cutover.	System cut over and in production.
ADMS.9	BP5-Q4	Stabilization of demonstration area	Stabilization of demonstration area and performance data gathering

Technical Qualifications and Resources

SnoPUD has an employee pool with experience in every aspect of the SnoSMART project and will draw from that experience to ensure project success. SnoPUD will hire approximately 17 new employees to support the SnoSMART project.

The DAI element will be managed by the DA project manager, John DL Hieb, P.E. John has overseen all development, design, and construction scheduling aspects in preparation for the DAI demonstration project. John has wide-ranging experience in many smart-grid and DER projects in the utility industry over his 15-year career. Additionally, Kimberly Johnston, Director of Government Relations & External Affairs will serve as the interface between the utility and the Department of Energy.

The SCADA/ADMS element of the project will be led by Sheila Crawford. Sheila is leading the SCADA/ADMS team through the RFP process and will continue managing the SCADA/ADMS upgrade project. Sheila has been managing projects for six years at SnoPUD.

The OT workgroup led by Ramona Marino is central to both the DAI and SCADA/ADMS upgrade elements and will require six additional employees to accomplish SnoSMART goals in the accelerated timelines. OT engineering specialists will install, configure, update, and maintain SnoPUD's SCADA and ADMS systems. They will perform point-to-point SCADA testing with field personnel to verify all telemetered devices, including DAI devices, are properly modeled. The OT staff will verify all data coming in from the field is accurate and presented to the grid operators in a convenient and actionable manner.

SnoPUD's team of four distribution protection engineers design the distribution grid's protective schemes and ensure all faults on the grid are isolated for public safety. Each of the area protection engineers are capable of the work required in the SnoSMART project, but an additional hire will be dedicated to the project to meet the accelerated timeframe. The protection engineers will also design wildfire mitigation schemes in our extreme and high-risk areas.

SnoPUD has a team of eight relay technicians with expertise in recloser relays, other field device controls, and substation devices. The relay technicians install settings into the relays, test those relay settings, and test communications with the relay to ensure every device is functioning properly before it is installed in the field. One newly hired relay technician will be dedicated to the project.

SnoPUD's telecommunications team installs, maintains, and troubleshoots our various telecommunications systems including fiber, cellular, and 900 MHz radio systems. One additional technician will be hired to handle the increased workload associated with the accelerated timeline of the DAI project.

SnoPUD has one automation engineer that ensures data measured in the field is reported to our SCADA system. This engineer configures and maintains several systems that gather and convert raw data from the field. One newly hired automation engineer will be dedicated to the project.

SnoPUD distribution system design engineers create work sketches, acquire permits, and manage the construction workflow for each device installation. The design engineers have extensive experience installing these types of devices. There are currently twenty-one (21) SnoPUD design engineers, and one additional engineer will be hired to support the project.

IBEW line crews are qualified and equipped to install all DA devices. IBEW service crews are qualified to inspect, maintain, and operate each of the installed DA devices. SnoPUD expects completion of our AMI network infrastructure project shortly before the DOE grant funding becomes available. The IBEW resources focused on the AMI project will be transitioned to the DAI project. We estimate that one dedicated crew would be required for the duration of the project to ensure timely installation of the DAI devices. SnoPUD anticipates the addition of at least five Line apprenticeships, two assigned to the SnoSMART implementation crews and three assigned to other Line crews to fill vacancies created when the journey level crews are assigned to SnoSMART

SnoPUD has a high-performing, multifaceted IT group that will be heavily involved in the SCADA/ADMS element. Several new jobs will be added to the IT organization to support the software integration, hardware implementation, cyber security, and system architecture needs of the SCADA/ADMS element.

SnoSMART New Hires			
DAI Project		SCADA/ADMS Project	
Count	Job Title	Count	Job Title
1	Senior Project Manager	2	Sr. OT Specialist
1	Distribution Engineer	2	OT Specialist
1	Relay Technician	1	ADMS Engineer
1	Protection Engineer	2	Sr. Application Analyst
1	Telecommunication Technician	1	Information Security Analyst
1	Automation Engineer	1	Project Manager
1	OT Specialist	1	Sr. Infrastructure System Analyst
Totals			
7	New Hires to Support DAI	10	New Hires to Support SCADA/ADMS
17	Total new, good paying, full-time jobs in the local community*		
*Several other workgroups crucial to project success may require additional staff, including Line Crews, Crew Coordinators, and additional Relay Technician, Engineers, etc.			

SnoPUD has Prior Experience That Demonstrates Our Ability to Perform Tasks of Similar Risk and Complexity

SnoPUD has completed numerous projects of similar risk and complexity and ran a pilot project in preparation for a system-wide DAI rollout. The following projects demonstrate SnoPUD's ability to complete the SnoSMART project:

AMI Project - SnoPUD has a project management team dedicated to ensuring successful, timely projects. SnoPUD is in the middle of its $100 million Connect Up project which is replacing every customer meter, reimagining the customer billing systems, upgrading IT support systems, and installing a territory-wide wireless communications system.

Existing SCADA/ADMS system – SnoPUD has had a SCADA/ADMS system for a decade and has the staffing, expertise, and infrastructure required for the installation of a modern SCADA/ADMS system.

Pilot DA System – SnoPUD ran a DA pilot project in the northern part of its service territory. SnoPUD is using both the lessons learned from the DA system pilot and retrofitted pilot project equipment for use in the SnoSMART project.

Smart Grid Investment Grant Project – SnoPUD received federal funds for a $32 million project to:

- Expand our digital telecommunications network
- Expand our substation automation
- Deploy distribution automation for several circuits
- Install and configure a distribution management system
- Pilot distribution automation for several circuits

How SnoPUD Worked Together with its Teaming Partners on Prior Projects or Programs

SnoPUD chose Sensus to be the AMI and DA communication provider in June of 2021. SnoPUD is deploying a communications network throughout our 2,200 square mile service territory ready to support the DAI element with an expected completion by July 2023. As part of our commitment to Sensus as a strategic partner for both AMI and DA, SnoPUD has taken leadership roles in future Sensus products. SnoPUD is working with Sensus and two other large Sensus customers to design the future of real-time communication from the AMI network which will support end of line voltage monitoring required by the VVO use case.

SnoPUD has extensively used Schweitzer Engineering Laboratory (SEL) relays, which are equipped in all our substations and have been standardized in our recloser control panels. SnoPUD has already developed template settings to be used in future installations, expediting the process to create settings for new reclosers.

Additionally, as described in the CBP, SnoPUD will leverage our strong partnerships with IBEW, Tulalip Tribes, the Puget Sound Clean Air Agency, local Departments of Emergency Management, and local governments to maximize SnoSMART project benefits, minimize any potential unintended impacts, and ensure project success across communities in our service territory.

SnoPUD has Adequate Access to Equipment and Facilities Necessary to Accomplish the Effort and How We Intend to Obtain Access to the Necessary Equipment and Facilities

SnoPUD has a $100 million annual capital budget. The SnoSMART project would increase the capital budget by 10 to 15 percent for the five-year construction period. SnoPUD has all the facilities, tools, and equipment required for deployment and the necessary experience with all proposed equipment.

SnoPUD's elected board of commissioners have been briefed on the SnoSMART project concept and were generally supportive of its goals. The SnoSMART project aligns with our long-term strategy and has the support of executive leadership.

SnoPUD has a smart grid test lab that includes all devices that we have in our substations and in the field. We use this test lab to test new devices, settings changes, and firmware updates before they go live in the field. Every type of DAI device will first be tested in this laboratory setting.

SnoPUD has dedicated a pre-deployment area where reclosers, regulators and capacitors are paired with their relays and communication devices. This process ensures the DAI device and its communication systems are working as expected before it is installed in the field. This pre-deployment testing area improves efficiency by cutting down on troubleshooting and changes in the field.

SnoPUD has all tools, line trucks and communications tools needed for installation of field devices and supporting communications equipment.

In conclusion SnoPUD has all the expertise, experience, partnerships, and facilities to successfully complete a project of this scale on time and within budget.

SnoSMART Community Benefits Plan

Snohomish County PUD's Secure Modern Automated and Reliable Technology Project

Snohomish County PUD

Snohomish County Public Utility District (SnoPUD) is the 12th largest public utility in the U.S. and the second largest in Washington state, serving a population of 860,000 people and 25,000 businesses. Our service territory covers 2,200 square miles across Snohomish County and Camano Island. We serve one of the fastest growing counties in the country and our communities have increasingly diverse needs and challenges. We are proud that the electricity we provide to our customers is on average 97% carbon free.

As a public power utility, SnoPUD is governed by a Board of Commissioners composed of three locally elected citizens. We employ over 1,000 staff, many of whom live in our community and are SnoPUD customers. We have deep roots in our community, and we are proud to give our customers an active voice in SnoPUD's policies and services.

SnoPUD has a strong track record of innovating to solve industry challenges alongside the communities we serve. We were among the first in the nation to invest in cutting-edge battery energy storage and renewable energy generation solutions. We have been heralded for our leadership on cybersecurity by federal entities as well as in the private sector, and our world-class microgrid that includes solar, battery storage and vehicle-to-grid technologies that serves as a case study for the industry. As we look to meet the evolving demands of a clean and equitable energy future, we will increasingly turn to innovative technologies and strategic partnerships to accomplish this critical work.

SnoSMART

The Snohomish County PUD's Secure Modern Automated and Reliable Technology (SnoSMART) project is an infrastructure and software project that will revolutionize system visibility and control. The project will allow our grid operators to improve SnoPUD's system reliability and resilience, mitigate wildfire risks, and enable power demand management. SnoSMART will decrease the energy burden for all SnoPUD customers. This $60 million project will deploy hundreds of wireless-connected smart grid devices to our distribution grid and upgrade the software tools needed to operate them. This funding will accelerate the implementation of these advancements by 15 years, allowing SnoPUD to make a truly generational leap forward.

SnoSMART will benefit all SnoPUD customers, but particularly disadvantaged communities (DACs) and tribes in our service territory. Our project will leverage existing partnerships with tribes, regulatory agencies, local governments and labor to enhance community and grid resiliency and support safe, healthy, sustainable, and equitable communities. We are committed to engaging our communities, particularly DACs, to understand and bolster their priorities in alignment with SnoSMART.

1.0 Community and Labor Engagement

SnoPUD has a track record of meaningful engagement and partnership with our local communities and workforce. We work hard to engage customers and employees in decision-

making processes. As we consider energy projects in our service territory, we work with community partners to explore how we can maximize benefits and mitigate negative impacts for our most vulnerable customers.

Labor Engagement

The International Brotherhood of Electrical Workers Local No. 77 (IBEW) represents over half of SnoPUD's workforce including office, services, laborer, and apprenticeable craft positions. This Community Benefits Plan (CBP) expands our existing labor partnership to create more opportunities for workforce development in our communities.

The IBEW and SnoPUD collaboratively engage to develop innovative workforce development programs for employees, organizational initiatives, strategic planning, and operational programing decisions. This is demonstrated through more than 20 active labor-management advisory committees; our use of Interest Based Bargaining for negotiating Collective Bargaining Agreements; and our expansive reskilling and career development programs.

Beyond our efforts to protect and engage our workforce, SnoPUD has a history of engaging the expertise and experience of our IBEW employees in continuous improvement projects, the development of SnoPUD's 2023 – 2027 Strategic Plan, energy resource portfolio planning, and the development of our internal diversity, equity and inclusion initiative.

Labor Engagement on SnoSMART Project

IBEW's support for SnoSMART is reflected in the enclosed letter of endorsement. The substantial investment SnoPUD and the IBEW have made in negotiating our Collective Bargaining Agreements demonstrates maturity and respect between our organizations. The strength of this relationship, as described throughout this plan, provides a solid foundation to explore expanded apprentice opportunities and projects to reduce barriers that women and other underrepresented groups face to accessing high-paying IBEW represented positions.

Labor Engagement on SnoPUD's Diversity, Equity, and Inclusion (DEI) Initiative

SnoPUD began a Diversity, Equity, and Inclusion (DEI) initiative in 2019 with direct engagement of the IBEW leadership and labor-represented employees. A cross-departmental Inclusion Committee, with participants from the IBEW, made recommendations that informed our 2022 DEI work. The Committee continues to champion implementation of the DEI initiative, including specific areas of focus for SnoPUD to foster an inclusive workplace culture where all employees can feel welcome and valued. Those include:

- Identifying and expanding internal career pathways to ensure access for women and other historically underrepresented groups;
- Expanding pay equity analysis and pay transparency;
- Supporting our cross-functional mentorship program development team;
- Training managers to ensure they are fully equipped to support equity and fairness;
- Ensuring DEI data and analytics are identified and reported to the organization.

Labor Engagement on Future Planning

Helping our communities thrive means we must become the utility of the future. Our recently

completed 2023-2027 strategic plan will guide our decisions about how we allocate resources and invest in the infrastructure that the future demands. This strategic plan reflects input from employees across SnoPUD, including IBEW represented employees. Labor expertise was leveraged in drafting the foundational vision, purpose, values and future scenario planning workshops, and the development of initiatives in our five-year plan.

Community Engagement

As a public utility, community engagement is a value that underpins all aspects of our work. We understand that our community and customer partnerships are vital to our mutual success. This is evident in our five-year strategic plan that prioritizes "build[ing] a sustainable future with our communities", "customer-centric" decision making, "expand[ing] our approach to create more and deeper engagement with customers", and "helping our customers and communities achieve their goals".

While SnoSMART is a highly technical project with work that will not have visible benefits to the customer, it will have tangible benefits. SnoSMART implementation will largely consist of software integration and installation of equipment on existing utility poles-- tasks that are traditionally of minimal concern or impact to the public. However, we believe that robust engagement centered on understanding the outcomes of SnoSMART, such as reduced restoration times, wildfire mitigation and system-wide efficiencies, will support areas of prime concern for customers such as local emergency management, community resiliency and climate initiatives.

SnoPUD leadership regularly engages with local elected officials, tribal leaders and community stakeholders. We share information and identify common areas of interest, potential challenges or misalignment and strategize on how best to collaborate on future priorities. Examples of these engagements include formal and informal meetings, participation at local council meetings, stakeholder roundtable discussions and town hall meetings. SnoSMART will leverage and expand upon this engagement with the leadership of our counties, cities, tribes and civic organizations to ensure the needs of our communities are met throughout the life of the project, with specific emphasis on DACs.

SnoPUD knows that when we actively collaborate and engage with our customer-owners, we are better able to meet the needs of our customers and communities. Successful examples of our active engagement to ensure alignment with community priorities include:

- Supporting community-led group purchase initiatives to install ductless heat pumps and solar arrays in targeted communities;
- Distributing materials door to door in multiple languages to engage a diverse community of residents surrounding the future site of our low-income community solar project;
- Facilitating online and in-person public workshops to shape recurring strategic plans such as our Integrated Resource Plan and Clean Energy Implementation Plan;
- Holding monthly virtual "Power Talks" that enable casual discussion between attendees and SnoPUD staff on more technical aspects of the utility business, such as smart meters and rates, or topics of concern such as electric vehicles and installing solar projects; and

- Hosting standing-room-only open houses throughout our service territory to solicit feedback on our first utility-scale community solar project prior to the program launch.

Partnerships
Supporting partners of the SnoSMART project comprised of tribal, regulatory and local government entities are outlined below.

Tulalip Tribes

The Tulalip Tribes is a federally recognized sovereign Indian tribe with a reservation in Snohomish County. The reservation is the largest designated Justice 40 community in the SnoSMART project area and our service territory. In November 2022, a historic storm caused our worst outage event in over a decade. The Tulalip community experienced outages of up to a week, mainly due to extensive tree damage to power lines, posing a particular challenge for vulnerable community members.

SnoSMART will provide the electrical backbone for enhancing the grid and enabling tribal resilience projects. We will work closely with Tulalip representatives to understand and address potential community concerns through early project coordination, planning, and communication.

The concept for SnoSMART is based, in part, on early discussions with the Tulalip Tribes and our shared understanding of their plan to pursue projects that will enhance energy resilience for its members. Tulalip Tribes leadership is working to protect the welfare of its community, particularly those most vulnerable to power outages, extreme weather events, and wildfire smoke such as tribal elders and children. A demonstration of our partnership can be seen in the objectives the Tulalip Tribes identified for their planned Grid Resilience Innovation Partnership (GRIP) direct allocation application for construction of microgrids at critical community facilities. Those resilience objectives include:

- Strive to ensure critical community facilities serving tribal members are protected and not impacted by events such as extreme weather conditions, fire or other natural disaster events causing disruption to normal grid operations. Critical facilities include health care clinic, elder care, gathering hall and administration buildings;
- Address energy burden experienced by low-income tribal members and the Tulalip community as a whole by working to reduce frequent disruptions to electrical service;
- **With SnoPUD, identify priority energy infrastructure modernization upgrades serving the Tulalip community to maximize reliability and resilience; and**
- Increase the skilled workforce within the Tulalip community by assuring that installed resilience measures on tribal facilities can be operated and maintained by tribal members and businesses, where possible.

To build off these shared objectives, SnoPUD and the Tulalip Tribes are partnering on pursuing funding for projects in direct alignment with these resilience goals. In addition to SnoSMART these separate but complimentary projects include:

- A feasibility study to construct microgrids at the Tulalip Administrative Building and Tulalip

Gathering Hall, identified as critical community facilities; and

- Studying the feasibility of pairing long-term energy storage with a planned 5 MW solar installation on a brownfield site.

Partnership Agreements with the Tulalip Tribes: SnoPUD has an active Washington State Department of Commerce Clean Energy Fund grant agreement to study the feasibility of the proposed Tulalip microgrids. We anticipate partnership agreements related to state and federal funding agreements for construction of the microgrids. Furthermore, SnoPUD and the Tulalip Tribes have an existing workforce development agreement that is further described in Section 3.0.

Puget Sound Clean Air Agency (PSCAA)

PSCAA is a special-purpose regional government agency chartered by Washington State law to protect and manage local air quality of King, Kitsap, Pierce, and Snohomish counties. PSCAA is a central point of information for the region on daily air quality levels and recommended actions (e.g. stay inside, limit activity, etc.). PSCAA prioritizes regional efforts to reduce emissions, especially in areas that experience disproportionate impacts from air pollution.

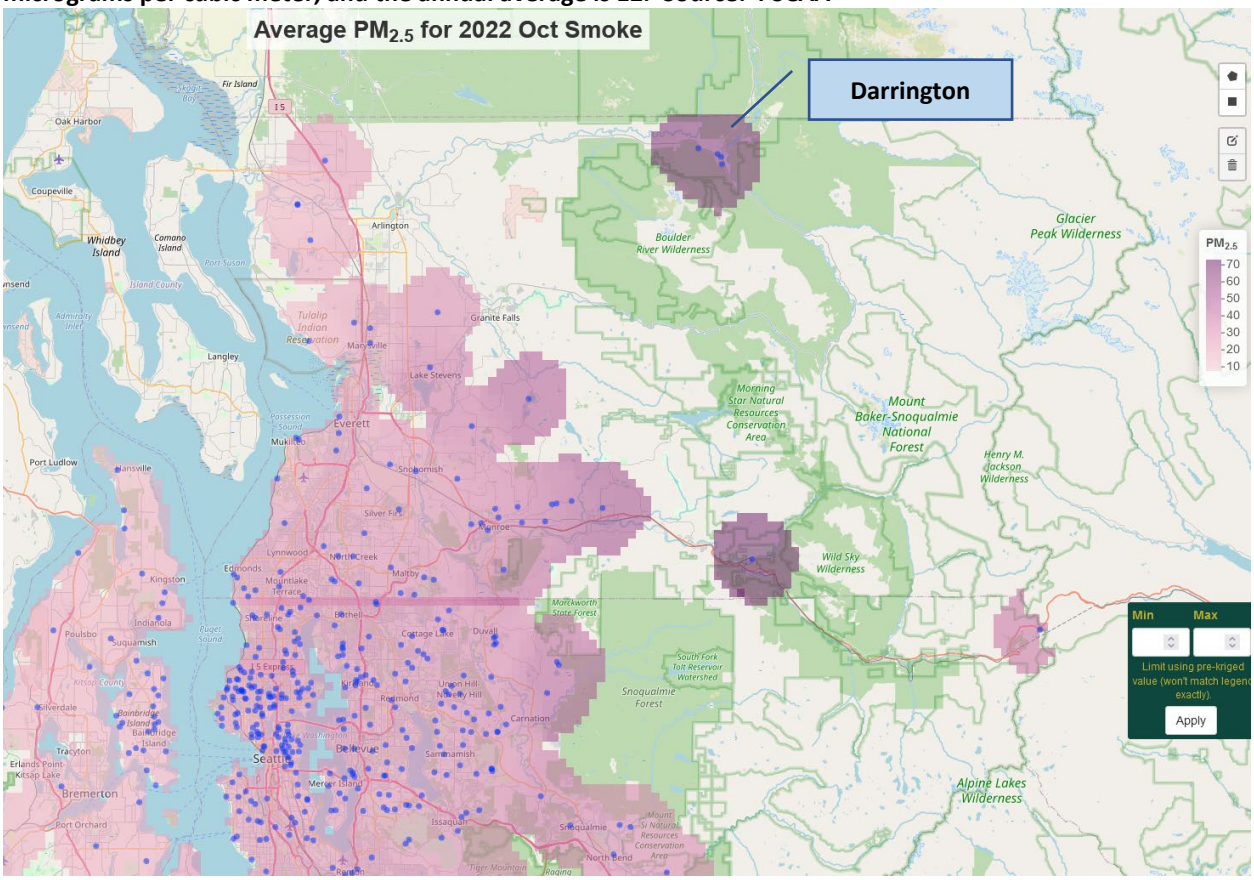
PSCAA emphasizes improving air quality in disadvantaged communities, recognizing that DACs are most heavily burdened by and exposed to environmental pollutants. Primary sources of air pollution in the Puget Sound region are transportation, woodsmoke, and increasingly, wildfire smoke. SnoPUD and PSCAA have many complementary priorities and areas of expertise.

Wildfire smoke events typically coincide with heat waves and are particularly severe for the region's DACs where many residents lack air conditioning and are therefore limited in the degree that they can close their homes and protect their families from smoke infiltration. In the summer of 2022, the Bolt Creek Fire burned for many weeks causing unhealthy levels of smoke in the air for nearly a month in our communities.

PSCAA considers Marysville and Darrington high risk due to their EPA "non-attainment" status driven by their air pollution levels. PSCAA's focus on these communities aligns with SnoSMART; Marysville is a designated DAC and Darrington is designated as "partially disadvantaged" in the Council on Environmental Equity Climate and Economic Justice Screening Tool (CEJST). Darrington is highly susceptible to poor air quality as woodsmoke and wildfire smoke is often trapped in the community due to its unique geography. During the Bolt Creek fire of 2022 Darrington experienced the worst air quality in the world (PSCAA personal communication).

Partnership Agreements with PSCAA: SnoSMART will leverage and expand collaborative SnoPUD and PSCAA efforts. This may include mutually beneficial partnership agreements between our agencies and other community-based organizations that would provide added benefit to smoke mitigation, community resiliency and conservation efforts.

Figure 1. Snohomish and King County smoke levels from October 1-20, 2022. The daily standard is 35 micrograms per cubic meter, and the annual average is 12. Source: PSCAA



Snohomish County Department of Emergency Management (DEM) and City of Marysville Department of Emergency Management

SnoPUD collaborates closely with county and municipal emergency management. This coordination is vital to keeping our communities safe and informed during storm events, major outages, and other emergency situations that can threaten public safety and utility infrastructure. This collaboration was particularly important during the response to the Bolt Creek Fire (2022) when SnoPUD implemented a public safety power shutdown at DEM's request in the eastern part of Snohomish County, which is rural and considered socially vulnerable.

A critical partnership exists between SnoPUD and Snohomish County DEM through collaboration on the County's Emergency Support Function (ESF) system. The SnoPUD Emergency Management Department uses integrated communications to contribute to the County's common operating picture by sharing information related to energy system damage and outage restoration estimates. The SnoSMART project will enhance SnoPUD's continued involvement in the Snohomish County DEM Hazard Mitigation Planning process as well as our continued engagement with the Snohomish County Emergency Management Coordinating Committee.

2.0 Investing in the American Workforce

Plan to attract, train, and retain a skilled and well qualified workforce

SnoPUD consistently demonstrates that we are an employer of choice within our community and our industry. Our approach to negotiations is a highly collaborative and transparent Interest Based Bargaining approach, and our represented pay rates are targeted in the top quartile of our market comparators. Safety of our workforce and our community is our top priority, which is demonstrated by the high engagement of our workforce in driving our safety culture. SnoPUD will continue to use these practices for all projects, including SnoSMART.

Looking to the future, SnoPUD is developing a 10-year talent strategy that includes a plan for employee and leadership development and expanding career paths to retain our workforce. It builds on our highly collaborative workforce development partnership with the IBEW, as described in the above Labor Engagement section. The talent strategy will expand our existing external workforce pipeline activities by increasing our engagement with educational and community-based organizations, including those we partner with on existing community workforce development as further described in the Diversity, Equity, Inclusion and Accessibility section.

National Labor Relations Act, Fair Labor Standards Act, Occupational Safety and Health Act, Service Contract Act, Davis-Bacon Act, or Title VII of the Civil Rights Act Disclosures

No violations to report.

Job retention and/or transition and other workforce development opportunities

We anticipate that the SnoSMART project will create a need for a total of 17 professional, technical, skilled, and apprenticeable crafts, and other positions during the implementation and for maintenance post-implementation. In addition to direct project labor, SnoPUD is evaluating the increased staffing need created by support services directly attributable to SnoSMART such as grant management, compliance, reporting and community engagement functions.

SnoPUD anticipates the addition of at least five Line apprenticeships, two assigned to the SnoSmart implementation crews and three assigned to other Line crews to fill vacancies created when the journey level crews are assigned to SnoSMART. We plan to increase diversity in apprenticeships through the community outreach and partnerships summarized in both the Diversity, Equity Inclusion, and Accessibility and in the Justice 40 Initiative sections.

SnoSMART will require SnoPUD to increase our highly skilled technicians and degreed engineers. To help develop this talent for both SnoSMART and for other prospective projects, SnoPUD participates in a regional energy industry internship program focused on identifying students enrolled in civil, mechanical, and electrical engineering, IT, and other professional degrees essential to designing, building, and maintaining the grid of the future. A core objective of this internship program is to increase applicant diversity.

3.0 Diversity, Equity, Inclusion and Accessibility

Our partnership with IBEW provides a solid foundation as we explore potential solutions to address externally focused (community) workforce development challenges. A pressing shared

priority is expanding the diversity of our apprentices. Of the 50 SnoPUD apprentices indentured since 2017, 12 percent are minorities as defined by our affirmative action program and 8 percent are women. While this level of underrepresentation is common in the utility industry, IBEW and SnoPUD are committed to creating avenues to successfully attract and retain underrepresented talent.

SnoSMART will expand partnerships with community workforce organizations, including:

Tulalip Tribes: SnoPUD will collaborate with the Tulalip Tribes to explore mutually beneficial ways to expand our existing workforce development partnership under our 2009 agreement related to mitigation of impacts associated with the Andrew M. Jackson Hydroelectric Project. We will collaborate with the Tulalip Tribes to co-create opportunities to increase workforce readiness and positive outcomes for the Tulalip Tribes, individual tribal members, SnoPUD, and our communities overall.

Everett Community College (EvCC): We will expand our current workforce partnership with EvCC to better prepare community members for the competitive apprenticeship application process. SnoPUD is working with EVCC to address identified core skills and readiness gap that makes it difficult for unemployed or underemployed community members to advance past our initial screening tests for apprentice and pre-apprentice positions. This expanded program could significantly improve the diversity of those ultimately hired into our apprenticeship positions.

Sno-Isle TECH Skills Center and Regional Apprenticeship Pathways: The Sno-Isle craft / trades pre-apprenticeship program for high school students could be specifically engaged to provide students from diverse populations and economic disadvantaged circumstances with core math and labor skills that allow them to be more competitive when seeking SnoPUD apprenticeship positions.

Additionally, SnoPUD has had initial conversations with IBEW around engaging with local initiatives to support women in the workforce and will further explore these ideas like:

- A pre-apprentice training program specifically for women; and
- A labor-led initiative to develop a local 24x7 childcare facility.

4.0 Justice 40 Initiative

Snohomish PUD shares the Department of Energy's vision for ensuring that benefits from the SnoSMART program will be realized by DACs.

This section details the Justice 40 DACs we anticipate direct and indirect project benefits will flow. It also describes the benefits to these communities and establishes specific metrics to help measure how SnoSMART is helping our most vulnerable customers.

Identification of applicable disadvantaged communities

Using CEJST, SnoPUD identified DACs prioritized under the Justice 40 initiative. There are 17 Justice 40 identified DACs[1] in our service territory plus Tulalip, Stillaguamish, and Sauk-Suiattle

[1] Each census tract marked as a DAC is counted as a separate community in this statement.

tribal areas. The DACs and Tulalip Tribes[2], encompass 23,648 families (10.9% of the families living in our service territory). Within the communities, 25% of families live below 200% of federal poverty level versus 11.8% of families in the remainder of our service territory. Additionally, all DACs in the wider regional airshed will directly benefit from SnoSMART's avoidance of environmental exposure and burden created by wildfire smoke (Figure 1).

Community benefits of SnoSMART and anticipated flow to disadvantaged communities

To describe the direct and indirect benefits of SnoSMART, SnoPUD has broken the project scope into three actions.

Installation of the Distribution Automation Infrastructure (DAI) increases energy resilience

All Justice 40 DACs in the area where DAI is deployed, the four Marysville area DACs, and the Tulalip, Stillaguamish, and Sauk-Suiattle tribes, directly benefit from this SnoSMART action. DAI will reduce outage frequency and duration, improving energy resilience for those customers. This improvement is achieved through remote switching, automatic grid reconfiguration, and improved outage diagnosis capabilities.

An indirect benefit of improved grid resiliency is more positive customer perception of electric system reliability. Increased trust in the grid may encourage customers to electrify appliances, heating, and vehicles. Electrification reduces community reliance on fossil fuels, reduces carbon emissions, and improves air quality.

Associated metrics:

Benefit	Timing	Potential Metric
Energy Resilience	Post DAI system deployment	Impacted customers per outage occurrence
		Outage restoration time
		Duration of sustained outages

Installation of a modern SCADA / ADMS system increases energy resilience and decreases energy burden

All Justice 40 communities in our service territory benefit directly from this SnoSMART action as it will reduce outage frequency and/or duration, increasing energy resilience. This increased resiliency derives from creating the ability for operators to reduce customer voltages remotely and with greater accuracy and efficacy during grid emergencies. Reducing demand through voltage reduction will help keep the grid stable and prevent rolling blackouts.

SnoPUD expects that all customers will experience a decrease in their energy burden due to a more efficiently operated grid. Maximizing operational potential enables SnoPUD to cost-effectively utilize existing investments without costly new steel-in-the-ground infrastructure or power supply resources. Avoiding new capital expenditures helps keep customer rates lower,

[2] Data from American Community Survey (ACS) S1702 - POVERTY STATUS IN THE PAST 12 MONTHS OF FAMILIES for 2021. Data was analyzed by Census Tract. Includes reservation and off-reservation tribal trust areas for the Tulalip Tribes. Data for the Stillaguamish and Sauk-Suiattle tribes was incomplete in the ACS so is not included.

lessening prospective energy burden. Avoiding installation of large new capital projects also lessens potential negative community or environmental impacts from construction.

Finally, our ability to better integrate distributed energy resources will create cost savings for our customers. This integration also realizes geospatial grid benefits through small-scale generation, electric vehicle charging, and demand response programs.

Associated metrics:

Benefit	**Timing**	**Potential Metric**
Energy Resilience	Post SnoSMART installation	System Usage Statistics Use of Demand Voltage Reduction to meet Resource Adequacy Program Requirements
Energy Burden	Post SnoSMART implementation	Demand reduction capability

Configuring the DAI system to remotely enable wildfire system protections decreases environmental exposure and burden

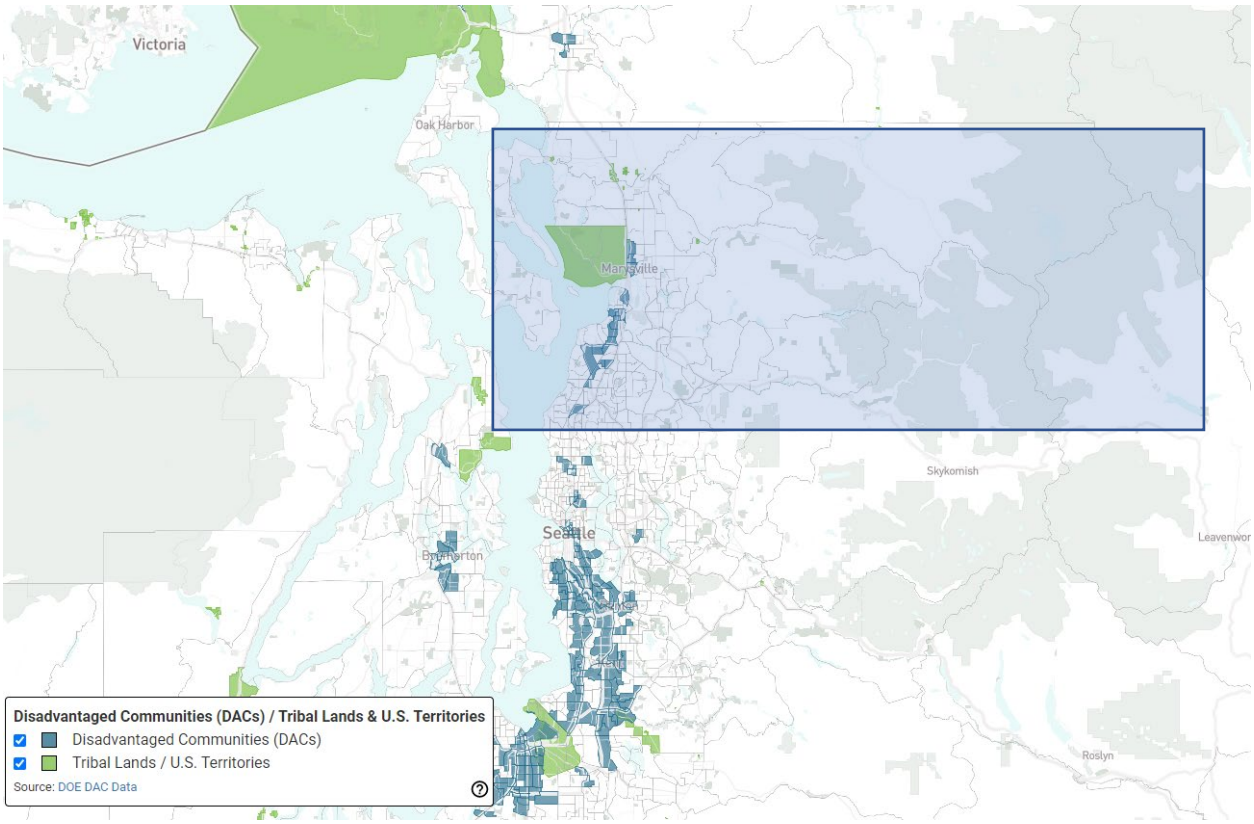
All Justice 40 DACs in the area where DAI is deployed, including the four Marysville area DACs and the Tulalip, Stillaguamish, and Sauk-Suiattle tribes will directly benefit from this SnoSMART action. SnoPUD's ability to remotely reconfigure protection systems that help prevent wildfires will reduce risks to critical energy infrastructure, homes, businesses, and, most importantly, lives.

More broadly, all Justice 40 communities in our service territory and the regional airshed will benefit from this action. Reducing wildfire risk in our service territory directly decreases environmental exposure and burdens for all communities within the reach of a fire and / or smoke. As noted in personal communication by our partner PSCAA, wildfire smoke is an "airshed-wide problem." SnoSMART helps create an airshed-wide solution to potential root causes.

Associated metrics:

Benefit	**Timing**	**Potential Metric**
Environmental Burden	Post wildfire mitigation installation	Number of expulsion fuse operations prevented
		Number of times protection system is activated while in wildfire mode

Figure 2: DACs and Tribal Lands in the regional airshed (shaded area approximately SnoPUD service territory)



Application of Federal Dollars to Justice 40 Benefit Areas

SnoSMART grants will be approximately allocated to two action areas as follows: 60% DAI and Wildfire Mitigation and 40% SCADA / ADMS Software.

The benefits that flow to our Justice 40 communities are facilitated by the investment in SCADA and ADMS software upgrades. Likewise, the air quality impacts of wildfire mitigation will benefit all Justice 40 communities. We anticipate that 20% of our DAI equipment will be installed in geographic areas considered Justice 40. Overall, we anticipate that $15.6M (52%) of the $30M federal grant will contribute to directly benefitting Justice 40 communities.

Other Justice 40 Benefit Areas

When considering the eight benefits identified as priorities for the Justice 40 initiative, we believe that the SnoSMART program will achieve benefits in the following three areas as described above:

- Increase energy resilience including reduced outage frequency and duration;
- Decreasing energy burdens; and
- Decreasing environmental exposure and burdens.

While the other priority benefits are important to SnoPUD, we do not currently anticipate that the SnoSMART program will specifically provide benefits in those categories. We will monitor

our program for unanticipated benefits and have flexibility to amend our Community Engagement Plan in-flight to accommodate new developments.

Anticipated negative and cumulative environmental and community impacts
There are minimal, if any, anticipated negative environmental impacts associated with the infrastructure upgrades. The devices will not affect the overall profile of the poles upon which they are installed, nor do they pose any increased risk to their surroundings.

SnoSMART improves on existing infrastructure, adding devices and software, so associated negative community impacts will be minimal. For field upgrades, disruption to customers in the area is anticipated to be low. We plan to utilize similar notifications and consultations as when we conduct routine maintenance and crew work on our distribution system. If a larger scale disruption is required, such as road closures to ensure the safety of work crews, coordination with the local community will help minimize impact.

We are sensitive to the perception that equipment automation negatively impacts the workforce by reducing jobs. Although SnoSMART will provide system automation, we do not anticipate negative workforce impacts as outage investigation will still require field crews. We will collaborate with the IBEW to ensure no negative crew impacts. This approach builds on our existing agreement with the IBEW regarding reskilling meter readers impacted by our underway deployment of advanced metering infrastructure. SnoPUD has committed to retain all meter readers who want to remain employed at the utility. SnoPUD and the IBEW negotiated an approach that ensures impacted employees have access to new career paths, including apprenticeships and other skilled and professional positions.

5.0 SMART GOALS

Budget Period	Goal	Metric
Period 1	Engage all DACs in work area	# meetings per DAC
Period 2	Execute one partnership or workforce agreement	# executed agreements
Period 3	Incorporate SnoSMART wildfire mitigation and voltage reduction into regional emergency management planning	Planning document
Period 4	Demonstrate reduced energy and environmental burden and increased energy resilience	Refer to Justice 40 Section
Period 5	Demonstrate reduced energy and environmental burden and increased energy resilience	Refer to Justice 40 Section

6.0 Conclusion

Federal investment in the SnoSMART project will contribute to advancing priorities for community and labor engagement; investing in the American workforce; advancing diversity, equity, inclusion, and accessibility; and uphold the Justice 40 Initiative. Snohomish PUD will engage with labor and community stakeholders to co-create, set, and meet meaningful metrics and goals. Targets will be tracked and evaluated throughout the project, implementing the Community Benefit Plan throughout the development, construction, and operational stages of the SnoSMART project to achieve the greatest benefits.

Washington State Congressional Districts covered by Snohomish County PUD 1 are:

WA-001

WA-002

WA-008 - this being the majority of the area

Kimberly Johnston

(b)(6)

2320 California Ave. Everett, WA 98203

GOVERNMENT RELATIONS, COMMUNITY ENGAGEMENT & STRATEGIC PLANNING

Action-oriented leader with 16 years of experience delivering results in high-profile, public-sector roles. Specific expertise in government relations, strategic planning, and community engagement. Deep understanding of the interplay between policy, politics and communications. Adept at identifying opportunities and developing mitigation plans for risks. Practiced crisis manager who thrives creating order out of chaos. Balanced decision maker in high-pressure environments.

PROFESSIONAL EXPERIENCE

DIRECTOR OF GOVERNMENT RELATIONS, EXTERNAL AFFAIRS & STRATEGY

Snohomish County Public Utility District (PUD) *June 2019 – present; Everett, WA*

- Active member of Snohomish County PUD executive leadership team; driving organization-wide policies and priorities.
- Responsible for the PUD's federal, state and local government relations program.
- Policy advisor to the General Manager and PUD Board of Commissioners.
- Oversight of the Snohomish County PUD 2040 strategic planning process.
- Leader of a high-functioning team of 5; management of external consultants; oversight of $1.5 million operating budget.
- Leverage political and policy opportunities for the PUD and develop plans to mitigate risks.
- Represent the PUD to a broad range of decision-makers and partners including community leaders, business leaders, government officials and agencies, tribes, stakeholder groups, and other collaborators in the region and across the country. Educate and build support for the PUD's advocacy and policy priorities.
- Prepare high-level briefings and presentations for the CEO and elected board of commissioners on key community, legislative and regulatory issues.
- Develop key initiatives and manage cross-functional alignment across the organization and strategic engagement with external stakeholders.
- Create and motivate coalitions of stakeholders to work together and achieve common objectives.

CHIEF OF STAFF

U.S. Representative Rick Larsen *2007 – May 2019; Washington, DC*

Policy & Politics

- Served as the chief political and policy advisor to the Congressman.
- Directed long-term legislative plans and approved legislative strategies and tactics.
- Identified political and policy risks; developed well-defined, actionable solutions to the Congressman
- Responsible for political campaigns and strategies that resulted in five re-elections.

Strategic Planning & Communications

- Developed goals in alignment with long-term objectives; implemented work plans to ensure success.
- Approved all communications such as press releases, white papers, guest editorials, and social media
- Conducted crisis management in high-profile, fast paced environment.
- Initiated & executed rapid response campaigns to constituent and stakeholder concerns.
- Led initiatives to communicate accomplishments and policy positions to diverse audiences.

Management & Operations

- Executive management of a high-profile public official.
- Hired, motivated and managed a team of 18 employees that valued diversity of thought, hard work, and service.
- Returned an average of 13.5% annual savings through management of $1.5 million annual operating budget.
- Fostered an office culture that resulted in staff retention well beyond average tenure on Capitol Hill.

EDUCATION

BACHELOR OF ARTS, BUSINESS ADMINISTRATION
WESTERN WASHINGTON UNIVERSITY Bellingham, WA (b)(6)

John D. L. Hieb, P.E.

1802 75th St SW, Everett WA, 98203
(b)(6)

PROFESSIONAL EXPERIENCE

Snohomish County PUD #1 **Everett, WA**
Distribution Management System Engineer *October 2016 to Present*

- Distribution Automation project manager
- Strategic plan core team member developing 20-year strategy as well as 2-year operating plans
- Engineering support for Outage Management and Distribution Management Systems
- Improved power flow modeling to achieve high level of power flow convergence
- Advocated for increased usage of DMS system and configured system to work with Fault Location, Fault Isolation and Service Restoration
- Worked with distribution planning to improve planning processes and wrote automation scripts to increase speed and accuracy of analysis
- Member of cross-functional teams: System Reliability, ConnectUP, DER Planning
- Member of NWPPA E&O conference planning committee and U.S. India collaborative for smart distribution system with storage
- Engineer Review Board – Founding Member

Electric Power Systems, Inc. **Redmond, WA**
Electrical Engineer, Consultant *June 2009 to September 2016*

- Transmission planning for an array of utilities in WECC and small islanded systems
- Performed interconnection requirements studies for renewable energy projects on transmission and distribution circuits
- Wide range of engineering analysis for energy storage projects including initial feasibility studies, sizing analysis, and prospective bid review
- Completed renewable energy impact studies for solar and wind generation including impacts on system regulation reserve and transient stability
- Writing custom relay and energy storage models for use in PSS/E and PSLF

EDUCATION

Bachelor of Science in Electrical Engineering
University of Idaho, Moscow, ID
Graduated: (b)(6)

LEADERSHIP & LICENSURE

Nash Consulting Leadership Training Years 1 & 2
Licensed Professional Engineer – Electrical in Washington, 2015
University of Idaho Varsity Tennis Team 2005 – 2007, 2006 MVP, 2007 Captain

Steven Marquiss

1802 75th St SW., Everett, WA 98203
(b)(6)

Summary

Electrical Technician with more than 16 years experience in the electrical field including over 10 years experience relay testing and substation commissioning and 6 years operation and maintenance of shipboard power plants.

Highlights

- Substation commissioning experience
- Problem-solving and analysis skills
- Experienced with multiple relay test sets and associated software
- Have understanding of various communications protocols used within substations
- Managed various substation and industrial projects while also performing the duties of the relay technician
- Worked in high pressure and high stress environments and situations
- Quick learner with a strong electrical theory background
- Strong background in troubleshooting and maintenance of electrical equipment from 120 VAC up to 500 KV and 48 VDC up to 280 VDC

Accomplishments

Project Management	Worked directly with engineering and substation personnel to complete protection upgrades and testing in a timely manner while avoiding accidental breaker operations.
Supervision	As the Lead Relayman at Snohomish PUD I oversee the maintenance and emergency operations of the Relay Group. We oversee all of the protection and SCADA devices in the substations as well as the distribution system.
Adaptability	While stationed aboard the USS Nebraska I was awarded the Navy Achievement Medal for my role in the repair of critical systems while at sea. Included was a 500KW AC/DC Motor/Generator set that is one of only two on board capable of charging the ship's battery which is critical to restoring the reactor in case of casualties.
Quick Learner	Completed the Navy Nuclear Power School which is widely regarded as one of the toughest engineering schools in the nation. Continuously working on new equipment as protection devices evolve and improve.

Experience

Lead Relayman
September 2018 to Current
Snohomish County PUD — Everett, WA
As the Lead Relayman my job duties encompass those of the Relayman as well as overseeing the rest of the Relay Group, scheduling projects, and ensuring that maintenance is performed within the specified timeframes as determined by our company policy as well as regulatory bodies such as NERC and WECC.

Relayman
April 2011 to September 2018
Snohomish County PUD — Everett, WA
My job duties included performing maintenance and commissioning testing on district relays, RTUs, and associated SCADA equipment as well as performing commissioning and troubleshooting on all substation and distribution equipment.

Wireman
July 2010 to April 2011
Snohomish County PUD - Everett, WA
Performed the duties of a Wiremen including substation protection upgrades, maintaining substation equipment and troubleshooting problems in substation equipment. Additionally I performed construction of new substations and installation of new substation equipment. This includes circuit breakers, transformers and associated equipment from 12 KV up to 230 KV as well as the AC and DC control circuits.

Education

High School Diploma : **General**, (b)(6)
[redacted]

Electrical Theory, (b)(6)
Navy Nuclear Electricians Mate A School – Charleston, SC, USA
This school focused on the basics of Electrical Theory. Additionally it included classes such as Geometry, Binary and Digital Operation, Basic Electrical Theory and Print Reading and Troubleshooting.

Nuclear Reactor Theory, (b)(6)
Navy Nuclear Power School – Charleston, SC, USA
This school focused on the theory behind nuclear fission and included courses such as Trigonometry, Calculus, Dynamics of Heat Transfer and Fluid Flow, and Basic Mechanical Theory for Nuclear Power Plants.

Nuclear Reactor Operation, (b)(6)
Navy Nuclear Prototype – Charleston, SC, USA
This school focused on the operation of a shipboard nuclear power plant and its associated propulsion and electrical system. It is performed on a decommissioned submarine with a functioning nuclear reactor.

Various
Navy Training – Bremerton, WA, USA
While in the Navy I was given the opportunity to attend numerous classes that ranged anywhere from a week to a month. These included classes such as 400HZ motors and generators, Oxygen Generators, Meter Calibration and The Navy Leadership Course.
Omicron CMC Operation – Houston, TX, USA
Attended a class at omicron learning more in depth operation of the CMC 256, CMC 356 and Test Universe.

Affiliations and Skills

NETA Level 2 Certification
IBEW Local 77 member
U.S. Navy Veteran
Hands On Relay School Facilitator
Bilingual (Fluent in English and Spanish)

PAUL KISS

1802 75th St SW, Everett, WA 98203

(b)(6)

OPERATIONS SUPERINTENDENT

Organized and results-oriented professional with 28+ years of experience in the public utility sector offering an advanced comprehension of policy and procedure development, electrical distribution systems, and safety standards.

Leverages wealth of knowledge stemming from journeyman lineman and utility background, conducting root cause analysis to investigate and resolve discrepancies affecting policies and procedures. Continuously organizes and hosts safety meetings and orientations with employees, subcontractors, and other relevant stakeholders to mitigate hazards and other potentially dangerous scenarios by educating all personnel on efficient standard operating procedures.

Currently functions as senior safety specialist for an organization recognized as the safety leader of the state.

CORE SKILLS & COMPETENCIES

- Operations Management
- Policy & Procedure Development
- District & State Compliance
- Electric Utility Proficiency
- Client Relationship Management
- Electrical Distribution Systems
- Interpersonal Communication
- Safety Meetings & Orientations
- Root Cause Analysis (RCA)
- Scheduling & Coordination
- Technical Field Training & Coaching
- Discrete Information Management

Licenses & Memberships: CUSP License (2018) | Journeyman Lineman (IBEW Union #77) | Class A CDL (Exp. 2022)

PROFESSIONAL EXPERIENCE

Operations Superintendent- Snohomish County- Everett, WA **2019-Present**

Responsible for all Operations Line Crews out of the Everett Office

The groups managed are:
- 9 Line Crew
- General Foreman
- Inspectors
- Crew Coordinators
- Serviceman
- Tool Room
- Crew Dispatch
- Major Equipment and Yard operations

Senior Safety Specialist | *Snomish County* | Everett, WA **2018 – 2019**

Notable Contributions:

- ✓ **Functions as senior safety specialist for the leading state utility company servicing upwards of 350K customers annually**, hosting all high-risk safety meetings and orientations to ensure standard operating procedures and compliance regulations are accurately understood by company employees, subcontractors, and other personnel.
- ✓ **Developed on-site safety orientation training for contracted tradesman**, allowing subcontractors to learn important SOP and compliance information ahead of working in an unfamiliar environment to facilitate transition.
- ✓ **Successfully assisted in spearheading the *Regional Near Miss Program* involving all the different utility companies**, leading root cause analysis sessions to analyze and resolve errors pertaining to SOPs. Specifically tailors each SOP plan to ensure each type of utility has a plan based on unique requirements and procedures.

PROFESSIONAL EXPERIENCE (CONTINUED)

Key Responsibilities:

- **Schedules and conducts safety meetings for high-risk groups of tradesman including high-voltage lineman**, providing *PowerPoint* presentations and in-class demonstrations to solidify understanding. Educates trainers on variety of safety procedures who then relay information to site workers via technical field training.
- **Diligently analyzes and adjusts policies and procedures to adhere to electrical compliance standards**, utilizing root cause analysis to accurately assess the problem before implementing resolution.
- **Provides updates regarding policy and procedure changes to relevant personnel during safety meetings** and shares gathered information with other utility companies (as state leader of safety) to provide helpful resources.
- **Organizes and files multitude of documentation** to accurately and efficiently record important information. Works with engineers to regularly release safety bulletins.

Superintendent & Line Crew Foreman | *Pend Oreille County (PUD)* | Pend Oreille County, WA **2014 – 2017**

Key Responsibilities:

- **Led crew throughout daily projects**, confirming equipment functionality and materials deliveries while concurrently delegating tasks to on-site crew members and scheduling subcontractors as necessary.
- **Managed supply chain and maintenance procedures of warehouse and workshop**, scheduling material deliveries and crews weeks in advance to ensure timelines remain accurate despite potential issues including outage calls.
- **Fulfilled and submitted variety of documentation** including job briefings, accident reports, incident reports, and tailboards to provide safety chair and director with thorough summaries of all instances.

ADDITIONAL NOTEWORTHY EXPERIENCE

PEND OREILLE COUNTY (PUD) **2001 – 2018**

Safety Coordinator **(2018)**

Line Crew Foreman **(2005 – 2017)**

EDUCATION & PROFESSIONAL DEVELOPMENT

Lineman Apprenticeship Construction Program | *Dennis Merchant Apprenticeship Program* (b)(6)

Pre-Apprentice Lineman Program | *Northwest Lineman College* (b)(6)

Training & Certifications: Washington State Flaggers Certification (Exp. 2020) | Administration Program for Fall Protection (2019) | First Aid & CPR Training (2019) | Pole Top Rescue Certification (2018) | 30-Hour OSHA Workplace Safety Certificate (2018) | Courageous Safety Leadership Course (2018) | JJ Keller Distracted Driving Training (2017) | NWPPA Foreman Leadership (2014)

Jeanne Harshbarger ~ Manager, System Planning & Protection
Snohomish County PUD
1802 75th St. SW Everett, WA 98203
(b)(6)
(b)(6)

OBJECTIVE:
To lead a team of engineers responsible for the planning and protection of the electric system, delivering safe and reliable service to our customer-owners in a cost-effective manner.

TECHNICAL HIGHLIGHTS:
Experienced electric utility engineer, mostly in the areas of System Protection and Planning.

EXPERIENCE:
January 2012 to present:
Joined Snohomish PUD in January of 2012 as a Principal Engineer with responsibility for transmission protection, NERC PRC standards compliance, and general technical support. In December 2012, responsibilities as Interim Manager of System Planning and Protection were added, and I was selected as Manager of the group in 2013.
Since that time, responsibilities and personnel have been added to the group:

- Distribution Management System (DMS) Engineer - maintains distribution power flow models and designs new DMS functionality
- Automation Engineer – configures devices to provide connectivity to smart devices for Distribution Automation, substations, and generation sites
- Distributed Energy Resource Planning Engineers - develop tools and processes to extend system planning beyond peak analysis in preparation for electrification and electric vehicle adoption

Education:
Bachelor of Science degree in Electrical Engineering with an emphasis in power systems
Master of Science degree in Electrical Engineering with an emphasis in power systems
New Mexico State University, Las Cruces, NM

Certifications:
Member, Institute of Electrical and Electronics Engineers
Registered Professional Engineer in the states of Washington and California

JAE PAK

1802 75th St. SW Everett, WA 98203 | (b)(6)

SOFTWARE SUPPORT ENGINEER

Strategic, analytical, focused and results-driven professional with significant years of experience providing leading edge technology solutions that address aspects such as supporting and implementing software/hardware solutions and LAN / WAN network systems. Experience includes installation, troubleshooting, maintenance, upgrades, and implementations. Established integrity, quality, and professionalism as a leader. Provided clients with a broad array of technical services that improved efficiency of IT and business operations.

CORE COMPETENCIES

- **Excellent strategist**: Provide advanced technology solutions that boost productivity and efficiency across the organization. Quickly identify problem areas and implement effective solutions to meet goals.
- **Exceptional organizational skills**: Consistently recognized by colleagues for exceptional talents in needs analysis and problem resolution.
- **Strong sense of responsibility**: Solid professional standards; excellent track record of dependability. Maintain focus on achieving results while implementing solutions to meet diverse requirements.
- **Customer service**: Consistently demonstrate responsiveness, strong customer focus, and ability to build good customer relationships.

COMPUTER EXPERTISE

- Operating Systems: Microsoft Windows (2008, 2012, 2016 ,2019, 7 and 10), Red Hat Enterprise Linux (5, 6, and 7).
- Software: GE / Alstom ADMS, e-terrahabitat, e-terrapipeline, e-terraarchive, e-terrabrowser, and Display Builder, Microsoft SQL Server, Exchange Server and IIS, Oracle RDBMS, OSI PI.
- Languages: JavaScript, ASP, SQL, VBScript, Cold Fusion, C/C++, C#, Perl, Python.
- Network: Active Directory, DNS, WINS, DHCP, TCP/IP, VPN, SMTP, FTP, HTTP.

PROFESSIONAL EXPERIENCE

Snohomish County PUD, Everett, WA **2020 – Present**

Operational Technologies Engineering Specialist

Provide expertise on aspects of planning, organization, scheduling, and support functions of the Operational Technology (OT) systems (DMS/OMS/SCADA/eDNA). Develop, implement, and improve

technical work processes in the applications of OT systems and cyber security issues as they relate to OT systems.

- Maintain and manage the District's DMS/OMS/SCADA systems and provide support to various organizational groups within the District.
- Review and implement DMS and SCADA model changes.
- Currently involved in District's SCADA upgrade project, tasked with installing, configuring, integrating, and testing the new systems.

GE Grid Solutions, Redmond, WA **2012 – 2020**

Software Support Engineer

Address and resolve technical issues relating to software implementation, function, and upgrades of GE (Alstom) e-terra software deployed by customers as real-time telemetry and control systems. Advocate for customer interests in the product quality management process and serve as a liaison between customers and the product development team. Participate in special projects as needed.

- Provided continuous product and system support to GE Grid Solutions external customers and to internal GE product development and delivery teams.
- Successfully completed an upgrade project of customer's production Energy Management System (EMS).
- Built numerous virtual machines (Windows & Linux) to be used internally for troubleshooting and testing.
- Participated in testing of e-terrapipeline software and fixing display defects.

EDUCATION AND PROFESSIONAL DEVELOPMENT

Bachelor of Science (BS) in Chemical Engineering, University of Washington, Seattle, WA

Arizona State Board of Technical Registration Professional Engineer (PE #49553)

Project Management Institute Project Management Professional (PMP)

Ramona M. Marino

(b)(6)
1802 75st St. Everett, WA 98203

KEY QUALIFICATIONS

- Over 30 years experience in energy management systems and process control systems engineering
- Technical lead in Operational Technologies Engineering department
- Mentor and educate co-workers with positive encouragement and team inclusion
- Expertise in Alstom/GE EMS/DMS/OMS real-time systems including configuration, testing, and debugging
- Attentive to detail with focus on process design, implementation, and documentation
- Software development, programming, and configuration of real-time applications
- Development of processes and documentation to support NERC standards for CIP and TOP compliance
- Participation in the RC transition from Peak RC to CAISO/RC West including acting as the UAA
- Provide documentation and training to support end-users of SCADA/DMS/OMS/eDNA applications
- Strong desire to contribute and participate in continuous improvement processes and initiatives
- Excellent interpersonal working relationships with internal and external colleagues, vendors, and users

PROFESSIONAL EXPERIENCE

Snohomish County PUD No. 1, Everett Washington

Manager, Operational Technologies Engineering (2020 - present)

- Managing the planning, design, organization, scheduling, coordination and implementation of electric system operational technologies engineering for Supervisory Control and Data Acquisition (SCADA), Advanced Distribution Management System (ADMS), IT operational applications and other Operational Technologies (OT).

Senior Operational Technologies Specialist (1996-2020)

- Technical lead in Operational Technologies department for SCADA/DMS/OMS/ICCP and eDNA systems
- Lead Alstom/GE SCADA/DMS/OMS upgrade and implementation activities including new system installation
- Educate co-workers on system configuration, real time troubleshooting and functionality of SCADA/DMS/OMS/ICCP and eDNA systems.
- Extensive system configuration experience on real time operational systems.
- Implement SCADA modifications including database installs and display modifications to support substation system reliability upgrades.
- Point to point testing for SCADA system reliability upgrades with field personnel, relay technicians, telecom technicians, and system operators.
- Collaborative work with other departments on continuous improvement processes and implementation.
- Worked with System Planning and Protection engineers on Distribution Automation implementation including SCADA modeling and device testing.
- Understanding of Distribution Management System applications to effectively contribute to modeling improvements and problem resolution
- Expertise in SCADA, DMS and OMS modeling to support functionality required by Snohomish PUD
- Integrated testing of the OMS application with IT applications including failovers and performance testing
- Knowledgeable in Telegyr 8979 and DNP3 protocols and RTU communications

- Excellent troubleshooting skills
- Participate as a SME for NERC compliance with CIP and TOP standards
- Participation on CI teams and projects including the ConnectUp project
- 24x7 on-call support for real-time SCADA/DMS/OMS/ICCP and eDNA systems
- Progressed from Lead Programmer/Analyst position to Electric Systems Automation Consultant to Senior EMS/SCADA Engineer to Senior Operational Technologies Specialist while working at Snohomish PUD

EDUCATION

- Bachelor of Science in Combined Sciences, Santa Clara University, Santa Clara, California
- Computer Science and Programming, DeAnza College, Cupertino, California
- Continued Education in Computer Science and Software Engineering

RELATED SKILLS AND TRAINING

- Nash Leadership Training
- Continuous Improvement training
- Microsoft Office product suite applications
- Programming languages: Fortran, C, C++, Power Shell, Perl

Mark Flurry

(b)(6)

1802 75th Street SW
Everett, WA 98203

EDUCATION

UNIVERSITY OF ILLINOIS Urbana-Champaign, IL B.S. Civil Engineering

PROFESSIONAL EXPERIENCE

SNOHOMISH COUNTY PUD No. 1 – Senior Manager, Transmission and Distribution, System Operations and Engineering

April 2021 – Present

Directs the Transmission and Distribution System Operations departments to accomplish the District's established goals and objectives in alignment with District's Strategic Priorities. Provides senior leadership to the Energy Control Center (ECC), Operations Technologies Engineering, Transmission and Standards Engineering, Joint Use, Plat Engineering, Distribution Engineering, Real Estates Services, System Planning and Protection, GIS/Maps and Records departments. Develops overall departmental plan, goals, and objectives. Ensures District's transmission system and distribution systems are operated in a safe and efficient manner in accordance with regional entities and NERC, FERC, WECC criteria for the transmission system and, applying Best Utility Operation practices for all electric system voltages. Ensures the safe, reliable and efficient operation of the District's interconnected systems. Coordinates transmission and distribution systems operations and load optimization with other entities as required. Directs the department's compliance with Federal, State, and local statutes and regulations related to electrical services, safety, and the District's standards and procedures. Provides overall leadership and management of storm and/or emergency restoration activities. Oversees management of system technologies including EMS, DMS, OMS and SCADA.

SNOHOMISH COUNTY PUD No. 1 – AMI (Connect Up) Program Director

November 2019 – April 2021

Provide leadership of Connect Up program teams. Works closely with Sponsor and Sponsor Committee to establish strategic goals/objectives/approach and ensures these are carried out by the Program Manager and teams. Works in parallel with the Program Manager to strategize program approach and logistics. Provide executive level vendor management. Collaborate across workgroups, acting as program ambassador, maintaining alignment with District programs and Strategic Priorities.

SNOHOMISH COUNTY PUD No. 1 – Manager, Distribution Engineering Services

November 2018 – November 2019

Provide leadership on all aspects of the planning, organization and scheduling for power distribution engineering, distribution system expansion and improvements, cable/pole asset management programs,

distribution facilities relocation, new and enlarged electrical services, construction and maintenance support functions consistent with the District's mission, goals and values. Develop, negotiate, and administer professional service and public works contracts. Develop, implement, improve work management processes to cost effectively meet District customer needs.

SNOHOMISH COUNTY PUD No. 1 – Principal Engineer and Special Project Manager

April 2011 – November 2018

Oversee and provide project level and strategic direction in the planning, design, permitting, construction, commissioning, environmental management, and operations and maintenance of new and existing facilities, generation and water resource projects.

David Popach

(b)(6)
1802 75th Street SW
Everett, WA 98203

Education:

B.S. Electrical Engineering, University of Washington | Seattle, WA (b)(6)
Everett Community College | Everett, WA (b)(6)

Experience:

Snohomish County PUD – Engineer – System Planning & Protection – Everett, WA **March 2022 – Present**

- Analyze protection system performance under normal and contingency switching scenarios, verify recommended switching sequences for offloading substations and circuits, and apply protective devices to optimize protection.
- Provide settings for distribution substation relays, line protective devices, voltage regulators, substation load tap changers, and various other equipment.
- Collaborate with planning partner for the area to optimize operation and performance of assigned geographic area.
- Perform system impact studies for Generation interconnections.
- Design special SEL relay logic for a customer recloser.
- Develop operating notes and procedures for PUD operators and line crews for equipment and/or unique customers.

Snohomish County PUD – Design Engineer – Facilities – Everett, WA **July 2019 – March 2022**

- Develop electrical and lighting designs using NEC, NFPA, and other code requirements.
- Verify and review PUD facility electrical one lines for various projects to ensure safety.
- Review consultant designs, specifications, and submittals.
- Perform cost estimates, long term analysis, and interruption of power for various Facility projects.
- Communicate and coordinate with various internal departments to take power outages.

Snohomish County PUD – Student Engineer – Distribution – Everett, WA **June 2018 – April 2019**

- Design electrical power distribution systems in overhead and underground facilities.
- Design cable routes and develop physical layouts including height, spacing and location parameters.
- Use load information to size cable & transformer.
- Work with system planning & protection to balance circuit loading.
- Acquire permits from multiple municipalities and abide by their requirements.
- Use computer aided design programs to model and test overhead distribution systems.

Projects:

Direct Transfer Trip (TT) Project: Developed a Transfer Trip scheme for a customer's generator and the SnoPUD system to clear faults on the line. This involved developing special trip logic and settings, making settings for mirrored bit communication to the generator breaker, settings for the SCADA control and indications of the Relay sending the TT, testing the logic both on site and in the test lab, and monitoring the live and in-service device.

System Reliability Report & Presentation: Gathered and analyzed data of the systems SAIDI, CAIDI, and SAIFI to develop PUD's annual system reliability report. Analyzed data to determine causes of outages, areas where improvement is needed, and patterns or outliers in data. Suggested improvements in operations and/or projects that can be done to improve system, substation, and circuit reliability.

Operating Notes: Developed standard operating procedures between the PUD and customers, including instructions for operating the device(s), performing maintenance, information and instructions on controls and indications of the device, and capabilities of the device.

Skills:

Aspen OneLiner, Synergi Electric, AcSELerator, Auto-CAD, PyCharm, MicroStation, Bluebeam, Engineer in Training (EIT), SEL ePROT 200

Philip Prentiss

2320 California Ave Everett, WA 98201

(b)(6)

Profile

Philip is a Senior Data & Analytics Architect, Engineer, and Developer with over 30 years of Electric, Water, and Gas Utility experience including two decades as an IT professional and a decade as Electrical Distribution Engineer. He has architected and implemented highly performant, secure, and scalable analytics solutions using on-premise and cloud platforms. With strong technical and functional skills, he is a future-focused leader who has a foot firmly planted in both the IT and business worlds and understands the imperatives driving both.

Education

University of Washington

B.S. Electrical Engineering (b)(6) Cum Laude – Power Systems and Computer Science emphasis

Summary of Experience and Qualifications

17 years of data architecture, engineering and development experience gained by designing and delivering analytics solutions for all business process areas within the utility industry:

- Design and build of analytics and operational data stores on multiple platforms including Amazon Web Service (AWS), Power BI Service, KNIME, SQL Server, and SAP Business Warehouse.
- Completed multiple project lifecycles, working all phases and roles including Project Manager, Technical Lead, Developer, and Trainer.
- Extensive expertise in logical & physical data modeling, source system extraction, .
- Mentor and go-to person skilled in breaking down and communicating complex problems/concepts.

7 years as an SAP ABAP Developer and Functional Analyst:

- Self taught in order to enhance SAP PM module.
- Became lead of programming group and technical lead on SAP system upgrades.
- Established standards and re-use libraries for internal team and contractors.
- Configuration of orders, notifications, functional locations, equipment, and maintenance plans.

9 years as a Distribution Engineer and Project Manager:

- Led and coordinated teams of engineers and linemen through all phases of electric distribution system construction of large residential plats, commercial developments, and industrial parks.
- Performed engineering and customer service activities for new and modified services. Performed system load and reliability studies. Developed PC based tools for automating engineering calculations, designs and forms.

Snohomish County Public Utility District #1 - Everett,WA (2014 - Present)

- Data & Analytics - Data Architect (2020– Present)
- Analytics and Info Mngmt - Sr Data Strategy & Analytics Consultant (2017 – 2020)
- Information and Technology Services - Sr Application Analyst (2014 - 2017)

Puget Sound Energy - Bellevue, WA (1990 - 2014)

- Business Intelligence Project Manager / Team Lead (2006 – 2014)
- SAP ABAP Team Lead (2002 – 2006)
- SAP Functional Analyst (1999 – 2002)
- Regional Project Manager/Lead (1996 – 1999)
- Distribution Engineer (1990 – 1996)

PAIGE OLSON
1802 75th Street SW
(b)(6)
[redacted]
[redacted]

PROFESSIONAL EXPERIENCE

P.U.D. No.1 of Snohomish County, 2320 California Avenue, Everett WA 98201

Superintendent - Energy Control Center, 02/18 - Present
Manage the planning, scheduling, coordination and Implementation of all aspects of the Energy Control Center and the District's transmission and distribution systems; ensuring all operations meet NERC and WECC reliability standards. Maintain working knowledge of technological developments Impacting electric system operations, monitoring and control. Recommend and implement new methods to ensure effective and efficient operations. Lead District restoration efforts In power outages, failures and disasters. Assist to Identify sources of outages, improve reliability and recommend transmission and distribution enhancements and modifications.

Project Manager - Safety, 06/17 – 02/18
Manage the District's Safety Audit List to correct safety concerns and facility code issues, ensure the highest level of employee safety and provide awareness of potential safety issues. Development of a comprehensive Fall Protection Program specific by department. Implementation of Flammable and Combustible storage guidelines and SAP report enhancements. Code reviews and compliance administration. Member of Near Miss Reporting Team to encourage employees to learn from and openly discuss safety learning opportunities. Continuous improvement enhancements to include tailboard content and utilization, accident report enhancement and streamline of new employee safety onboarding process. Storm Mutual Aid/Contract Crew support.

Business Operations Analyst, 09/16 – 06/17
Provide business process direction, language review and implementation for Energy Efficiency (EE) non-Directive 70 contracts & amendments. Process EE Incentive payments in SAP. Maintain current contract and budget reports for Customer & Energy Services (CES) Leadership Team. Assist with CES requests and compliance for contract information, legal review and systems assistance. Identify areas for process and procedure improvements. Coordinate year-end accounting accruals and assist with budget process for Department.

KVA Electric, Inc, 13933 Jim Creek Road, Arlington WA 98223

Vice President and Business Operations Manager 02/04 – 08/16. Integral business partner in the development and growth of KVA Electric, Inc. from a start-up into a successful and unique service provider for electric utility substation maintenance and repair, working with Pacific Northwest utilities, government agencies, industrial customers, contractors, equipment manufacturers and the U.S. Department of State servicing U.S. Embassies worldwide.

Management of all facets of the corporation and personnel to include IBEW Union Labor, Project Managers and Administrative staff; Contract & Project Management; Coordination of Project Scheduling; RFP Administration and Submittals; Quality Assurance; Safety Training and Equipment Certification oversight; Development and Administration of KVA Electric's IBEW Local 77, 483 and 659 Substation Technician (Wireman) Collective Bargaining Agreements and KVA Electric's Registered Substation Technician Apprenticeship Program; Customer Service and Communications; Financial Management and Analysis; Employee Resources; Records Management; Develop & Implement business practices, processes and procedures; U.S. Department of State Personal & Facility Security Clearance Administration of Classified Information and Safeguarding.

EDUCATIONAL BACKGROUND

Associate of Technical Arts Degree in Accounting obtained (b)(6) at Everett Community College, Everett, Washington.

Associate of Technical Arts Degree in Business Administration obtained (b)(6) at Everett Community College, Everett, Washington.

Colleen M. Murphy

Manager, Environmental Affairs, Snohomish County PUD

(b)(6), Everett, WA 98206 | (b)(6)

EDUCATION

BACHELOR OF SCIENCE | (b)(6) | EASTERN WASHINGTON UNIVERSITY

- Major: Chemistry
- Minor: Mathematics

TRAINING AND CERTIFICATIONS

- UW Department of Environmental and Occupational Health Sciences, Full Range Leadership for Advancing Health and Safety, Feb. 2022
- Certified Erosion and Sediment Control Lead, 2012-2021
- Hazardous Waste Operations and Emergency Response, 2007-2022
- Environmental Management System Lead Auditor, 2008

EXPERIENCE

MANAGER, ENVIRONMENTAL AFFAIRS | SNOHOMISH COUNTY PUD | MAR 2022 - PRESENT

- Promotes District Vision, Values and Strategic Objectives to Environmental Affairs Team. Engages EA Team in incorporating District Objectives into Team processes and programs.
- Maintains a current knowledge of federal, state and local legislation and regulations (existing and proposed) relating to environmental issues affecting the District. Maintains formal and informal communication links with other groups and agencies associated with environmental issues. Develops and recommends District policy positions on environmental issues and legislation affecting the District. Represents District positions on environmental issues before governmental agencies, the private sector, the public and at legislative hearings.
- Manages the development, implementation and administration of programs and policies for complying with local, state and federal laws and regulations regarding the safe handling, storage and disposal of hazardous and contaminated wastes and chemicals; stormwater, groundwater and wastewater management; and emergency preparedness and response plans.
- Manages and evaluates the performance of assigned staff including providing coaching, positive recognition and discipline when appropriate. Identifies opportunities for employee development and training as appropriate. Mentors EA Team in gaining proficiency in District processes and individual areas of environmental practice as they relate to District operations. Ensures staff understands and complies with District Directives, safety rules and other related policies and procedures.
- Establishes performance expectations, work priorities, staff assignments and administrative procedures. Partners with other District departments to ensure coordinated work efforts.
- Conducts interviews and makes staff selections to meet the District's strategic plans and critical goals.

SENIOR ENVIRONMENTAL SPECIALIST | SNOHOMISH COUNTY PUD | JUNE 2018 – MARCH 2022

- Assists the District in complying with federal, state, and local environmental laws and regulations. Provides technical assistance to the District regarding hazardous waste cleanup; workplace environmental health and personal protective measures; waste material management; recycling and disposal; environmental program compliance and recordkeeping; storm water

management and work in or near wetlands and sensitive areas. Serves as a project leader and implements District policies, programs and procedures for chemical product environmental health evaluations, hazardous materials identification and management, spill response and remediation, pollution prevention program management, and regulatory reporting and recordkeeping. Represents the District while working with other governmental entities and the public on environmental matters.

- Assists the District in obtaining permits or approvals and complying with regulatory requirements as necessary.
- Serves as a technical resource for the District regarding workplace environmental health regulatory compliance, worker exposure matters, and hazardous substances and products use. Evaluates products for occupational exposures and disposal requirements and, when appropriate, identifies less hazardous product substitutions for various applications.
- Prepares technical specifications and scope of work for consultants and contractors, assists with consultant/contractor selection, and acts as a lead contract specialist for the Environmental Affairs Department. Acts as project leader and contract administrator for department projects, including but not limited to hazardous waste management and analytical laboratory services.
- Monitors, analyzes, and interprets new and proposed environmental laws and regulations, and incorporates changes into District activities, programs and procedures.
- Manages or assists contractors in the management of hazardous, universal, PCB and other special waste. Designates, profiles and manifests wastes for lawful shipment and disposal.
- Performs internal inspections of waste management and other regulated operations.
- Creates, organizes and maintains records, reports, and other environmental documents required by applicable law and regulation, within areas of responsibility.

RISK MANAGEMENT ANALYST - ENVIRONMENTAL | COMMUNITY TRANSIT | FEBRUARY 2002 - JUNE 2018

- Research environmental regulatory programs for local, state and federal requirements, manage environmental programs for stormwater, wastewater, underground storage tanks, hazardous waste and air, represent Community Transit when interfacing with regulatory agencies, consultants and contractors, prepare or review applications for environmental permits, assist project management to ensure project compliance with environmental programs and policies, advise management on approaches to program implementation conduct facility and site inspections, prepare and submit monitoring and compliance reports, oversee operation and maintenance of pollution controls and pretreatment systems and analyze system information to identify opportunity for improvement.
- Oversaw operation and maintenance of pollution controls and pretreatment systems. Reviewed equipment, technology and monitoring reports to identify operating trends and recommended appropriate upgrades for control systems and monitoring systems.
- Led cross-functional teams to develop and implement an Environmental Management System. Identifies process improvement opportunities and analyzed them for efficiency (waste, complexity, cost), effectiveness (achieves desired outcome), and quality. Set goals and objectives that were outcome based. Developed plans and procedures in support of the Environmental Policy to establish agency-wide operating standards.
- Project manager for projects and programs involving compliance related activities for environmental programs, planned environmental improvement projects and emergent remedial projects. Managed consultants; established goals, standards and objectives; oversaw and evaluated consultant's work; ensured compliance with Agency priorities; implemented strategies; and managed timelines and budget. Advised management on approaches to program implementation.

N i c h o l a s A . J o h n s t o n

1802 75th St. SW Everett, WA 98203
(b)(6)

E d u c a t i o n

Western Washington University
Bachelor of Science in Manufacturing Engineering Technology (b)(6)
Bellingham, WA

P r o f e s s i o n a l E x p e r i e n c e

Snohomish County PUD
Telecommunications Manager March 2021- Present
Everett, WA

Manages the planning, design, development, engineering, installation and maintenance of the District's telecommunications data transport and land mobile radio system. Leads a team of 5 engineers and 9 technicians with an annual combined operations, maintenance, and capital budget of $9.7M. Maintains communication tower and fiber leases and FCC radio licenses. Responsible for the telecommunication specific safety processes and procedures including WAC 296-32 compliance. Currently overseeing the replacement of the land mobile radio system and substation data transport network.

- Expanded the department by 27% in the first 2 years to support the advanced meter infrastructure (AMI) and distribution automation (DA) network deployments.
- Secured executive leadership support to increase the department's capital budget for the accelerated replacement of critical telecommunication infrastructure.

Snohomish County PUD
Telecommunications Engineer 3 July 2016- Feb. 2021
Everett, WA

Responsible for the District's 300+ mile outside plant fiber optic network including maintaining a 5-year capital expenditure plan, designing robust and redundant fiber paths to existing district facilities, designing extensions to new facilities, and advising standards on all compatible units involving fiber. Performed system architecture and circuit analysis to optimize the District's usage of the existing network. Worked with internal customers to identify current and future communication requirements to ensure the network met the needs of the users. Designed and managed the construction of the District's advanced meter infrastructure (AMI) test lab.

- Designed and project managed a 17.5 mile fiber build to provide diversity to 3 of the district's generation facilities including Jackson Powerhouse.
- Led the department on a project to identify key requirements for the district's next generation transport network.

Frontier Communications

Network Engineer – Interoffice Facility Planner June.2015 –June 2016
Everett, WA

Developed long term capital expenditure plans for interoffice facility including ROADM, CWDM, dark fiber, MPLS Ethernet, and copper facilities. Plan and engineer broad-gauge solutions to MPLS orders for 20 Mbps to 10 Gbps circuits. Develop new processes, procedures, and tools to streamline day-to-day engineering and planning procedures.

- Designed a 10 Gig redundant MPLS backhaul ring for next gen broadband network and MPLS services using existing switches and ROADM equipment.
- Collaborated with a team of testers, developers, and subject matter experts on the conversion of 3 Verizon owned properties to Frontier systems and procedures.

Bonneville Power Administration (David Evans & Associates)

Electronics Engineer Mar. 2013 – May.2015
Snohomish, WA

Led a team of engineers and CAD technicians to audit telecommunication equipment in Northwest Washington. Implemented and supported a new documentation and drawing management system. Troubleshot Supervisory Control and Data Accusation (SCADA) issues and provided design feedback to the district and central engineering teams. Trained field engineering and technical staff on new documentation technologies and practices.

- Developed Visual Basic scripts and tools to automate common tasks including renaming large quantities of pictures and checking documentation continuity between IDF blocks.
- Created multiple batch scripts to automate the process of creating and formatting various Microsoft Excel sheets.

Frontier Communications

Network Engineer – Network Administrator / Apr. 2010 –Feb. 2013
Broadband Backbone Planner
Everett, WA

Led a team of developers responsible for the design, implementation, and maintenance of multiple internally facing work order tracking, and network management applications supporting engineers, construction supervisors, and operation specialists. Performed cost benefit analysis of proposed work and presented findings to upper management. Created training documentation and conducted all training courses for supported applications. Met directly with end users to analyze existing application performance and identify potential improvement. Maintained a network of multiple physical and virtual servers.

- Created a full featured work order tracking, scheduling, and document retention application currently used for all engineering work orders in the West region.
- Performed complex migrations of multiple applications to MySQL databases with custom ColdFusion front ends.

SHEILA CRAWFORD

2320 California Ave Everett, WA 98201 ♦ (b)(6) [redacted]

EDUCATION, CREDENTIALS, & TRAINING SUMMARY

- **MBA,** Business & Information System Technology**,** Capella University, St. Paul, MN
- **MBA,** Business & Finance**,** Portland State University, Portland, OR
- **BS,** Southern Oregon University, Ashland, OR
- **MPM,** Master Project Manager, Project Management Institute (PMI)
- **PROCSCI,** Change Management, Project Management Institute (PMI)
- **ITIL Certificate,** ITIL Foundation Training, Everett, WA
- **SCRUM Master Certification,** Mountain Goat Software, Everett WA
- **Technical Systems:** Office, Word, Excel, Presentations, Office 365, MS Project, Teams, Visio, SharePoint, Outlook, and Oracle.

Training:

- Advanced SAP Financial & Reporting, Continual Improvement – Snohomish PUD
- Communicating Across Cultures, DIG Records 101, Preventing Harassment & Discrimination
- Information Security Essentials & Email Security, Management of Aggressive Behavior
- Leadership Development Program, YR 1 & YR2, Safestart Units 1 - 5
- Cybersecurity Personally Identifiable Information Fundamentals
- HIPAA
- Managing Bias
- Information Security Essentials

PROFESSIONAL EXPERIENCE

Snohomish PUD District No. 1 - Everett, WA 98201
Senior Project Manager, 7/10/17 – Present

- Project Manager for the Advanced Distribution Management Systems (ADMS) and Supervisory Control & Data Acquisition (SCADA) Replacement Project aimed at replacing fragmented with systems with an ADMS platform system that is fully integrated with SCADA, Outage Management System (OMS) and Distribution System (DMS) and Transmission.
- Project managed SCADA upgrade. Led a complex coordinated effort with the Operational Technology Network Upgrade of SCADA servers, console kits, switches, storage, CIP compliance readiness; Telecommunications new data center; and Generation Upgrade of new servers.
- Project managed: Scheduling & Dispatch replacement with Cloud platform to replace end of live software.
- Project managed: Oracle 19C Database upgrade a complex project involving many systems and integrations including GIS, BizTalk, ADMS Swat Map interface with SAP.
- Instrumental in the development and launch of a cross functional ITS Project Governance Board that reviewed, evaluated, and prioritized strategic IT projects because of project backlog and a newly issued strategic directive. Board was effective at prioritization and approving projects reducing the backlog.
- Project managed a strategic, complex project to enhance unified customer experience through a customer self-service web-portal that enabled customers access to essential services and payment options.

  - Adopted the Agile project methodology during the last year of project to re-focus project team members on activities that enabled the project to meet it's go-live date, establish the portal and set the foundation for additional functionality as planned.
- Successfully project managed: Schedule 90, Leave I433 Initiative Project, Governance Board Project, Electronic Bill Payment & Processing (EBPP), Customer Self-Service (CSS), Electronic Payment Processing, Email Management Technical. Projects in-flight: SCADA Upgrade 3.3, Oracle 19c Upgrade, Business Partnership Workspaces, and Success Factors Integration to SAP CPI.

Eugene Water & Electric Board Eugene, OR 97402
Senior Financial Analyst, 12/2015 – 7/9/17

- Provide expertise, analysis, and options in long term financial planning, rates, load and revenue forecasts, and other related financial areas. Developed ROI or cost benefit analysis for large projects using business value for IT methodology (risk, benefit, origination costs, ongoing costs & payback) tool adopted by Governance committee to select and fund projects.
- Managed capital planning system project that resulted in a model and forecasting system for capital projects, costs, resources, vendors, and contractor expense that fed into the enterprise work and asset management system. Project addressed audit findings regarding asset capitalization and work-order management while improving the supply chain effectiveness.
- Led cross functional teams comprised of business and technology employees to identify time intense business processes and fragmented business systems that would benefit from technical solutions. Effort resulted in elimination of redundant and fragmentation work processes for targeted departments. Cost savings was estimated at over $200K.
- Used continuous improvement methodologies to identify and get approval for short-term, cross-functional projects that addressed inefficiencies and system performance in the supply chain and inventory processes. Instrumental in eliminating waste in inventory and improving outdated business processes in the supply chain.

Principle Project Manager, 01/2011 – 12/2015

- Program Manager for the implementation and oversight of a $10M enterprise-wide system that included work and asset management, budget, chart of accounts, supply chain, inventory, work orders and mobile work management. Project came in on time and within budget.
  - Supervised a staff of nine PM's and three support staff. Managed 15 cross functional teams and s five vendor PMs.
  - Recruited and selected program management employees.
  - Developed team members into solution experts across functional lines of business.
  - Evaluated employee performance, development, coaching, and discipline.
- Communicated and coordinated with other organization departments to ensure a high standard of service delivery, adherence to service level agreements (SLA's), and performance expectations.
- Successfully resolved several audit and fraud findings from past events that were discovered through the course of the implementation by including system enhancements that identified and provided alerts for similar type of events.
- Deployed the ADKAR (awareness, desire, knowledge, ability, and reinforcement) change management methodology to coach, prepare, train, and manage leader expectations around change resulting from enterprise initiative.
  - Three-year external third-party evaluation showed a 92% acceptance rate of new systems and no significant issues remaining.

2320 California Ave
Everett, WA 98201
(b)(6)
(b)(6)

Marc Rosson

QUALIFICATIONS OVERVIEW

Outstanding IT manager of people, processes and projects. Demonstrated ability in progressively challenging management and technical positions. Recognized for:

- Understanding complex and difficult business situations
- Identifying creative solutions to business and management challenges
- Identifying the business issues and providing quality customer service to resolve them
- Building and motivating teams to achieve results in aggressive timelines
- Ability to know or analyze a situation in order to identify the 'best' path forward with the defined objectives and constraints

PROFESSIONAL EXPERIENCE

Enterprise Architect, Snohomish County PUD #1, August 2007 - Current

- Developed plans for Technology and Business Integration for multi-million dollars projects for the enterprise
- Developed solution architecture for multiple OT projects including ARRA Grant 2009, multiple Smart Grid projects for AMI, MicroGrid, Substation Automation, and Distribution Automation.
- Successfully implemented and managed large scale implementations of IT projects across multiple divisions of the company.
- Leading a multi-utility user group of shared goals and challenges for Advanced Distribution Management Systems.
- Proactively and holistically guides the enterprise through transformation and optimization initiatives. This includes helping the organization support its mission, optimizing costs and mitigating risks.
- Focused on understanding and applying existing, new and emerging technologies to transform and optimize business and operating model, as well as organize plan, design, innovate, orchestrate, facilitate, navigate and operationalize the digital enterprise.
- Leads the formal EA practice, managing a networked team of domain architects (business, information, solution, technical, security and other) in a dotted-line capacity.
- Responsible for helping business leaders enable their future-state business capabilities that, in turn, drive the organization's targeted business outcomes through the choice of initiatives the organization chooses to invest in.
- Leads and coordinates all aspects of the EA practice, including:

(1) Business Architecture: Focused on guiding people, process and organizational change
(2) Information Architecture: Focused on the consistent sharing of information across the enterprise
(3) Solutions Architecture: Focused on developing a direction for managing the portfolio of to-be solutions
(4) Technical Architecture: Focused on evolving the technical infrastructure

EDUCATION

Seattle University **MBA with E-Commerce concentration**, (b)(6)
Chapman University BS in Computer Science, (b)(6)

Andrew Coughlan
2320 California Ave Everett, WA 98203
(b)(6)

Education

BSc (Joint Hons) Business Management and Computer Science
Aston University, Birmingham U.K.

IT Technical Skills

Architecture	Platforms	Languages	Databases
Zachman	Windows Server	C#	SQL Server
TOGAF	Linux Server	Java	Oracle
SOA/Integration		SQL	Hana

Operational Technologies Experience Summary

- Applications – Extensive Knowledge of ADMS integration with GIS, DERMS and Customer facing Outage Communication Systems.

- Enterprise Service Bus – Proven ability to architect high volume bus technologies including Tibco, BizTalk and queuing technologies like JMS.

- Security acumen – Detail practical experience with key, Certificate and application security best practices

Employment History

- Snohomish County PUD – Application Architect (Everett, Sep 2007 - Present)
    - Proven strong leadership skills directing technical teams and large projects leveraging a style based on collaboration, pushing ownership and responsibility down to the people doing the work
    - Deep knowledge of the entire PUD application portfolio from GIS/OMS to Customer Service including business motivation and drivers
    - Extensive technical knowledge of PUD applications and the infrastructure on which they depend (Servers, databases, network, Storage)
    - Detail focus on application security/configuration management and future roadmaps for both SaaS and internal applications

1802 75th Street SW
Everett, WA 98203

(b)(6)

Melody Moore

Technical Summary

- ***Hardware***: PCs, Sun workstations, Motorola workstations, HP-UX.
- ***Operating Systems***: Windows, Pocket PC, Linux, Unix, Solaris.
- ***Development Environments***: MS Visual Studio, NetBeans, InstallShield.
- ***Languages***: C#, Java, C++, C, JavaScript.
- ***Patents***: Principal author of two provisional patents for Teltone Corporation involving VoIP and mobility applications.
- ***Technologies***: HTML, XML, AJAX, JPA, JAAS, REST, RSS, ORM, Win32, NT Services, multi-threading, Big Data, VoIP, Speech Recognition, MFC, SMTP, MAPI, JSF, J2EE, Java Web Start, SQL, STL.
- ***Telecom***: Computer Telephony Integration (CTI), Automatic Call Distribution (ACD), general Call Center Technology (CCT).

Experience

5/2020 - present | Snohomish County PUD | Everett,WA

Applications Architect – Collaborating with business units to determine and deliver specific application needs including

- Supporting/representing District ADMS at conferences and user groups
- Participating in District's smart meter project ("ConnectUp")
    - Architect responsible for helping guide HES, MDMS implementation/integration for District.
    - Blueprinting, RFP writing/reviews, testing for HES, MDMS and integrations to District systems.
    - Architecting/development of integrations to existing District systems for testing as well as in support of emergency events and alarms (hot sockets, reconnect failures).

12/2011-5/2020 | Snohomish County PUD | Everett,WA

Senior Applications Analyst – Development lead for all phases of Smart Grid rollout. In this role, I oversaw developing all the functionality required to take data from existing District sources, transform and deliver them in the required format for the DMS/OMS application.

- Designed/implemented middleware between District interfaces and the DMS/OMS sockets-based portal using XMLSerializer and asynchronous programming technology.
- Took over assorted SQL scripts, batch files, etc., augmented them with additional scripts and .NET applications, and created a cohesive automated system.
- Architected/developed a "self-service" WCF/browser application to support a broad range of reporting, file access/management and data modifications. Used role-based security to enforce appropriate access.

Skills – XML, sockets, SQL, PL/SQL, C#, .Net, WCF, HTML, JavaScript, automation, role-based security

Education

B.A., Computer and Information Sciences, University of California, Santa Cruz, (b)(6)

KEVIN JOHNSTON

(b)(6)
2320 California Ave Everett, WA 98201

Executive Summary

Proven leader of diverse technical teams. Extensive experience leading organizational transformations and positively changing cultures. Demonstrated record of improving efficiency, productivity, and thriving in fast-paced environments. Committed to delivering value to customers, designing high-quality processes and solutions. Responsibilities have included aspects of information security, interagency coordination, project management, risk management, classroom instruction, curriculum development, personnel administration, and employee coaching. Outstanding interpersonal, managerial, analytical, and public speaking skills.

Qualifications Summary

Security Architecture	CISSP	Team Leadership
Data Encryption	Enterprise Network Security	Incident Response
Data Loss Prevention	Policy and Governance	Risk Management

Experience

Senior Manager, Information Security – Snohomish County PUD **December 2022 – Present**

Lead a growing team of information security and risk management professionals with responsibility for enterprise-wide information security efforts to include policy, governance, regulatory compliance, security architecture, and supply chain security.

- Completely rewrote the organization wide Information Technology Incident Response Plan (IRP) to align with current best practices and industry standards.
- Consolidated multiple outdated policy document into a single, actionable, employee-focused directive to govern enterprise-wide information security.
- Provide leadership and support to the full breadth of NERC Critical Infrastructure Protection (CIP) standards.

Information Security Architect – Snohomish County PUD **July 2018 – December 2022**

Directed IT and OT information security efforts across the enterprise. Coordinated security activities across a multi-department, matrixed team of approximately 15 security and infrastructure technicians.

- Architected and implemented MFA for all web facing applications.
- Implemented, contracted, and managed a complex internal and external security monitoring program.
- Conducted an in-depth analysis of technical controls, mapping and ensuring alignment with the NIST Cyber Security Framework (CSF).

Senior Director of Operations – Navy Operations Support Center **July 2016 – July 2018**

Led a team of 350 professionals supporting a broad spectrum of global customers. Directed the training, coaching, performance evaluation and task readiness of employees with varying levels of experience.

- Service delivery: provided over 50 employees and 13,000-plus days of customer support to worldwide locations; continuously monitored task progress ensuring that remote employees remain engaged in meeting customer needs.
- Managed, secured, and maintained a $5.2 million dollar controlled-access facility.
- Directed 13 cross-functional business units ranging in size from 5 to 90-plus employees.
- Executed a $4.3 million dollar labor budget and $1.35 million dollar average annual operating budget.

Chief Information Security Officer (CISO) – Navy Reserve Headquarters **April 2014 – May 2016**

Ensured global cybersecurity for 60,000 users at over 200 facilities worldwide. Managed compliance and accreditation for 6 information systems and 20-plus associated applications. Conducted vulnerability assessment to include scanning, remediation, and penetration testing.

- Led multi-agency efforts to secure both data-at-rest and in-transit across numerous dynamic connections. Maintained compliance under the DoD Risk Management Framework (RMF), incorporating regulatory elements and best-practices from ISO, NIST, FIPS, Privacy Act, and FISMA.
- Re-engineered provisioning of PKI access tokens to 2500-plus classified account holders located around the world by streamlining the distribution of encryption keys using cloud technology.
- Ensured classified systems protection and data encryption at 80 secure facilities. Managed the systematic deployment of cryptographic hardware and keys supporting secure data and voice communications.

Education

MS, Network Operations – Naval Postgraduate School (b)(6)

Recognized for an Outstanding Thesis: "A Case Study of Introducing Innovation Through Design"

MA, Public Administration (MPA) – Troy University (b)(6)

BA, Political Science – University of California, Irvine (b)(6)

Certifications

Certified Information System Security Professional (CISSP) **Jul 2016-Present**

Global Information Assurance Certificate (GIAC-GSLC) **Sep 2014-2020**

Lesley Maas

2320 California Ave Everett, WA 98201
(b)(6)

EDUCATION

- **Master of Science, Accounting,** Western Governors University, Washington, (b)(6)
- **Bachelor of Science, Accounting,** Western Governors University, Washington, (b)(6)

EXPERIENCE

SNOHOMISH COUNTY PUD No 1, Everett, WA **2021-Current**

Senior Grant Coordinator

Review storm documentation submitted for FEMA reimbursements, including timesheets, credit cards, and environmental reports on transformer replacements. Review Grant agreements for compliance requirements, and deadlines. Compiling Schedule of Expenditures of Federal Awards (SEFA). Pulling backup and responding to Auditor requests related to Grants.

- Back-up for Other Accounts Receivable group processing Work Order closeouts

SNOHOMISH COUNTY SHERIFF'S OFFICE, Everett, WA **2016-2021**

Accounting Technician II

Processed accounts payable, accounts receivable, purchase card batches and journal entries. Tracked inventory, created purchase orders, processed 3-bid requests, and made purchases for the Sheriff's office. Processed payroll, reviewed timesheets, and created overtime and vacancy reports. Made travel reservations, processed paperwork for social hosting and issued checks for per diem. Set up new vendors, handled DAC paperwork to use other county office DACs for payments. Processed paperwork to have new purchase cards issued. Created travel/training reports updated with current and projected charges and posted them to SharePoint. Reconciliation of Civil bank account and Sheriff's Revolving bank account.

- Created reimbursement policy for outside applicants applying for Task Force Commander position.

MARYSVILLE FREE METHODIST CHURCH, Marysville, WA **2016-2017**

Administrative Assistant

Design menus, flyer inserts, and wall posters. Use QuickBooks, Planning Teams, and Proclaim.

- Suggested and helped implement systems to save printing costs and reduce errors.

SLALOM CONSULTING, Seattle, WA **2013-2015**

Engagement Management Office Analyst

Tracked employee time, rate, and expense variances on accounts using 3rd-party vendors. Partnered with account managers to devise pivot tables, spreadsheets, and other requested detailed formats. Created payment applications for accounts receivable. Investigated and resolved unapplied payment issues.

- Consolidated and simplified spreadsheet process previously handled among eight people while maintaining information needed to balance each individual account.

K&L GATES, LLC, Seattle, WA **2007-2013**

General Ledger Accountant

Balanced general ledger accounts for international law firm. Revised, balanced, and sustained more than 150 partner accounts. Reconciled 30+ bank accounts in multiple currencies. Handled operations and trust accounts. Tracked and processed firm staff and partner personal charges. Posted cost entries, produced pre-bills, proofed and generated invoices. Managed bank payments, wires, and outbound ACH.

- Worked on team that automated data entry section of partner spreadsheets including coding entries, connect general ledger accounts, balances, and individual transactions into Excel spreadsheets.

PROFESSIONAL ORGANIZATION MEMBERSHIP

Member of National Grants Management Association (NGMA) **2022-Current**

REX HABNER
Business Manager - Financial Secretary

DAMIAN HERNANDEZ, President
HELEN BERGLUND, Vice President
CHRISTINIA S. ROBERTON, Recording Secretary
SCOTT HINES, Treasurer

LOCAL UNION No. 77
International Brotherhood of Electrical Workers
19415 International Blvd, SeaTac, WA 98188 • Mailing Address P.O. BOX 68728, Seattle, WA 98168
Office (206) 323-4505 • Fax (206) 323-0186 • Construction Dispatch (206) 323-0585

March 14, 2023

Secretary Jennifer Granholm
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

Dear Madam Secretary:

On behalf of International Brotherhood of Electrical Workers (IBEW) Local No. 77 (Local 77), we offer our enthusiastic support for the Snohomish County Public Utility District No. 1 (SnoPUD) SnoSMART project grant application. I am the bargaining representative for approximately 600 members employed by SnoPUD. IBEW Local 77 represents over 8,300 members in the State of Washington, North Idaho, and parts of NW Montana. We represent workers within utilities, or contractors for utilities, in the energy generation, transmission, distribution, and maintenance sectors in nearly every community in Washington state. Among our employers, few are as poised to partner with Local 77 as SnoPUD has demonstrated through a history of innovative and extensive labor engagements.

SnoPUD and IBEW both benefit from our strong partnership. Our continued use of an Interest Based Bargaining approach to negotiate our Collective Bargaining Agreements demonstrates maturity and mutual respect in our labor relations. Both of our organizations are very involved in, and are advocates for, strong apprenticeship programs. We are also committed to expanding our community workforce engagement externally. In the coming months, we will explore multiple projects intended to reduce barriers to high-paying IBEW positions faced by women and other underrepresented groups, such as:

- Expanding the scope and presence of existing pre-apprentice programs to include electrical and water apprenticeship preparation, increasing access for women and other underrepresented groups to within reasonable commuting distances; and
- Exploring opportunities to partner with SnoPUD in growing IBEW presence in and support for the Tulalip Tribe's pre-apprentice program, particularly in student's readiness for clean energy apprenticeship programs.

Ensuring the prudency of funding is important to SnoPUD, but also the workforce of IBEW Local 77. We provide our wholehearted support for awarding SnoPUD the SnoSMART project grant. Together, SnoPUD and IBEW are creating a clean energy future in our shared community, where our members and their families can thrive.

Sincerely,

Nichole Reedy
Senior Assistant Business Manager
IBEW Local 77

6406 Marine Dr
Tulalip, WA 98271-9694
360-716-4500
Fax 360-716-0628

March 3rd, 2023

Secretary Jennifer Granholm
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

SUBJECT: Letter of Support for Snohomish County Public Utility District US DOE GRIP Proposal.

Dear Madam Secretary:

Tulalip Tribes is excited to partner with the Snohomish Public Utility District (Snohomish PUD) in support of the proposal entitled "**Snohomish County PUD's Secure Modern Automated and Reliable Technology Project**" (SnoSMART) being submitted in response to the US Department of Energy DE-FOA-00002740.

The Tulalip Tribes is a federally recognized sovereign Indian tribe with a reservation in western Washington. We are signatory to the 1855 Treaty of Point Elliott and are the successors in interest to the Snoqualmie, Snohomish and Skykomish and other allied bands signatory to that treaty. Under the Treaty, the Tulalip Tribes expressly reserved rights necessary to continue our lifeway activities.

Tulalip Tribes supports the proposed project's overall goals of developing, deploying and field demonstrating the application of smart grid technologies to enhance grid resilience. We believe this proposal helps us realize our goal of providing energy resilience for our members, particularly those most vulnerable to power outages, extreme weather events, and wildfire smoke, such as tribal elders and children. Furthermore, SnoSMART will complement and enable planned tribal microgrid projects that we are pursuing in partnership with Snohomish PUD.

We look forward to leveraging our existing relationship to collaborate with Snohomish PUD and other project partners on this significant project.

Sincerely,

Ryan Miller
Director, Treaty Rights &
Government Affairs