Other Attachment File(s)

*** Mandatory Other Attachment Filename:** 1235-TechnicalVolume.pdf

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: Sacramento Municipal Utility District

UEI: UPBTCLRN9KS5

* Street1: 6201 S Street

Street2:

* City: Sacramento County: Sacramento

* State: CA: California

Province:

* Country: USA: UNITED STATES

* ZIP / Postal Code: 95817-1818 * Project/ Performance Site Congressional District: CA-006

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: Wilton Rancheria

UEI:

* Street1: 9728 Kent Street

Street2:

* City: Elk Grove County: Sacramento

* State: CA: California

Province:

* Country: USA: UNITED STATES

* ZIP / Postal Code: 95624-2453 * Project/ Performance Site Congressional District: CA-007

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: 03/16/2023

4. Applicant Identifier:

5a. Federal Entity Identifier:

5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier: Sacramento

8. APPLICANT INFORMATION:

* a. Legal Name: Sacramento Municipal Utility District

* b. Employer/Taxpayer Identification Number (EIN/TIN): (b) (4)

* c. UEI: UPBTCLRN9KS5

d. Address:

* Street1: 6201 S Street
Street2:
* City: Sacramento
County/Parish: Sacramento
* State: CA: California
Province:
* Country: USA: UNITED STATES
* Zip / Postal Code: 95817-1818

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: Katarina
Middle Name:
* Last Name: Miletijev
Suffix:

Title: Manager, Distribution Operations Engineering

Organizational Affiliation:
Sacramento Municipal Utility District

* Telephone Number: 916 732 6235
Fax Number:

* Email: katarina.miletijev@SMUD.org

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:**

Connected Clean PowerCity

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: CA-006 * b. Program/Project: CA-006

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

1234-SMUD Congressional Districts.pdf | Add Attachment | Delete Attachment | View Attachment

17. Proposed Project:

* a. Start Date: 01/01/2024 * b. End Date: 12/31/2028

18. Estimated Funding ($):

* a. Federal	50,000,000.00
* b. Applicant	106,164,172.00
* c. State	0.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	156,164,172.00

*** 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: Lora

Middle Name:

* Last Name: Anguay

Suffix:

* Title: Chief Zero Carbon Officer

* Telephone Number: 916 732-5870 Fax Number:

* Email: lora.anguay@smud.org

* Signature of Authorized Representative: Dave Hanson * Date Signed: 03/16/2023

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. Budget Period 1		$	$	$ 21,689,351.00	$ 21,689,352.00	$ 43,378,703.00
2. Budget Period 2				27,572,272.00	36,417,174.00	63,989,446.00
3. Budget Period 3				239,064.00	16,710,797.00	16,949,861.00
4. Budget Period 4-5				499,313.00	31,346,849.00	31,846,162.00
5. Totals		$	$	$ 50,000,000.00	$ 106,164,172.00	$ 156,164,172.00

Standard Form 424A (Rev. 7- 97)
Prescribed by OMB (Circular A -102) Page 1

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY (1) Budget Period 1	(2) Budget Period 2	(3) Budget Period 3	(4) Budget Period 4-5	Total (5)
a. Personnel	$ 4,592,923.00	$ 5,237,061.00	$ 2,313,905.00	$ 4,359,925.00	$ 16,503,814.00
b. Fringe Benefits	2,974,874.00	3,423,770.00	1,479,851.00	2,875,661.00	10,754,156.00
c. Travel	0.00	0.00	0.00	0.00	0.00
d. Equipment	1,654,000.00	604,500.00	554,500.00	1,204,000.00	4,017,000.00
e. Supplies	0.00	0.00	0.00	0.00	0.00
f. Contractual	21,120,653.00	44,809,762.00	7,105,611.00	12,402,141.00	85,438,167.00
g. Construction	0.00	0.00	0.00	0.00	0.00
h. Other	5,989,878.00	1,850,253.00	1,963,628.00	4,267,381.00	14,071,140.00
i. Total Direct Charges (sum of 6a-6h)	36,332,328.00	55,925,346.00	13,417,495.00	25,109,108.00	$ 130,784,277.00
j. Indirect Charges	7,046,376.00	8,064,100.00	3,532,366.00	6,737,053.00	$ 25,379,895.00
k. TOTALS (sum of 6i and 6j)	$ 43,378,704.00	$ 63,989,446.00	$ 16,949,861.00	$ 31,846,161.00	$ 156,164,172.00
7. Program Income	$	$	$	$	$

Authorized for Local Reproduction

Standard Form 424A (Rev. 7- 97)
Prescribed by OMB (Circular A -102) Page 1A

SECTION C - NON-FEDERAL RESOURCES

(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e)TOTALS
8. Budget Period 1	$	$	$	$
9. Budget Period 2				
10. Budget Period 3				
11. Budget Period 4-5				
12. TOTAL (sum of lines 8-11)	$	$	$	$

SECTION D - FORECASTED CASH NEEDS

	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	$	$	$	$	$
14. Non-Federal	$				
15. TOTAL (sum of lines 13 and 14)	$	$	$	$	$

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. Budget Period 1	$	$	$	$
17. Budget Period 2				
18. Budget Period 3				
19. Budget Period 4-5				
20. TOTAL (sum of lines 16 - 19)	$	$	$	$

SECTION F - OTHER BUDGET INFORMATION

21. Direct Charges:

22. Indirect Charges:

23. Remarks:

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C.1352

OMB Number: 4040-0013
Expiration Date: 02/28/2025

1. * Type of Federal Action:

- [ ] a. contract
- [x] b. grant
- [ ] c. cooperative agreement
- [ ] d. loan
- [ ] e. loan guarantee
- [ ] f. loan insurance

2. * Status of Federal Action:

- [ ] a. bid/offer/application
- [x] b. initial award
- [ ] c. post-award

3. * Report Type:

- [x] a. initial filing
- [ ] b. material change

4. Name and Address of Reporting Entity:

- [x] Prime
- [ ] SubAwardee

** Name:* Sacramento Municipal Utility District

** Street 1:* 6201 S Street

Street 2:

** City:* Sacramento

State:

Zip: 95817-1818

Congressional District, if known: CA-007

5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime:

6. * Federal Department/Agency:

U.S. Department of Energy

7. * Federal Program Name/Description:

Grid Infrastructure Deployment and Resilience

CFDA Number, *if applicable:* 81.254

8. Federal Action Number, *if known:*

9. Award Amount, *if known:*

$

10. a. Name and Address of Lobbying Registrant:

Prefix:

** First Name:* Meguire Whitney

Middle Name:

** Last Name:* Meguire Whitney

Suffix:

** Street 1:* 10 G St NE, Suite 600

Street 2:

** City:* Washington

State: DC: District of Columbia

Zip: 20002

b. Individual Performing Services (including address if different from No. 10a)

Prefix: Ms.

** First Name:* Elizabeth

Middle Name:

** Last Name:* Whitney

Suffix:

** Street 1:* 10 G St NE, Suite 600

Street 2:

** City:* Washington

State: DC: District of Columbia

Zip: 20002

11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when the transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

*** Signature:** Dave Hanson

***Name:** *Prefix:* Mr. ** First Name:* Lawrence *Middle Name:*

** Last Name:* Luong *Suffix:*

Title: Manager, Federal Affairs **Telephone No.:** 916 215 9016 **Date:** 03/16/2023

Federal Use Only:

Authorized for Local Reproduction
Standard Form - LLL (Rev. 7-97)

Project Title:	**Connected Clean PowerCity**
Topic Area:	DE-FOA-0002740 Topic Area 2: Smart Grid Grants
Technical Point of Contact:	Katarina Miletijev, Manager of Distribution Operations Engineering SMUD (916) 732-6235 Katarina.Miletijev@smud.org
Business Point of Contact:	Hieu Nguyen, Principal Financial Accountant SMUD (916) 732-5358 Hieu.Nguyen@smud.org
Team Member Organizations:	Sacramento Municipal Utility District (SMUD) Wilton Rancheria Tribe of Miwok Indians Itron (vendor) Open Systems International (OSI) (vendor)
Senior/Key Personnel:	Lora Anguay – Chief Zero Carbon Officer Jose Bodipo-Memba – Chief Diversity Officer Suresh Kotha – Chief Information Officer Amber Connors - Director, Customer and Grid Operations Technology Center Trevor Lamb – Contract/Vendor Management & Grant Compliance Michael Cole – Cybersecurity Technical Lead Shiloh Costello - DEIA Lead Rob Ferrera – Environmental, Real Estate, Safety Service and Tribal Liaison
Project Locations:	SMUD service area (most of Sacramento County and small adjoining areas of Placer and Yolo counties in California.
Confidentiality Statement:	This document does not contain any confidential information.

Table of Contents

1 Project Overview

1.1 Background

In response to DE-FOA-0002740, Topic Area 2, SMUD—with partner Wilton Rancheria Tribe of Miwok Indians and technology providers Itron and Open Systems International, Inc. (OSI)—seeks to deploy a multi-faceted, resiliency- and equity-focused smart grid advancement project that will provide a highly replicable, scalable foundation for modernizing the electricity grid: **Connected Clean PowerCity**.

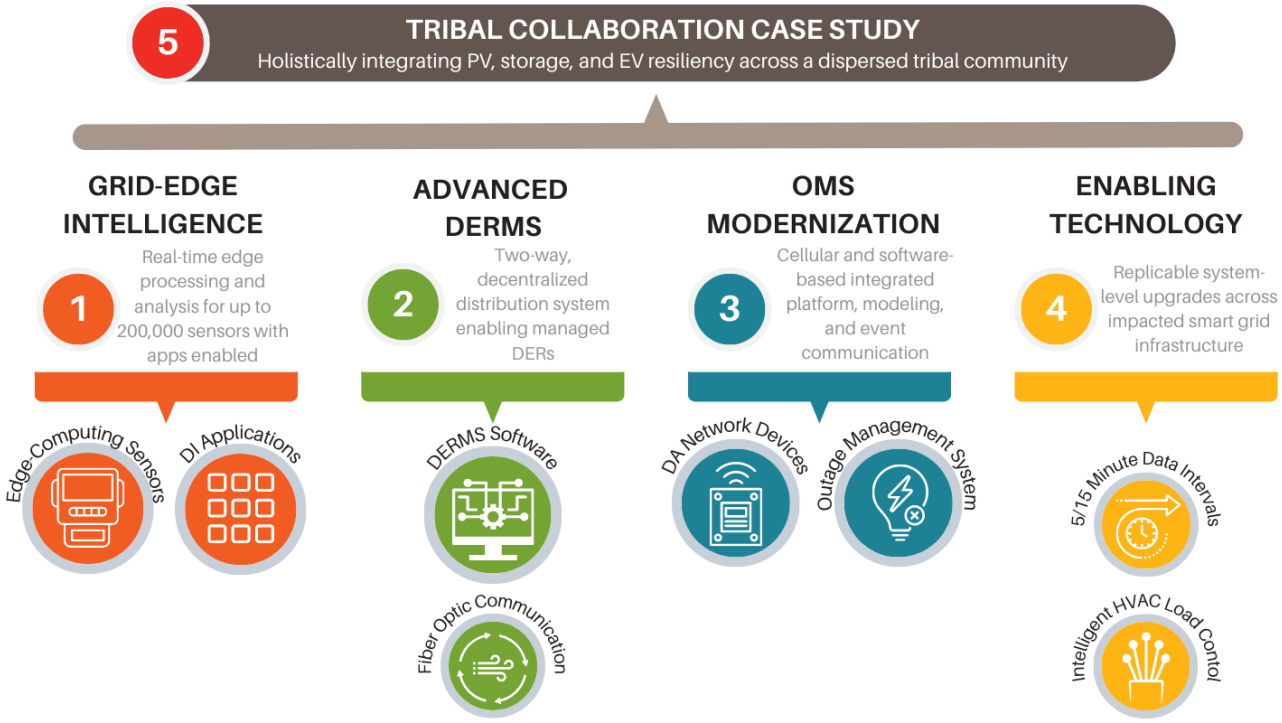


Figure 1 Connected Clean PowerCity DI at Grid Edge Elements

In 2021, SMUD embarked on a mission to reach zero carbon emissions in its power supply by 2030. Through its 2030 Zero Carbon Plan, SMUD aims to transition its power portfolio (51.4% natural gas, 29.3% renewables, and 17.7% large hydroelectric)[1] from centralized fossil generation towards distributed, carbon-free energy solutions. To execute a resilient grid with decentralized generation—required for full decarbonization—the Project will adapt infrastructure to interact with technology and customers at the grid's edge, establishing visibility, management, and control. This ecosystem, created through grid and technology enhancements, combined with

[1] 2021 Power Content Label, SMUD. https://www.smud.org/SMUDPCL

SMUD's existing Advanced Distribution Management System (ADMS), will enable real-time grid management of proliferating Distributed Energy Resources (DERs), the accelerated adoption of electric vehicles (EVs) and vehicle-to-everything (V2X), intelligent buildings, virtual power plants (VPP), battery storage, and electrified neighborhoods. To manage these assets, SMUD is accelerating the integration of Distributed Intelligence (DI) at the Grid Edge, an enhanced Distributed Energy Resource Management System (DERMS), and an advanced Outage Management System (OMS) to maintain and improve grid resiliency. Grid resiliency to SMUD is characterized by fast and flexible dispatchability, quick frequency response, dynamic voltage control, autonomous outage recovery, and black-start capabilities.

1.2 Project Summary

Connected CleanPower City's next-generation smart grid will address the regional need for resilient, reliable grid service that is hardened for and supports the clean energy transition within SMUD and other utilities' service areas. This new intelligent ecosystem replicates effective grid management at small to large utilities with dispersed Tribal partners in rural and urban communities. The Project includes five core elements to provide an ecosystem of intelligence that will manage the grid more effectively than the traditional top-down methodology of visibility and control.

- **Element 1: Distributed, Grid-Edge Intelligence at Scale** Deployment and complete integration of grid-edge computing sensors will increase grid capacity and flexibility while delivering technology-enabled and equitable customer engagement. The sensors' strategic deployment across under-resourced communities seeks to ensure benefit realization, including localized grid resilience and minimized energy disruptions.
- **Element 2: Advanced DERMS** Newly deployed sensors and fiber optic communications would be further leveraged through their integration with SMUD's existing ADMS and enhanced DERMS platforms to increase the visibility of behind-the-meter grid-connected devices enabling two-way management of DERs, operationalization of aggregator-based customer programs and the resolution of grid conditions through DERs.
- **Element 3: OMS Modernization** New grid edge devices and advanced DERMS functionality will be incorporated into a more robust OMS system giving operators a unified view of the as-switched electrical grid model and delivering extreme responsiveness and resiliency.
- **Element 4: Enabling Technology and Systems** Further upgrades to meter data polling intervalsand behind-the-meter demand response controls will enable technologies and systems to support more effective integration of smart grid infrastructure and replicability of this Project by other utilities.
- **Element 5: Wilton Rancheria Tribal Collaboration Case Study** Advanced smart grid system components will integrate with site-specific DERs at the Wilton Rancheria Miwok Tribal community. Electrification and deployment of DERS, edge computing sensors with DI Apps and Load Control Switches throughout the dispersed Tribal community will be tied into ADMS, DERMS, and OMS to increase grid resiliency and provide a level of energy independence for Tribal members.

Figure 2 shows SMUD service area in light purple, with overlaps for disadvantaged (dark purple) and partially disadvantaged (blue) communities according to CEJST. The Project's initial demonstration will be on Wilton Rancheria's Tribal land (black location marker). Additional site selection will prioritize disadvantaged communities (DACs) and low-income communities.

The region is home to the state Capitol and over 950,000 of the region's 2.4 million primarily urban residents (or 40%), many of whom live within 500-year flood plains in the Sacramento River watershed, making the area one of the greatest at-risk nationally from catastrophic floods. The proposed project location will likely see average daily maximum temperatures increase by 10ºF by end-of-century. Rising temperatures drive more frequent and intense heat waves and fewer cooling degrees days and nights. Earlier spring conditions, wetter winters, and drier summers will continue contributing to increased large summer and fall wildfires. The Project's deployment region is susceptible to energy disturbances and increased energy burden to communities while also serving as a critical location for statewide emergency response and evacuation prompted by climate disturbances.

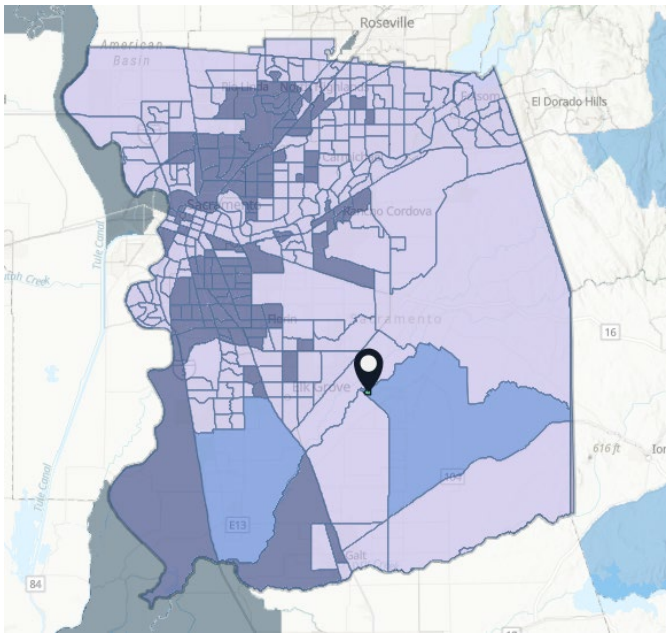


Figure 2 Connected Clean PowerCity Project Location

1.3 DOE Impact

The Project is not possible without the support and funding of the DOE. Achieving a complete ecosystem that delivers the resilience and flexibility of grid-edge intelligence with larger-scale community benefits is feasible through available technologies, but only attainable phased over an extended timeframe, diminishing financial efficacy and intended benefit. With DOE's investment, SMUD will effectively prove the proposed use cases in a real-world setting, supporting and catalyzing similar projects by other utilities and private sector investors. This will allow for full-scale commercial integration and proliferation of the proposed smart grid systems in a shorter timeline.

1.4 Community Benefits Plan

The Community Benefits Plan (CBP) will facilitate two-way stakeholder engagement and create lasting community benefits that flow to DACs. SMUD will incorporate lessons learned from its ongoing efforts to advance energy and environmental justice, DEIA, community and labor engagement, and quality jobs. The Project Team will build upon existing efforts throughout the development, construction, and operational stages to execute the CBP. SMUD is committed to the just and equitable distribution of clean energy transition benefits and impacts across all

communities throughout Sacramento. The Project's community-centered strategy will equitably distribute Project benefits. The Project Team is committed to at least 50% implementation in DACs.

1.4 Natural Resources

SMUD embraces environmental sustainability and stewardship as core values and works to protect people, ecosystems, and communities by conserving resources, minimizing waste and pollution, and safeguarding wildlife and the natural environment. These values complement compliance with applicable state and federal environmental regulations and guidance and underpin efforts to 1) avoid or minimize impacts whenever possible, and 2) responsibly and expeditiously remediate any impacts. This Project has no foreseen impacts on Tribal cultural resources or anticipated changes to the community's access to natural resources.

The Project will minimize new infrastructure installations by utilizing existing equipment siting wherever possible. New siting will primarily impact post-project implementations of DERs, charging, and storage. SMUD's comprehensive approach to environmental services stewardship ensures continued access to existing natural resources and minimizes project impact on the surrounding ecosystem. SMUD relies on the latest information available through the California Natural Diversity Database, the Native American Heritage Commission, and the California Historic Resources Information System when evaluating any work or projects that may or may not be subject to the California Environmental Quality Act. Design and standards across selected technologies will comply with all regulatory requirements and exceed them by applying SMUD's environmental values and construction, operations, and maintenance guidelines.

1.5 Climate Resilience Strategy

Climate impacts increasingly threaten the resilience of SMUD's electricity grid and the health of communities around Sacramento County. SMUD's service territory, the region, and the state are experiencing more unpredictable weather patterns caused by a climate emergency. Announced in July 2020, SMUD's Climate Emergency Declaration established an aggressive, sector-leading path toward carbon-neutral electricity essential to local and regional climate resilience. The Project, by its nature, builds resilience against climate change and supports more rapid decarbonization and reduced emission of GHGs.

SMUD has analyzed its vulnerabilities alongside changes expected within the Sacramento Valley Region, including heat storms and droughts, seasonal temperature averages, wildfires, fluctuations in regional wind patterns, changing precipitation, temporal changes in runoff, and sea-level rise. The Project incorporates climate projection scenarios and readiness findings into execution determinations, utilizing climate readiness methodologies in its overarching approach. Learning from project deployment will be incorporated into SMUD's ongoing Climate Readiness Strategy and Analysis, last executed in 2021 and unified with regional adaptation collaboratives.

2 Technical Description, Innovation, and Impact

SMUD has designed the Project to identify and implement the base elements and critical infrastructure needed to prepare and implement a complete next-generation smart grid. The proposed Project will fund the deployment of edge-computing sensors and DI apps, DERMS software, DERMS-enabling fiber optic cable, a modernized OMS with cellular-based network devices, and intelligent 2-way load control switches.

2.1 Relevance to FOA Objectives

The Project is highly relevant to the targeted funding objectives, as summarized in the following.

Table 1 GRIP Topic 2 Objectives Alignment

FOA Objective	Project Relevance
Increase the capacity of transmission facilities or the capability of the transmission system to transfer increased amounts of electric energy reliably	Enabling integration of additional DERs (solar, EVs, energy storage, VPPs, demand response programs, intelligent thermostats and/or appliances) and DERMS enhancements will help reduce transmission system demand by shifting generation to the distribution system, therefore freeing up transmission line capacity for increased energy transfer capabilities.
Prevent faults that may lead to wildfires or other system disturbances	Virtual aggregation points, sensors, data analytics, and data granularization through DI will provide greater and near real-time visibility of the distribution system to the enhanced and integrated ADMS/OMS/DERMS systems during extreme conditions and allow grid operators to quickly reconfigure the grid and safely re-energize customers by isolating faults to a minimal clearance.
Facilitate the aggregation and integration (edge-computing) of EVs and other grid-edge devices or electrified loads.	Integrated DERs/grid-edge devices provide targeted system benefits for EV charging infrastructure, V2G technologies and capabilities, and intelligent building technologies. The Project includes 1) the deployment of edge computing sensors with measurement capabilities to enable DI to process and analyze data from a wide array of DERs, EVs, and other grid-edge elements; 2) the demonstration of a NextGen Air Conditioning Load Management (Peak Conserve) system with up to 22,500 smart two-way load control switches/sensors; and 3) the local demonstration of the entire suite of proposed solutions with the Wilton Rancheria Miwok Tribal community, including edge computing sensors with DI applications, solar, battery storage, and intelligent EV charging infrastructure.

The Project will also drive vital grid-benefitting outcomes that encourage and facilitate the development of realizing smart grids functions:

Table 2 Connected CleanPower City Grid Benefiting Outcomes

Grid Stability and Resilience	Maximum use of existing generation, transmission and distribution assets, minimized inefficiencies on the distribution grid, mitigated stressors of increasing demands on the grid, maintained overall grid stability and resilience during peak demand, and reduced impacts due to disruptive events.
Edge Intelligence	Identifying outage locations, overloaded or improperly sized transformers, incorrect meter to transformer associations, various EV and DER charging/discharging activities, and reducing outage impact and duration through faster service restoration and pushing decisions and control to the edge.
Operational Efficiencies	Increased ability to identify and resolve faults, localized right-sizing of transformers, extended transformer life, reduced and more efficient as well as proactive/predictive maintenance/troubleshooting truck rolls, and enhanced customer safety and service.

Distribution-Side Opportunities	Support and encourage DERs on the grid's distribution side, expand energy storage opportunities, and security and resiliency of added generation if generation and transmission assets are impacted.
Economic Benefits	Business opportunities to develop, supply, and support new edge computing apps, creating high-skill job opportunities in the community during deployment, creating high-skill job opportunities maintaining equipment, reducing long-term energy costs, and holding off or mitigating costly generation and transmission projects.
Environmental and Community Benefits	Reduced carbon emissions due to reduced truck rolls and more efficient grid utilization (less generation required), dynamic coordination between renewable DERs and stored energy assets, policy opportunities for broader community contribution and participation, empowering consumers to participate directly in managing their energy usage, and increased safety through preventative maintenance of low voltage issues in front of and behind the meter.

2.2 Project Approach

SMUD will design and deploy the following coordinated, advanced smart grid infrastructure with enabling technologies to provide comprehensive smart grid benefits to internal operations, end users, and community members:

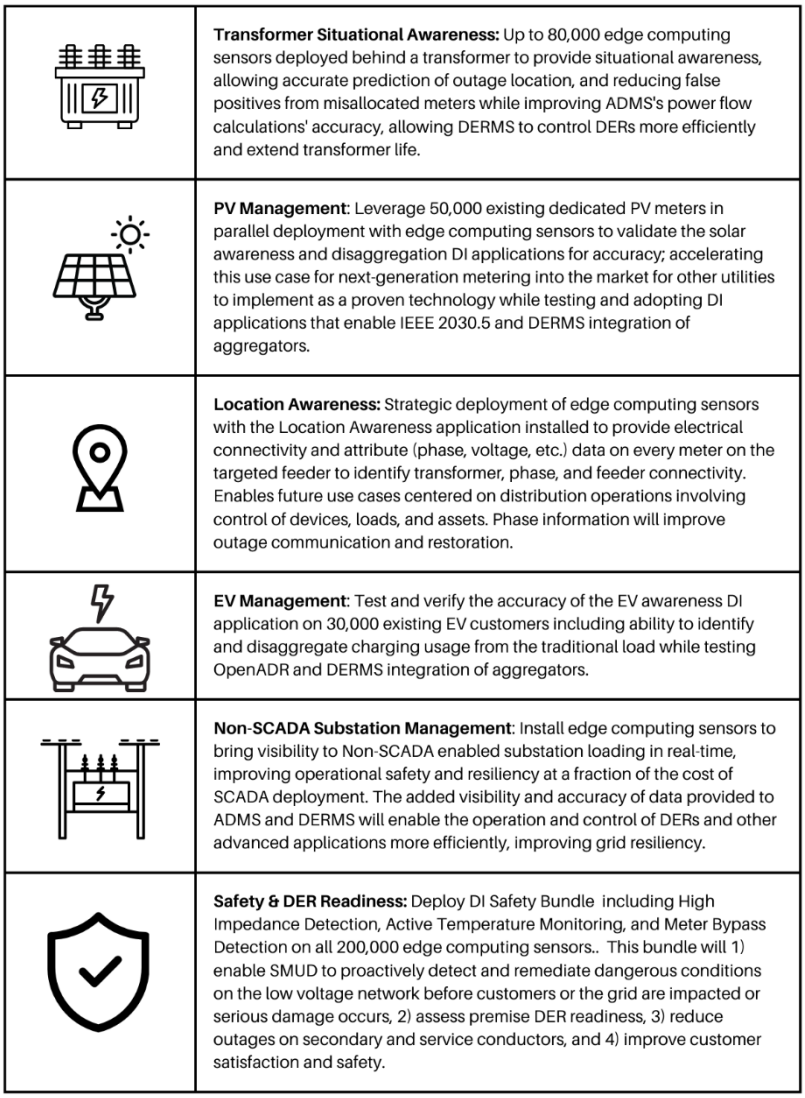


Figure 3 Distributed Grid-Edge Intelligence Deployment Use Cases

Element 1: Distributed, Grid-Edge Intelligence at Scale The Project will deploy DI at the Grid Edge to process and analyze data incoming from a wide array of DERs, EVs, and consumer devices at the edge. The proposed grid edge ecosystem will capture and analyze data in real-time, informing SMUD's process for controlling and managing its grid and the associated impacts of DERs more accurately. Element 1 will focus on enabling DI at the Grid Edge at scale by strategically deploying 200,000 edge computing sensors with measurement capabilities. The Project will also deploy up to eight DI applications (apps) on the edge computing sensors to enable the use cases in Figure

4. These deployments will improve SMUD's ability to monitor and manage its real-time distribution assets at Grid Edge.

DI at the Grid Edge components deployed under Element 1 will provide multiple grid benefits and improve data processing and transfer to appropriate systems. Improving visibility and control of the electrical system to grid operators will enhance interoperability and streamline the data architecture of systems that support the two-way flow of electric power. Grid operators can quickly rebalance the electrical system, mitigate grid-related impacts, and improve power quality and grid resilience. Furthermore, DI apps will support the detection, aggregation, and integration management of DERs and other "grid edge" devices to provide increased system benefits, such as load and voltage support, reducing the need for future system infrastructure upgrades. Improved visibility and control of DERs and their impact on grid operations at the distribution transformer level will minimize transformer outages by right-sizing transformers to support DER loads and extending the service life of existing transformers by managing loads to keep voltage within the rated operational limits. This visibility will enable SMUD to increase proactive maintenance and upgrades of transformers and other grid edge infrastructure, resulting in fewer outages and increased grid resiliency and exchanging relevant information between electricity system operators and customers as needed.

Element 2: DERMS The Project will execute software development, testing, and deployment of enhanced DERMS functionalities (Figure 5) with a fiber installation producing an integrated solution that will shift from one-way, centralized distribution to a two-way decentralized distribution system. This shift will enable two-way management of DERs, including solar, EVs, energy storage, demand response programs, and intelligent thermostats or appliances. SMUD will also integrate new and enhanced functionality of DERMS software DER (Figure 5), including fault location and service restoration, DER management and dispatchability, real-time energy market participation, V2X enablement, aggregator platform solutions, and communication pathways. SMUD will install up to 100 miles of fiber optic cable to facilitate deployment and improve DERMS situational awareness, control, and data quality, enabling DERMS to respond with faster and more granular outputs to improve grid management.

Enhanced Economic Performance and Market Participation	• DER Device Information Enhancements • DERMS Monitoring and Control Enhancements, • Dispatch DERs to Solve Grid Conditions • Forecasting Enhancements • Scheduling Tool • Scheduling DERs for Electrical Performance • ADMS Advanced Applications Integrations • Determine Non-Electrical System Conditions • Enhancements Send Non-Control (Pricing) Information to DERs • Forecasting Enhancements Generate DER Operating Constraints • Scheduling DERs for Economic Performance • Scheduling DERs in Electricity Markets • ADMS Advanced Applications Integrations • Scheduling DERs for Electrical Performance Enhancements
NextGen Technology Integrations	• Integration of third party platforms to DERMS • Integration of DI Apps • Enabling IEEE 2030.5 communication

Figure 4 Element 2: DERMS software testing and deployment functionality

By building upon SMUD's existing infrastructure, the proposed DERMS and fiber enhancements increase grid resiliency and

improve system safety, responsiveness, and reliability. DERMS components deployed under Element 2 will manage fault contributions from expanding DERs and provide enhanced fault locations and improved response times while ensuring safe management and grid stability. DERMS will additionally support distribution operators by automatically dispatching or recommending DERs to help maintain safety and reliability for customers and crews.

Element 3: OMS Modernization The Project will deploy a modern Outage Management System (OMS) and components to modernize system communication to provide extreme responsiveness and resiliency, allowing communities to realize enhanced benefits from proposed smart grid elements.

OMS	Deploy updated OMS to incorporate the following service modernizations: 1) Single unified map and a 360 view of the as-switched electrical grid model to manage distribution SCADA and outages; 2) Enable the use of microgrids with batteries for outage restoration; 3) Event visibility for multiple assigned crews to gauge hazard source and determine location accurately; 4) ability to assign multiple crews to one event, leveraging GPS to accurately auto assign status; 5) provide on-demand updates of SMUD's electrical model at any time, allowing Operators immediate access to the as-switched model versus waiting up to 24h for the next day's migration
DA Network Devices	Upgrade approximately 300 DA Network Devices with cellular-based communication to provide grid data consistently and with less latency before the OMS modernization.

Figure 6 Element 3: OMS Modernization system enhancements

The modernized OMS will provide the following advanced benefits: Improved customer service through better AMI integration that identifies nested outages and verifies customer restoration; enable line crews to take photos of the outage scene, then load them into the system's outage event to pre-warn crews regarding hazards and needed repairs; support for secondary outage modeling and reporting, thereby accurately reflecting outages without operator intervention; more accurately identifying which customers are experiencing a 'grid down' event; and trigger notification, allowing the configuration of triggers to occur when a defined condition exists while automatically notifying personnel regarding specific conditions occurring—this functionality provides customer notification when one of their accounts (e.g., hospitals, rest homes) are involved in a planned or unplanned outage; damage assessment & advanced storm management; and wire down prediction capabilities.

Migration to 5/15 Minute Intervals	The Project will implement 5-minute interval data for commercial customers and 15-minute interval data for residential customers.
Intelligent HVAC Load Control	The Project will deploy up to 22,500 intelligent 2-way load control switches/sensors communicating over SMUD's AMI network. These devices will cycle air conditioning loads and act as sensors to provide data on real-time device status and how much load is available to be shed, as well as other load-shedding capabilities that are less intrusive and offer better comfort to the customer than previous generations of switches.

Figure 5 Element 4: Enabling Technologies and Systems

Element 4: Enabling Technologies and Systems: SMUD understands that effectively integrating smart grid infrastructure can require additional system-level upgrades. To support replicability by other utilities seeking to incorporate smart grid infrastructure, specific enabling

technologies, and systems identified facilitate project implementation and benefit acquisition.

Enabling Technologies and Systems installed under Element 4 will provide necessary grid-resource granularity and load insights while preparing communities within the project location for extreme weather events and emergencies. Alongside an ability to predict power issues before customer outage notification, interval measurements will allow DER response at the panel level and participation in the regional Energy Imbalance Market. The enhanced insights and analysis extend to managing shifting loads due to electrification and escalating renewable generation sources.

Element 5: Integrated Case Study Wilton Rancheria The Project will conduct a complete Tribal assessment of building electrification (PV, battery storage, heat pump water heaters, and EVSEs) and weatherization opportunities, conduct education and marketing campaigns for up to 70 Tribal members who own their homes, and deploy electrification technologies, edge computing sensors with DI applications, and load control switches at identified locations which, along with existing DERs, will be integrated into ADMS, DERMS, and OMS to increase grid resiliency and provide a level of energy independence for Tribal members. Although the electrification and weatherization technologies are not eligible under the grant and will not be included in the project budget, they are critical to enabling SMUD to provide real-world workforce development opportunities and employment training opportunities for Tribal members as well as foster energy independence for the Tribe.

With over 900 members in the Sacramento area, Wilton Rancheria is Sacramento County's only federally recognized Native American Tribe. The Tribe's Indigenous Territory encompasses the County, and its people were historically subject to military incursions, disease, slavery, and violence. Today, the Rancheria is 38.5 acres in the Sacramento Valley along the Cosumnes River. The Tribe faces high unemployment, lack of health insurance, and limited access to its ancestors' history. Members are committed to achieving economic self-determination, cultural preservation, community education, and promoting technologies that support renewable generation and sustainability infrastructure.

2.3 Technical Feasibility and Resource Capability

The Project utilizes extensive existing infrastructure, all owned and maintained by SMUD with ensured access. Likewise, the Project's necessary workforce aligns through stakeholder partners, including the International Brotherhood of Electrical Workers (IBEW), local and regional governments, and the Wilton Rancheria Tribe of Miwok Indians. All hardware and software to be deployed by the Project are proven in production environments but will be installed in a novel, strategic combination at scale to unlock additional features and functionality required for the next-generation smart grid.

Table 3 Technology Feasibility

Proposed Technology		Feasibility Summary
Element 1	Edge Computing Sensors with Measurement Capabilities	Almost 900,000 Itron edge computing sensors have been deployed at several utilities nationwide over the past five years, with 5,000,000 additional devices awaiting deployment. SMUD staff have experience via a successful 1-year pilot with Itron deploying and running 300 edge computing sensors in production. SMUD and Itron have 14+ years of experience partnering on AMI technologies that will be leveraged by this Project, including the network hardware infrastructure and back-office systems required to enable DI at the Grid Edge.
	DI Applications	Itron's DI applications have been proven both in pilot and production, with over 4,600,000 licensed DI applications currently deployed in production across several utilities (on average >5 applications per edge computing sensor) since first launching in 2017. SMUD staff have experience via a successful 1-year pilot with Itron running four DI applications in SMUD's production environment.
Element 2	DERMS Functionality Software	Basic DERMS functionality is an established technology. SMUD and OSI will leverage their extensive industry and DERMS-specific experience to develop and deploy advanced DERMS functionalities for the market. Each enhancement will go through industry standard development and testing cycles (leveraging SMUD's existing ADMS and DERMS infrastructure) before deployment and will be validated by external third parties for fit and function.
	Fiber Optic Cable	Fiber is a proven technology to provide fast and reliable communication and has already been deployed at SMUD's sub-transmission substations.
Element 3	OMS	OSI's modern advanced OMS is a proven technology with over 50 instances in production at other utilities over the past ten years. SMUD and OSI have a proven, multi-year track record of collaborating on technology deployments, including ADMS and basic DERMS. SMUD and OSI are highly experienced with OMS functionality, deployments, and enhancements.
	DA Network Devices	Cellular-based DA network devices are proven in the industry and have been deployed at SMUD on over 150 DA devices, including devices directly commissioned on the cellular network, as well as devices being converted from a radio mesh network to a cellular network.
Element 4	Load Control Switches	Itron Load Control Switches are a proven, established technology with over 2,000,000 installed on AMI mesh networks across 30+ utilities. SMUD has successfully conducted a 2,000 Load Control Switch pilot with the associated back-office software in collaboration with Itron. SMUD and Itron each have over 30 years of experience operating HVAC load control programs.

2.4 Innovation and Impacts

The smart grid status quo in the electric industry is inadequate to manage the grid of the future, given the expected proliferation of DERs and the ongoing climate emergency. Both DERs and climate change introduce significant variability and uncertainty to the grid. The Project will demonstrate a better way by combining innovative technologies, including DI at the Grid Edge, Advanced DERMS, and a modern OMS platform, to demonstrate synergy at the scale required for the future grid.

Today most utilities with smart grids operate with a centralized back-office platform primarily focused on billing with significant data latency and minimal integration between other systems such as ADMS, DERMS, and OMS. With the ever-increasing number of grid-tied devices expected in the future combined with climate change impacts, including fluctuating wind speeds, cloud cover, heat, floods, drought, and unpredictable supply and demand, the grid's optimal state will

fluctuate second by second and must be determined and managed in real time to maintain resiliency. Utilities will no longer be able to successfully operate using batch processing, latency-laden communications, and centralized control. SMUD and its partners plan to leverage their long history of innovation as industry leaders to successfully deploy a system of real-time, distributed intelligence, optimization, and control at the edge.

The Project will move away from batch processing and centralized control with their inherent latencies, waste, and cost, to a system that leverages Grid Edge Linux Computers, advanced sensor and measurement capabilities, multiple standardized communication paths such as PLC, peer-to-peer, Wi-Fi, 2030.5, DNP3, Mesh, Cellular, Fiber, and cutting-edge autonomous apps and associated platform and ecosystem, to deliver Distributed Intelligence at the Grid Edge combined with and Advanced DERMS and modern OMS platform. The Project will provide a playbook and drive transformational effects on smart grid advancement for small to midsized utilities seeking hyper-local deployments with regional and statewide impact over the coming decade and into the decarbonized future.

2.5 Decarbonization and Resilience Alignment

Local, regional, state, Tribal, and national strategies (Figure 8) to mitigate climate disaster and decarbonize electricity supply coincide with the Project's grid-advancing objectives. These resilience plans call for escalating building stock and transportation electrification while increasing reliance on renewable generation resources. SMUD has anticipated this surge in supply while also preparing for full decarbonization of its portfolio by 2030. Diverse solutions are necessary to meet electrification and decarbonization targets, none of which can be deployed to capacity utilizing existing grid infrastructure. The grid ecosystem produced by this Project is essential to the execution of the Sacramento region and State of California energy targets.

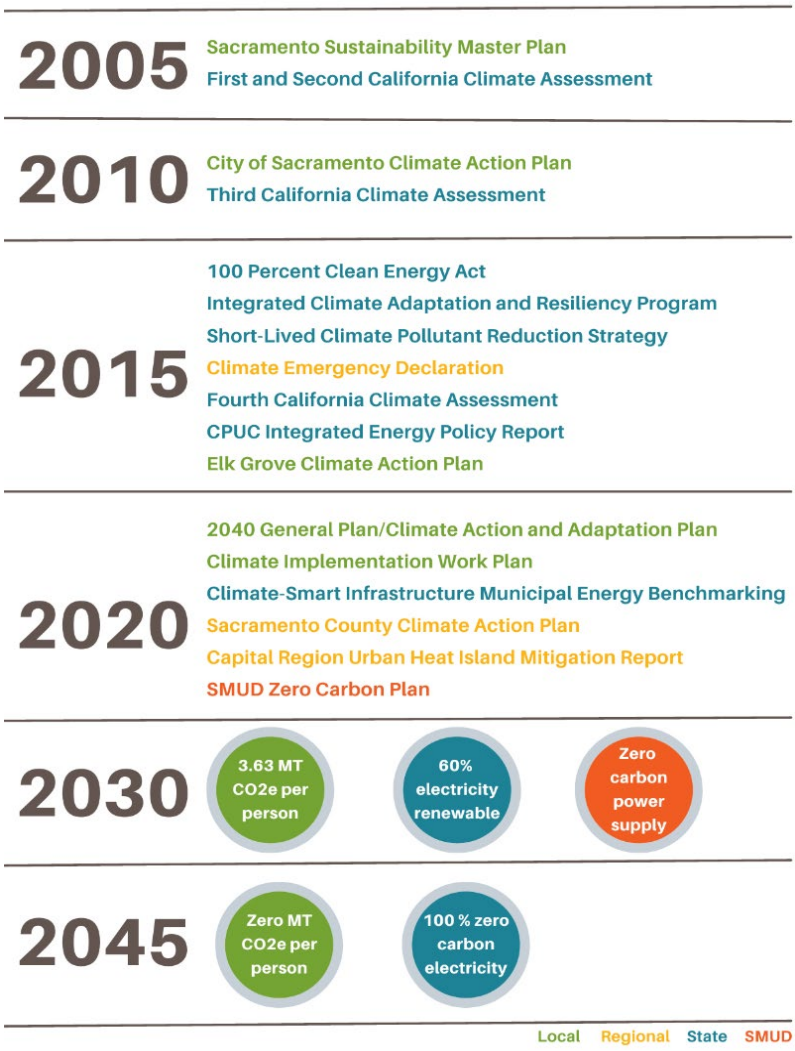


Figure 7 Resilience and decarbonization integrations and roadmap

2.6 Project Deployment and Risk Mitigation

Reduced technology risk surrounding advanced smart grid deployment and implementation will be a crucial target outcome. Building on work completed to date through pilots and proof of concepts, SMUD will leverage existing components that help reduce system risk. In this manner, the Project will significantly de-risk the proposed smart grid technologies for other utilities seeking to deploy smart grid systems for resiliency and other benefits. Community-targeted benefits, facilitated by the Community Benefits Plan, will help SMUD and other utilities to gain buy-in from community members and stakeholders to support future deployments. SMUD has made a careful assessment of the project risks and organized them into six major categories: financial, supply, technology, security, regulatory, and customer, as summarized below:

Table 4 Project Risk and Mitigation Strategies

Risk		Mitigation
Financial	Scope adjustment	Engage the right resources during the blueprint design phase and identify anything that may negatively impact the project early on. Negotiate scope, schedule, resources, and budget progress/changes with key stakeholders.
	Labor resource Constraints	Identify potential tasks such as testing that can be outsourced and contract qualified external resources/vendors as part of the resource plan.
Supply	Limited product availability and supply chain issues for equipment	Identify required equipment and assess lead time. Place orders early based on worse-case lead time to ensure timely delivery (may mean placing orders before the DOE award is announced for early delivery in 2024). Maintain regular communication with manufacturers. Will also explore negotiating contractual priority and late delivery penalties with manufacturers.
	Deployment and/or material costs continue rise	Ensure that early on the project scope is clearly defined and that cost estimates are aligned to the scope with appropriate cost escalations year over year locked in via contract. Do not interject scope creep which could increase project costs.
Technology	Components acceptance testing	Extend schedule to allow additional time for testing functionality prior to full acceptance test. Plan "dry run" acceptance testing to observe potential issues in time to resolve before full testing. Complete comprehensive testing with ongoing system before formal acceptance testing. Leverage lessons learned from previously conducted pilots to further mitigate risk.
	Functionality production delays	Continue to work with vendor to test features, run each use case and document variances, patch QA system and retest until desired functionality is obtained.
Security	Technology systems vulnerability exposure	SMUD Cybersecurity personnel will be embedded on the project team to address vulnerabilities as part of the architecture design process and through acceptance testing and conduct ongoing risk assessments throughout the project schedule to allow timely resolution if an issue arises.
Reg	Shifting technology standards	Participate in state and federal regulatory standards development processes to monitor and influence changing standards.
Cus	Technology adoption	Embed SMUD's customer outreach and marketing teams in each sub-project team to increase customer awareness, provide education, gain support, and address concerns.

2.6.1 Achieving Further Deployment at Scale

The Project will verify—in a complete and fully operational grid system under large-scale implementation—the significant benefits of smart grid and community integration, including Green House Gas (GHG) emissions reduction, improved grid function, integration of renewable

and distributed generation resources, advancement of the clean energy transition, and advocacy for substantial Tribal benefits. Moreover, it will provide details regarding execution and operational costs with benefits of the proposed systems and include SMUD's critical input regarding lessons learned and the value of all proposed elements. This information will significantly improve other utilities' ability to accurately evaluate the real-world costs and significant benefits of deploying smart grid infrastructure, catalyzing interest, and future investment in these systems.

2.6.2 Catalyze Additional Private Sector Investments

The Project will catalyze additional private sector investments in the targeted community for integrated smart grid technologies through the development of innovation and workforce development via the following mechanisms:

Table 5 Investment Catalyzation Mechanisms

Direct Investment	Direct investment by DOE and SMUD will help to advance domestic manufacturing of the proposed smart grid technologies and systems—including edge computing sensors with measurement capabilities, load control switches, and supporting technology infrastructure (e.g., servers, storage arrays)—through direct purchases of the targeted equipment.
Market Advancement	The Project will help to significantly de-risk the proposed technologies and systems, thereby spurring additional deployments at scale and helping U.S. markets for many smart grid technologies and systems to move from the demonstration scale to full-scale utility-level implementation and deployment.
Workforce Development	Through the proposed workforce development process (refer to Community Benefits Plan), the Project will initiate local investments in workforce development needed to support larger-scale market development. Moreover, SMUD will make all workforce development curricula and training materials available to other agencies and workforce development entities nationwide to support and advance workforce development and training in other communities. These efforts will help to ensure workforce availability for smart grid system installation and operation/maintenance.
Innovation	Direct and future (indirect) utility investments in advanced smart grid equipment and systems deployed under the Project will support technology innovation and development among entrepreneurs and developers. Data sharing, future trial applications, and future partnership developments with technology providers will also support innovation and entrepreneurship in SMUD's service area/target communities. Edge computing will offer SMUD and the cities and communities that it serves a platform to accelerate new ways to solve grid resiliency and reliability issues, both at present and in the future. Integrating the proposed platform within SMUD's service area will provide a foundation to support new developments focused on additional/future grid resiliency, affordability offerings, and innovations.

3 Workplan

3.1 Project Objectives

The Project will enable a zero-carbon grid of the future by deploying technologies and processes that improve service reliability, support core community benefits, and provide equitable energy access to all at a best-in-class cost. Expected outcomes future-proof the region's resilience against climate projections and electrification needs while concurrently delivering immediate benefits in testing grid congestion reductions based on edge-sensing.

Table 6 Technical Specifications and Objectives

Technical Specification	Metric
DI at Grid Edge	Deploy up to 200,000 edge computing sensors with measurement capabilities and up to eight (8) DI applications with supporting back-office infrastructure to enable DI at the grid edge.
Advanced DERMS	Deploy advanced DERMS features with centralized artificial intelligence and integrate DERs to support the transition from a one-way centralized distribution system to a two-way decentralized system that reinforces grid resiliency. Deploy up to 100 miles of fiber optic cable to facilitate deployment and improve DERMS situational awareness, control, and data quality.
OMS Modernization	Implement a new OMS with advanced features as the next step towards an integrated Advanced Distribution Management platform to enable operational efficiencies and better customer and community experience through improved communication, grid automation, and modernization.
Enabling Technology and Systems	Deploy up to 22,500 intelligent 2-way load control switches/sensors to cycle air conditioning load. Deliver 5/15 minute interval data availability for commercial/residential customers.
Tribal Collaboration Case Study	Conduct Tribal assessment of building electrification opportunities (PV, battery storage, heat pump water heaters, and EVSEs). Conduct education and marketing campaigns for up to 70 Tribal members who own their homes. Deploy electrification technologies and edge computing sensors at identified locations and integrate with utility-facing smart grid components included in project.

The Project commits to procuring U.S. iron, steel, and construction materials throughout the deployment, including sub-awards, contracts, subcontracts, and purchase orders utilized during implementation. Manufactured, grid-necessary components, including meters and sensors, have been assessed with a preference for assembly within the U.S. The project team anticipates partnering with the DOE and project partners to ensure appropriate procurement that enables national economic vitality.

3.2 Technical Scope Summary

The Project will be conducted in five (5) budget periods (B.P.) spanning sixty (60) months with each B.P. lasting approximately twelve (12) months:

Table 7 Project Budget Periods

Budget Period (B.P.)	Task Status
B.P. 1: Overall Project Management & Planning	Commences Tasks 1, 2, 3, 4, 5, 6, and 7.
B.P. 2: Deployment Phase 1	Continues Tasks 1, 3, 5, 6, 7; Concludes Tasks 2 and 4
B.P. 3: Deployment Phase 2	Continues Tasks 1, 3, 5, 6, 7
B.P. 4: Deployment Phase 3	Continues Tasks 1, 3, 5, 6, 7
B.P. 5: Project Closure	Concludes Tasks 1, 3, 5, 6, 7

3.3 WBS and Task Description Summary

Table 8 Task and Milestone Summary

Task	Task / Subtask Title	Type	Number	Milestone Description	Verification Process	Time
Budget Period 1 (2024): Project Management Planning & Pre-Deployment						
1.1	Project Management Plan	Progress	M1	Develop, maintain, and implement the PMP	Deliverable 1.1.1	Q1 - Q4

1.2	National Environmental Policy Act Compliance	Progress	M2	Comply with the National Environmental Policies Act (NEPA)	NEPA Compliance Documentation	Q1 – Q4
1.3	Cybersecurity Plan	Progress	M3	Develop, maintain and implement the CSP	Deliverable 1.3.1	Q1 – Q4
1.4	Risk Management Plan	Progress	M4	Develop, maintain and implement the RM	Deliverable 1.4.1	Q1 - Q4
1.5	Kick Off Meeting & Continuation Briefings	Progress	M5	Conduct project kickoff meeting and submit annual continuation briefings	Deliverables 1.5.1, 1.5.2	Q1 – Q4
1.6	Annual progress and community benefits reports	Progress	M6	SMUD will submit annual progress reports to DOE summarizing progress	Deliverable 1.6.1	Q4
2.1	DI at Grid Edge Pre-Deployment Readiness	One-time	M8	See DI at Grid Edge specification in section 3.1	Deliverable 2.1.1	Q1 – Q2
2.2	DI at Grid Edge Targeted Community Deployment	Progress	M9	See DI at Grid Edge specification in section 3.1	Deliverable 2.2.1	Q2 - Q4
3.1	DERMS Enhanced Economic Performance & Market Participation	Progress	M11	See Advanced DERMS specifications and objectives in section 3.1	Decision 3.1.1, Deliverables 3.1.2-4	Q1 - Q3
3.2	DERMS NextGen Technology Integrations	Progress	M12	See Advanced DERMS specifications and objectives in section 3.1	Decision 3.2.1	Q3 - Q4
3.3	Enhanced Distribution System Communications	Progress	M13	See Advanced DERMS specifications and objectives in section 3.1	Deliverables 3.3.1, 3.3.2	Q1 - Q4
4.1	OMS IT Build	Progress	M14	See OMS Modernization specifications and objectives in section 3.1	Decision 4.3.1	Q1 - Q2
4.2	OMS System Configuration	Progress	M15	See OMS Modernization specifications and objectives in section 3.1	Decision 4.3.1	Q2 - Q3
4.3	OMS Testing	Progress	M16	See OMS Modernization specifications and objectives in section 3.1	Decision 4.3.1	Q3 - Q4
5.1	Switch Deployment	Progress	M18	See Enabling Technology and Systems specifications and objectives in section 3.1	Deliverable 5.1.1	Q1 - Q4
7.1	Community & Labor Engagement	Progress	M21	See Community Benefits Plan	Deliverable 7.1.1	Q2 - Q4
7.2	Investing in American Workforce	Progress	M22	See Community Benefits Plan	Deliverable 7.2.1	Q1 - Q4
7.3	Diversity, Equity, Inclusion & Accessibility	Progress	M23	See Community Benefits Plan	Deliverable 7.3.1	Q3 - Q4
Budget Period 2 (2025): Deployment Phase 1 [Continuation of Tasks 1.1-1.6]						
2.2	DI at Grid Edge Targeted Community Deployment	Progress	M9	See DI at Grid Edge specification in section 3.1	Deliverable 2.2.1	Q1 - Q2

2.3	DI at Grid Edge Deployment at Scale	Progress	M10	See Advanced DERMS specifications and objectives in section 3.1	Deliverable 2.3.1, 2.3.2	Q2 – Q4
3.2	DERMS NextGen Technology Integrations	Progress	M12	See Advanced DERMS specifications and objectives in section 3.1	Decision 3.2.1	Q1 – Q4
3.3	Enhanced Distribution System Communications	Progress	M13	See Advanced DERMS specifications and objectives in section 3.1	Deliverables 3.3.1, 3.3.2	Q1 - Q4
4.3	OMS Testing	Progress	M16	See OMS Modernization specifications and objectives in section 3.1	Decision 4.3.1	Q1 - Q3
4.4	OMS Commissioning	Progress	M17	See OMS Modernization specifications and objectives in section 3.1	Decision 4.4.1	Q3 - Q4
5.1	Switch Deployment	Progress	M18	See Enabling Technology and Systems specifications and objectives in section 3.1	Deliverable 5.1.1	Q1 - Q4
6.1	Wilton Rancheria Electrification & DER Integration	Progress	M19	See Tribal Collaboration Case Study specifications and objectives in section 3.1	Decision 6.1.1	Q1 - Q4
7.1	Community & Labor Engagement	Progress	M21	See Community Benefits Plan	Deliverable 7.1.1	Q1 - Q4
7.2	Investing in American Workforce	Progress	M22	See Community Benefits Plan	Deliverable 7.2.1	Q1 - Q4
7.3	Diversity, Equity, Inclusion & Accessibility	Progress	M23	See Community Benefits Plan	Deliverable 7.3.1	Q1 - Q4
7.4	Justice40 Initiative	Progress	M24	See Community Benefits Plan	Deliverable 7.4.1	Q1 - Q4
Budget Period 3 (2026): Deployment Phase 2 [Continuation of Tasks 1.1-1.6]						
3.2	DERMS NextGen Technology Integrations	Progress	M12	See Advanced DERMS specifications and objectives in section 3.1	Decision 3.2.1	Q1 - Q4
3.3	Enhanced Distribution System Communications	Progress	M13	See Advanced DERMS specifications and objectives in section 3.1	Deliverables 3.3.1, 3.3.2	Q1 - Q4
5.1	Switch Deployment	Progress	M18	See Enabling Technology and Systems specifications and objectives in section 3.1	Deliverable 5.1.1	Q1 - Q4
6.1	Wilton Rancheria Electrification & DER Integration	Progress	M19	See Tribal Collaboration Case Study specifications and objectives in section 3.1	Decision 6.1.1	Q1 - Q4
7.1	Community & Labor Engagement	Progress	M21	See Community Benefits Plan	Deliverable 7.1.1	Q1 - Q4
7.2	Investing in American Workforce	Progress	M22	See Community Benefits Plan	Deliverable 7.2.1	Q1 - Q4
7.3	Diversity, Equity, Inclusion & Accessibility	Progress	M23	See Community Benefits Plan	Deliverable 7.3.1	Q1 - Q4

7.4	Justice40 Initiative	Progress	M24	See Community Benefits Plan	Deliverable 7.4.1	Q1 - Q4
Budget Period 4 (2027): Deployment Phase 3 [Continuation of Tasks 1.1-1.6]						
3.2	DERMS NextGen Technology Integrations	Progress	M12	See Advanced DERMS specifications and objectives in section 3.1	Decision 3.2.1	Q1 - Q4
3.3	Enhanced Distribution System Communications	Progress	M13	See Advanced DERMS specifications and objectives in section 3.1	Deliverables 3.3.1, 3.3.2	Q1 - Q4
5.1	Switch Deployment	Progress	M18	See Enabling Technology and Systems specifications and objectives in section 3.1	Deliverable 5.1.1	Q1 - Q4
6.1	Wilton Rancheria Electrification & DER Integration	Progress	M19	See Tribal Collaboration Case Study specifications and objectives in section 3.1	Decision 6.1.1	Q1 - Q4
7.1	Community & Labor Engagement	Progress	M21	See Community Benefits Plan	Deliverable 7.1.1	Q1 - Q4
7.2	Investing in American Workforce	Progress	M22	See Community Benefits Plan	Deliverable 7.2.1	Q1 - Q4
7.3	Diversity, Equity, Inclusion & Accessibility	Progress	M23	See Community Benefits Plan	Deliverable 7.3.1	Q1 - Q4
7.4	Justice40 Initiative	Progress	M24	See Community Benefits Plan	Deliverable 7.4.1	Q1 - Q4
Budget Period 5 (2028): Project Closure [Continuation of Tasks 1.1-1.6]						
1.7	Project Closure	One-time	M7	Final Project Briefing and Final Report	Deliverables 1.7.1 and 1.7.2	Q3 - Q4
3.2	DERMS NextGen Technology Integrations	Progress	M12	See Advanced DERMS specifications and objectives in section 3.1	Decision 3.2.1	Q1 - Q3
3.3	Enhanced Distribution System Communications	Progress	M13	See Advanced DERMS specifications and objectives in section 3.1	Decision 3.3.1, Deliverables 3.3.1, 3.3.2	Q1 - Q4
5.1	Switch Deployment	Progress	M18	See Enabling Technology and Systems specifications and objectives in section 3.1	Deliverable 5.1.1	Q1 - Q4
6.1	Wilton Rancheria Electrification & DER Integration	Progress	M19	See Tribal Collaboration Case Study specifications and objectives in section 3.1	Decision 6.1.1	Q1 - Q4
6.2	Wilton Rancheria Integrated Case Study	Progress	M20	See Tribal Collaboration Case Study specifications and objectives in section 3.1	Deliverable 6.2.1	Q1 - Q4
7.1	Community & Labor Engagement	Progress	M21	See Community Benefits Plan	Deliverable 7.1.1	Q1 - Q4
7.2	Investing in American Workforce	Progress	M22	See Community Benefits Plan	Deliverable 7.2.1	Q1 - Q4

7.3	Diversity, Equity, Inclusion & Accessibility	Progress	M23	See Community Benefits Plan	Deliverable 7.3.1	Q1 - Q4
7.4	Justice40 Initiative	Progress	M24	See Community Benefits Plan	Deliverable 7.4.1	Q1 - Q4

3.4 Go/No-Go Decision Points

Table 9 Go/No Go Decision Points

Task No.	Go/No Go Task Title	Type	Milestone	Description	Verification Process	Time
2.1	Decision for Riva Meter Install	Go/No Go	D2.1.1	D2.1.1 decision criteria will include securing adequate funds to demonstrate the economic feasibility of moving into BP2.	SMUD submits analysis doc to DOE.	2024
3.1	Decision for DERMS Enhance Economic Performance Production Upgrade	Go/No Go	D3.1.1	D3.1.1 decision criteria will include securing adequate funds to demonstrate the economic feasibility of moving into BP2.	SMUD submits analysis doc to DOE.	2024
3.2	Decision for Enhanced Distribution System Communications locations & Designs	Go/No Go	D3.3.1	D3.1.1 decision criteria will include securing adequate funds to demonstrate the economic feasibility of moving into BP2.	SMUD submits analysis doc to DOE.	2024
3.3	Decision for DERMS NextGen Tech Integrations Production Upgrade	Go/No Go	D3.2.1	D3.2.1 decision criteria will include securing adequate funds to demonstrate the economic feasibility of moving into BP5.	SMUD submits analysis doc to DOE.	2027
4.3	Decision for OMS Pre-Factory Acceptance Testing	Go/No Go	D4.3.1	D4.3.1 decision criteria will include securing adequate funds to demonstrate the economic feasibility of moving into BP3.	SMUD submits analysis doc to DOE.	2025
4.4	Decision for OMS Commissioning Production Cutover	Go/No Go	D4.4.1	D4.4.1 decision criteria will include securing adequate funds to demonstrate the economic feasibility of moving into BP3.	SMUD submits analysis doc to DOE.	2025
6.1	Decision for Wilton Rancheria installation	Go/No Go	D6.1.1	D4.4.1 decision criteria will include securing adequate funds to demonstrate the economic feasibility of moving into BP3.	SMUD submits analysis doc to DOE.	2025

3.5 End of Project Goal

SMUD has designed the Project to identify and implement the base elements and critical infrastructure needed to prepare and implement a complete next-generation smart grid. The proposed Project will fund the deployment of edge-computing sensors and DI apps, DERMS software, DERMS-enabling fiber optic cable, a modernized OMS with cellular-based network devices, and intelligent 2-way load control switches. The end of the Project includes a fully enabled instance of DI at the Grid Edge at scale, Advanced DERMS and OMS enabling SMUD to reach its goals of a carbon zero future, setting the foundation for next generation technologies, and creating a project portfolio for other utilities to follow.

3.6 Project Schedule

The work will take place over sixty (60) months, spanning five (5) B.P.s, each lasting approximately twelve (12) months, respectively. Each B.P. will have a planning and implementation aspect. The majority of the project deliverables and associated spending will be achieved in the first 36 months of the proposed Project.

Task Name	Duration	Start	Finish
Task #1: Overall Project Management & Planning	**1305 days**	**Mon 1/1/24**	**Sun 12/31/28**
Project Management Plan (M1)	1306 days	Mon 1/1/24	Sun 12/31/28
National Environmental Policy Compliance (M2)	1306 days	Mon 1/1/24	Sun 12/31/28
Cybersecurity Plan (M3)	1306 days	Mon 1/1/24	Sun 12/31/28
Risk Management Plan (M4)	1306 days	Mon 1/1/24	Sun 12/31/28
Kickoff Meeting and Continuation Briefings (M5)	1306 days	Mon 1/1/24	Sun 12/31/28
Progress Reports & Community Benefits Reports (M6)	1306 days	Mon 1/1/24	Sun 12/31/28
Project Closure (M7)	132 days	Sat 7/1/28	Sun 12/31/28
Task #2: Distributed Intelligence at the Grid Edge	**522 days**	**Mon 1/1/24**	**Tue 12/30/25**
Pre-Deployment Readiness (M8)	**88 days**	**Mon 1/1/24**	**Wed 5/1/24**
Targeted Community Deployment (M9)	**209 days**	**Wed 5/1/24**	Mon 2/17/25
Deployment at Scale (M10)	**224 days**	**Thu 2/20/25**	**Tue 12/30/25**
Task #3: Advanced Distributed Energy Resource Management System (DERMS)	**1305 days?**	**Mon 1/1/24**	**Sun 12/31/28**
Enhanced Economic Performance & Market Participation (M11)	**156 days**	**Mon 1/1/24**	**Mon 8/5/24**
NextGen Technology Integrations (M12)	**1015 days**	**Tue 8/6/24**	**Mon 6/26/28**
Enhanced Distribution System Communications (M13)	**1306 days?**	**Mon 1/1/24**	**Sun 12/31/28**
Task #4: OMS Modernization	**557 days**	**Mon 1/1/24**	**Tue 2/17/26**
IT Build (M14)	**115 days**	**Mon 1/1/24**	**Fri 6/7/24**
System Configuration (M15)	**60 days**	**Mon 6/10/24**	**Fri 8/30/24**
Testing (M16)	**282 days**	**Mon 9/2/24**	**Tue 9/30/25**
Commissioning (M17)	**59 days**	**Tue 9/30/25**	**Fri 12/19/25**
Task#5: Enabling Technology & Systems	**1263 days?**	**Mon 1/1/24**	**Wed 11/1/28**
Switch Deployment (M18)	**1263 days?**	**Mon 1/1/24**	**Wed 11/1/28**
Task #6: Wilton Rancheria	**1282 days?**	**Thu 2/1/24**	**Sun 12/31/28**
Project Administrative Tasks	**1283 days?**	**Thu 2/1/24**	**Sun 12/31/28**
Electrification & DER Integration (M19)	**1002 days?**	**Sat 3/1/25**	**Sun 12/31/28**
Integrated Case Study Results (M20)	44 days?	Wed 11/1/28	Sun 12/31/28
Task #7: Community and Labor Engagement (Community Benefits)	**1305 days**	**Mon 1/1/24**	**Sun 12/31/28**
Community and Labor Engagement (M21)	1241 days	Mon 4/1/24	Sun 12/31/28
Investing in American Workforce (M22)	1306 days	Mon 1/1/24	Sun 12/31/28
Diversity, Equity, Inclusion and Accessibility (M23)	1176 days	Mon 7/1/24	Sun 12/31/28
Justice40 Initiative (M24)	1044 days	Wed 1/1/25	Sun 12/31/28

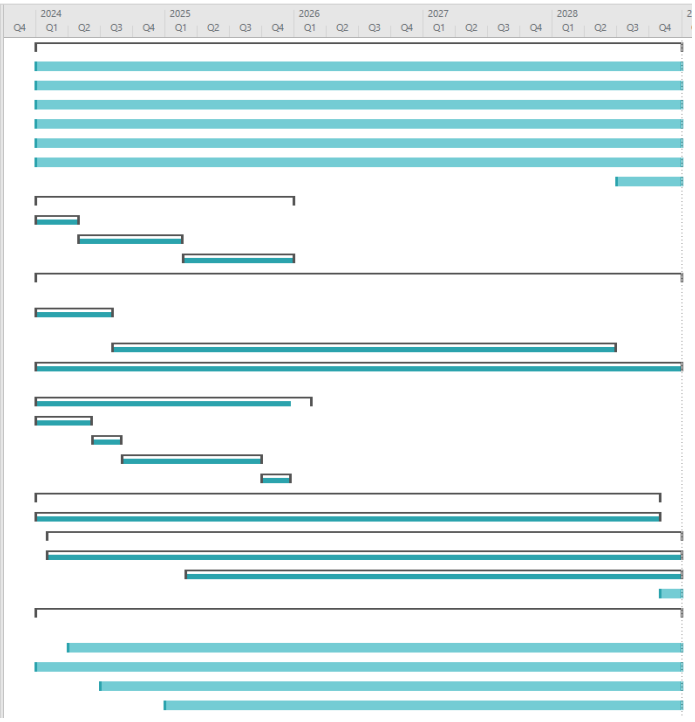


Figure 8 Project Schedule

3.7 Project Management

Project readiness and viability are exceptionally high. SMUD has supported the development, testing, running trials, and selectively deploying multiple categories of smart grid infrastructure and pilot programs for over two decades. Preliminary planning level coordination completed to date has included feasibility assessments and evaluations through SMUD's capital improvement program. Roles have been established across project partners to optimize efficacy and outcomes.

Table 10 Project Partner Roles

Project Partner	Role
SMUD	• Lead management and oversight of all aspects of the Project, including management of project funding and day-to-day management of all elements of the Project. • Complete all Project and financial management following SMUD's existing Project Management Office (PMO), providing governance on the entire project lifecycle. • Act as the project lead and oversee and be ultimately responsible for the work of all other grant recipients / sub-recipients / contractors/vendors. • Provide centralized, focused day-to-day operations and management of the Project according to SMUD's PMO standard procedures, which are DOE compliant. • Complete all required project administration, including contracting, subcontracts, management of vendors, and budget management/invoicing. • QA/QC for all deliverables and work products, including invoices

Wilton Rancheria	• Act as lead for project case study • Provide Tribal infrastructure and personnel resources as needed to advance objectives
Itron	• Serve as technical expert in metering technology and DI apps. • Execute rigorous safety and quality assurance/control strategy. • Provide monitoring and validation on all project implementations
OSI	• Serve as technical expert in DERMS and outage management technology. • Execute rigorous safety and quality assurance/control strategy. • Provide monitoring and validation on all project implementations
All Partners	• Identify internal goals and goals for Program. • Review budget. • Review performance and evaluate next steps. • Review customer (SMUD) experience

SMUD has outlined the staffing and organizational plan, including veteran researchers, technical experts, managers, and key administrative staff.

Table 11 Key Individual Roles

Role/Person	Description
SMUD	
Program Director	Oversee general direction and progress of the Project. Make key decisions, correspond with DOE and involved partners. Call upon Leads and SMEs for expertise where needed.
Business Lead	Oversee and manage Business perspective of the project and act as single point of escalation to address any business issues to ensure successful project execution.
Contract/Vendor Management & Grant Compliance	Oversee and manage Contract/Vendor resources responsible for delivery and implementation of equipment and solutions in scope for grant. Act as single point of escalation to address any contract/vendor issues to ensure successful project execution.
Cybersecurity Lead	Perform technical cybersecurity review for grid technology. Perform analysis to determine threat model and cyber control selection for risk mitigation. Serve as liaison with vendors and manufacturers to evaluate cybersecurity functionality.
DEIA Lead	Oversee and manage community benefits plan and related engagement and workforce development training strategies.
Environmental & Tribal Liaison	Provides correspondence between Environmental, Real Estate, Safety Service, & Tribal groups to address concerns and roadblocks to ensure successful project execution.
Technical Leads	Provides technical leadership to guide projects to successful implementation. Use expertise and input from Subject Matter Experts to drive decisions.
Project Managers	Responsible for tracking status and ensuring that the project is completed within the designated timeline, budget, and scope, and that all project objectives are met. Coordinate with stakeholders. Provide reports on element progress.
Subject Matter Experts	Provide Expertise in respective areas to address questions, concerns, and roadblocks during the project.
Wilton Rancheria	
Program Administrator	Oversee Tribal programs, contracts, training, education, and grant administration.
Director of Economic Development	Oversee Tribal workforce training programs and economic development opportunities. Coordinate with relevant SMEs and SMUD to realize opportunities.
Cultural Preservation Lead	Oversee education of Tribal homeowners that will serve as an example of electrified homes in the Tribal communities.
Implementation Lead Manager	Oversee planning and integration of advanced technologies

Itron	
Technical Implementation Lead	Oversee and manage Itron resources responsible for delivery and implementation of Itron equipment and solutions in scope for grant. Act as single point of escalation to address any issues and ensure successful project execution.
OSI	
Technical Implementation Lead	Oversee and manage OSI resources responsible for delivery and implementation of OSI solutions in scope for grant. Act as single point of escalation to address any issues and ensure successful project execution.

The Project's team will establish agreed procedures for critical handoffs and include an examination of interdependencies in the Project Execution Plan.

3.7.1 Project Risk Management

The Risk Management Plan will provide a secure framework to be used by the team to identify, assess, and prioritize risks that may occur during planning and execution and will include community stakeholder and labor partner approaches outlined in the Community Benefits Plan. SMUD will use the various management and communication mitigations in Table 12.

Table 12 Project Risk Management and Communication

Program Director	A dedicated program director will supervise project schedule maintenance, critical project documentation and reporting, and budgetary and accounting support.
Budget Reporting	Monthly Budget reports will track and compare project expenses against the budget and activities completed.
Project Lead Meetings	Weekly project lead meetings will provide an overview of the progress in carrying out their assigned tasks and activities.
Oversight Committee Meetings	Monthly meetings of the Executive Oversight Committee will discuss project progress and updates, potential issues and corrective actions, provide guidance and make any needed policy-level decisions.
Project Risk Assessments	Monthly project risk assessment will analyze and report on any project risks identified and mitigation activities undertaken.
Issue Log	Issue Log will provide a formal process for issue tracking, logging, and resolution.
Performance Status Reports	Monthly, quarterly, and annual performance and status reports will summarize project performance, milestones reached, metrics, and results, along with quarterly budget tracking.
Exception Situation Report	Exception Situation Report will summarize how and why aspects of the Project are in an Exception Situation, recommended recovery actions, changes to the plan, and the impact of this new plan upon the Project.

3.7.2 Project Controls

Without compromising scope, SMUD will manage the Project using sound project management and concurrent engineering in a milestone/schedule-driven manner, tightly controlling the budget and timeline. SMUD, as Project Lead, will immediately escalate any events regarding safety, compliance violations, or issues that could potentially result in a violation, potential delays, or significant performance issues. The project team will internally develop a preferred recommendation and as required, consult DOE regarding any need to update or modify the SOPO or other committed documentation. As required, all changes to Project objectives, budgets, milestones, and contractual obligations will be made to the DOE project manager. The project management team will work closely with partners and the DOE to track technical progress against critical path objectives while maintaining communication across stakeholders and channels.

The Program Director will address Quality Assurance/ Quality Control (QA/QC). SMUD's technology -specific Project Managers, overseen by the Program Director will be accountable for the development, implementation, and evolution of QA/QC throughout the Project based on the "trust but verify" principle. SMUD will work with project partners to assess all QA/QC program areas for completeness, accuracy, and general conformance to control documents, contract requirements, applicable industry standards, and sound engineering practices.

4 Technical Qualifications and Resources

SMUD is a community-owned, not-for-profit electric utility providing affordable, safe, reliable electricity for over 70 years to Sacramento County and parts of Placer County, California. SMUD has a history of deploying advanced/cutting-edge technologies and systems that improve energy service, maintain and improve affordability, reduce greenhouse gas emissions, and ensure equitable access to energy and energy services across its service area. To this end, SMUD is a recognized leader and award winner for its innovative energy efficiency programs, renewable power technologies integration and deployment, and sustainable, equitable solutions. SMUD is the sixth largest publicly owned utility in the U.S.

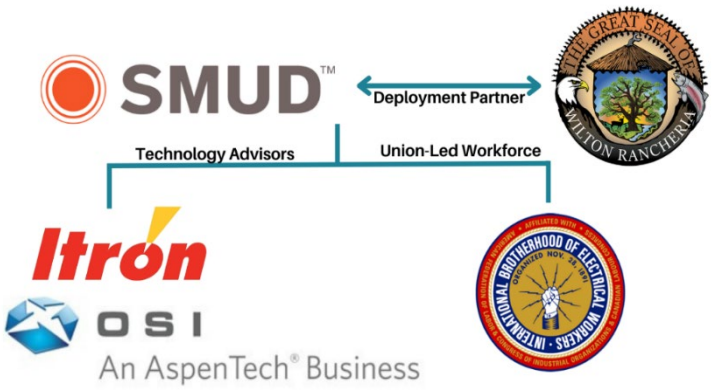


Figure 10 Project Organizational Structure

The Project will be supported by over 50 SMUD resources including Project Managers, Technical Leads, and Subject Matter Experts with centuries of combined experience in their fields including Information Technology, Cybersecurity, Distribution and Transmission Operations, Community Engagement, and Smart Grid technologies. These resources will provide over 220,000 hours of labor to support the Project (Table 13). Additional individual qualifications across disciplines and organizations are provided in attached resumes.

Program Director, Katarina Miletijev will oversee deployment of all elements of the Project. Katarina has 21 years of experience in Engineering and currently leads real-time operations of the distribution grid. Katarina was responsible for deploying ADMS and DERMS at SMUD as well as the Distribution Automation component of SMUD's legacy Smart Grid Investment Grant (SGIG).

Business Lead, Hieu Nguyen will oversee all financial matters between SMUD and the Department of Energy. This includes establishing the accounting procedures for tracking all costs associated with implementation of the grant, preparation of quarterly financial statements and reimbursement requests. Hieu has 15 years of accounting experience, and currently leads accounting services for all of SMUD's Federal grants.

Contract / Vendor Management / Grant Compliance, Trevor Lamb has 15 years of experience at SMUD supervising a variety of contracts, licensing, and vendor management as well as AMI experience. He was a core team member of SMUD's legacy SGIG and currently oversees IT grant participation. Trevor will lead the organization and implementation of grant contracts and manage overall grant compliance.

Table 13 Project Resources Commitment

Name	Role	%
SMUD		
Katarina Miletijev	Program Director	95%
Hieu Nguyen	Business Lead	6%
Trevor Lamb	Contract Management & Grant Compliance	60%
Michael Cole	Cybersecurity Lead	60%
Shiloh Costello	DEIA Lead	6%
Rob Ferrera	Environmental, Real Estate, Safety Service, & Tribal Liaison	24%
Various	Technical Lead	70%
Various	Project Manager	35%
Various	Subject Matter Expert	58%
Wilton Rancheria		
Dahlton Brown	Program Administrator	10%
Herbert Griffin	Cultural Preservation Lead	5%
Chris Franklin	Exec. Director of Economic Development	5%
Venesa Kremer	Program Manager	10%
Itron		
Bryan Seaboldt	Technical Implementation Lead	10%
OSI		
Sally Jacquemin	Technical Implementation Lead	10%

Technical Lead (Cybersecurity), Michael Cole will oversee IT/OT Cybersecurity Engineering and Operations. Michael is a Manager of Cybersecurity Engineering and Operations at SMUD and oversees technical product evaluations, cybersecurity operations, threat modeling, cybersecurity control selection, and defensible architecture. He has worked in various IT and OT cybersecurity roles in the utility industry for 17 years.

DEIA Lead, Shiloh Costello has 25 years of experience leading community-based organizations. Shiloh has designed and managed over 130 high impact partner relationships with community-based organizations that provide equitable and inclusive access to proven indicators of sustainable community success, with special attention given to historically underserved neighborhoods.

Environmental and Tribal Liaison, Rob Ferrera will serve as the Tribal Liaison for the project. Rob has 10 years of experience in the environmental field specializing in the California Quality Act (CEQA), leading and coordinating efforts with Tribal communities, providing Tribal consultation, project management, and Diversity, Equity, Inclusion and Belonging (DEIB) operational best practices.

The members of **Wilton Rancheria** are descendants of the Penutian linguistic family identified as speaking the Miwok dialect. The Tribe's Indigenous Territory encompasses Sacramento County. The lands the Tribe's ancestors inhabited were located along a path of massive death and destruction of California Indians caused by Spanish, Mexican, and American military incursions, disease, slavery, and the violence accompanying mining and settlements. Wilton Rancheria was

terminated in 1959 by the federal government. After years of struggle, the Tribe regained its federal recognition in June 2009. In November 2011, the Tribe adopted its modern Constitution, and since that time, the Tribe's leadership has worked diligently to implement and further develop the Tribal government.

Itron was founded and incorporated in 1977 as a computing and communications company whose initial focus was automating meter data collection for the utility industry. Itron's initiative to bring Edge Computing to market began in 2017 and has remained a continuous area of focus, investment, and evolution. Itron has managed thousands of global projects for cities and utility companies, gaining the experience and the expertise needed to address a wide range of small- and large-scale projects involving AMI smart grid networks, smart city solutions, meter and device deployments, complex software and analytic systems, and integrating such solutions with third-party components and back-office business systems.

Since inception in 1992, **OSI** has been committed to the business of developing and implementing real-time network and resource management solutions tailored to monitor, manage, control, and optimize assets vital to the integration and management of DERs. Over the past 6 years, OSI has completed more than 900 projects worldwide, adapting to customers' needs globally.

4.1 Facilities and Equipment

Existing equipment that will be leveraged to facilitate the successful completion of the Project includes AMI Network Infrastructure Equipment, AMI back-office software systems, legacy first-generation Smart Meters, ADMS, first-generation DERMs platform, utility infrastructure, customer HVAC systems, and customer DERS. New equipment requested as part of the Project includes:

Table 14 New Project Equipment

Proposed Equipment		Justification
Element 1	Edge Computing Sensors with Measurement Capabilities	Hardware required to enable DI at the Grid Edge
	DI Applications	Software required to enable DI at the Grid Edge.
Element 2	DERMS Functionality Software	Software required to enable Advanced DERMS
	Fiber Optic Cable	Infrastructure required to enable Advanced DERMS and improve DA network communication.
Element 3	OMS	Software platform Required to enable OMS Modernization and enhanced features.
	DA Network Devices	Devices required to improve DA network performance to support OMS Modernization.
Element 4	Load Control Switches	Hardware required to enable Intelligent 2-way load control switch demand response program.

4.2 Technical Services to be Provided by DOE/NNSA FFRDCs

The Project does not anticipate engaging technical services from any of the DOE/NNSA FFRDCs.

Locations of Work (DE-FOA-0002740)				
Prime or Sub	**Name**	**City**	**State**	**Zip Code + 4**
Prime	Sacramento Municipal Utility District	Sacramento	California	95817-1816
Sub	Wilton Rancheria	Elk Grove	California	95624-2453

Clean Connected PowerCity

Grid Resilience and Innovation Partnership (GRIP)

DE-FOA-0002740

COMMUNITY PARTNERSHIP DOCUMENTATION

SMUD
SACRAMENTO MUNICIPAL UTILITY DISTRICT
The Power To Do More.®

P.O. Box 15830, Sacramento, CA 95852-1830; 1-888-742-SMUD (7683)

September 23, 2011
LR 11-023

Samuel A. Glero
Business Representative
IBEW Local 1245
30 Orange Tree Circle
Vacaville, CA 95696

Subject: Letter Agreement up dating our IBEW Hiring Hall Agreement

You and I met to review the current Local 1245 Hiring Hall Agreement dated, April 19, 2001. We found a need to make a few changes to the Agreement. Attached is an updated Hiring Hall Agreement with the change to which we have agreed.

This Agreement supersedes IBEW Local 1245 Hiring Hall Agreement dated, April 19, 2001.

If this reflects your understanding of the agreement, please so indicate by signing in the space provided below.

Sincerely,

Zane Maddox
Senior Labor Relations Analyst

Agreed:

Samuel A. Glero
Business Representative

9/23/2011
Date

Approved:

Tom Dalzell
Business Manager

9/23/2011
Date

Attachment

SUPPLEMENTAL SIDE LETTERS OF AGREEMENT

The parties have agreed that the following Letter Agreements shall remain in effect for the term of this MOU or until such time as the provisions or term of the individual Letter Agreement are satisfied:

August 30, 1999 – Subject: Classification and Pay Studies setting forth procedures for an employee who wishes to request a classification and pay study of their desk. May 28, 2010 – Subject: Contact Center Bidding Process, LR 10-022.

March 8, 2012 – Subject: Personal Computer Purchase Plan, LR 12-017.

November 14, 2012 – Subject: Contact Center – Voluntary Time Off (VTO), LR 12-042.

November 21, 2012 – Subject: Contact Center – Vacation Bid, LR 12-043.

November 27, 2012 – Subject: Contact Center – Distribution of Overtime, LR 12-045.

October 1, 2013 – Subject: Field Services Credit and Collections' Vacation Scheduling Process, LR 13-031.

October 7, 2013 – Subject: Customer Operations' Vacation Scheduling Process, LR 13-035.

March 4, 2015 (revised) – Subject: Contact Center Customer Service Representative (CSR) Progression, LR 15-007.

October 13, 2017 – Subject: Change to Retiree COLA and Enhancement to the Survivor Continuance Benefit, LR 17-021 (combines LR 13-006A & LR 14-002 {not executed}).

May 19, 2020 – Subject: Side Letter Agreement – Impacts of Discipline for Nondiscrimination Policy Violations, LR 20-008.

June 15, 2021 – Subject: Side Letter Agreement – Engineering Designer Apprenticeship, LR 21-003.

November 16, 2021 – Subject: Side Letter Agreement – Engineering Designer Progression, LR 21-012

Dated: 12/9/2021

Organization of SMUD Employees

By: _____
Timothy K. Talbot
Lead Negotiator

Sacramento Municipal Utility District

By: _____
Cheryl Spector
Lead Negotiator

OSE Team Members:

_____
Danette Shipley

_____
Aaron Cager

_____
Tamara Hill

_____
Jennifer Harris-Evans

_____
Randal Edwards

_____
Kevin Lopez

SMUD Team Members:

_____
Jennifer Dibble

_____
Charles Alford

_____
Jenna Lesch

_____
Lisa Limcaco

_____
Christopher Martin

Approved as to form:

_____
Laura Lewis
General Counsel

Approved:

_____
Paul Lau
General Manager & CEO

Ann Edwards
County Executive

David Villanueva
Administrative Services

County of Sacramento

John Lundgren
Sustainability Manager

Mrs. Maria Duaime Robinson
Director, Grid Deployment Office
U.S. Department of Energy
1000 Independence Ave., SW
Washington, D.C. 20585

March 3, 2023

RE: Letter of Support for the SMUD Proposal to the Grid Resilience and Innovation Partnerships (GRIP) Program

Dear Mrs. Robinson,

The County of Sacramento, CA is pleased to support SMUD in its application to the Department of Energy's GRIP Program (DE-FOA-0002740). SMUD, Itron, Inc., OSI and Wilton Rancheria will deploy a multi-faceted, resiliency- and equity-focused smart grid advancement and deployment project that will provide a highly replicable, scalable foundation for modernizing SMUD's electricity grid.

The County of Sacramento and SMUD have long standing partnerships across our community. As the County's Sustainability Manger and representing the County Executive's Office, I work directly with SMUD leadership across several initiatives including equitable building electrification, clean energy, GHG reduction, work force development, resiliency, adaptation, emergency response, and community outreach and education. SMUD has the track record and organizational character to utilize DOE funding wisely and leverage it in ways that will increase the reach and effectiveness of the project across our community.

If you have any questions about Sacramento County's support for the project, please contact me at (916) 874-8043 or lundgrenj@saccounty.gov.

Sincerely,

John Lundgren
Sustainability Manager

City of
SACRAMENTO
Office of the City Manager

Ryan Moore
Assistant City Manager

City Hall
915 I Street, Fifth Floor
Sacramento, CA 95814-2604
916-808-6629

March 9, 2023

Mrs. Maria Duaime Robinson
Director, Grid Deployment Office
U.S. Department of Energy
1000 Independence Ave., SW
Washington, D.C. 20585

RE: LETTER OF SUPPORT FOR THE SMUD PROPOSAL TO THE GRID RESILIENCE AND INNOVATION PARTNERSHIPS (GRIP) PROGRAM

Dear Mrs. Robinson,

The City of Sacramento is pleased to support SMUD in its application to the Department of Energy's DE-FOA- 0002740. SMUD, Itron, Inc., OSI and Wilton Rancheria will deploy a multi-faceted, resiliency- and equity-focused smart grid advancement and deployment project that will provide a highly replicable, scalable foundation for modernizing SMUD's electricity grid.

CONNECTED CLEAN POWERCITY's goal is to enable the zero-carbon grid of the future by deploying technologies and processes that improve service reliability, support core community benefits, provide equitable energy access to all, and at a best-in-class cost. The Project includes six core elements to provide an ecosystem of intelligence that can manage the grid more effectively than the traditional top-down methodology of visibility and control. This more effective grid management approach can be replicated at scale at other utilities across the county.

The City of Sacramento and SMUD have a long history of collaborative partnership for decarbonization that supports vulnerable communities. Together, the City and SMUD recently secured a $350,000 TECH Quick Start grant for the Home Energy Equity Pilot, to provide electric heat pumps for at least 25 low-income households in conjunction with the City's home stabilization and rehabilitation investments. SMUD is a partner on the City's EV Blueprint Phase 2 project, to deploy EV chargers at 13 community centers and libraries in historically low-income and front-line communities. In addition, the City was one of SMUD's first institutional customers in the SolarShares community solar program to obtain power from 12.9 megawatts of offsite solar photovoltaics, equivalent to approximately 35% of the City's electricity use. Our organizations work closely together on building electrification, as outlined in our inter-agency Memorandum of Understanding for building electrification together with Sacramento County. We attest to SMUD's regional leadership, as well as their ability to deliver ambitious community-focused decarbonization initiatives.

If you have any questions about the City of Sacramento's support, please contact the City's Climate Action Lead, Jennifer Venema (JVenema@cityofsacramento.org or 916-808-1859).

Sincerely,

Ryan Moore, Assistant City Manager

CITY MANAGERS DEPARTMENT

8401 Laguna Palms Way
Elk Grove, California 95758

Phone: 916.683.7111
Fax: 916.691.3168

Web: www.elkgrovecity.org

CITY OF ELK GROVE
PROUD HERITAGE. BRIGHT FUTURE.

Mrs. Maria Duaime Robinson
Director, Grid Deployment Office
U.S. Department of Energy
1000 Independence Ave., SW
Washington, D.C. 20585

March 6, 2023

RE: Letter of Support for the SMUD Proposal to the Grid Resilience and Innovation Partnerships (GRIP) Program

Dear Mrs. Robinson,

The City of Elk Grove is pleased to support SMUD in its application to the Department of Energy's DE-FOA- 0002740. SMUD, Itron, Inc., OSI and Wilton Rancheria will deploy a multi-faceted, resiliency- and equity-focused smart grid advancement and deployment project that will provide a highly replicable, scalable foundation for modernizing SMUD's electricity grid.

CONNECTED CLEAN POWERCITY's goal is to enable the zero-carbon grid of the future by deploying technologies and processes that improve service reliability, support core community benefits, provide equitable energy access to all, and at a best-in-class cost. The Project includes six core elements to provide an ecosystem of intelligence that can manage the grid more effectively than the traditional top-down methodology of visibility and control. This more effective grid management approach can be replicated at scale at other utilities across the county.

The City of Elk Grove and SMUD have a long and successful history as collaborative partners. In addition to working closely on local development projects, SMUD has been a strong partner working on climate change, sustainability and resiliency programs. We are both signatories on a regional Memorandum of Understanding to support increased coordination on building electrification, and SMUD has worked closely with the City on climate mitigation and adaptation efforts.

If you have any questions about Elk Grove's support for the project, please contact me at 916.627.3423 or jbehrmann@elkgrovecity.org.

Sincerely,

Jason Behrmann, City Manager

March 15, 2023

Maria Duaime Robinson, Director
Grid Deployment Office
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585

Letter of Support for the Sacramento Municipal Utility District (SMUD) Proposal to the Grid Resilience and Innovation Partnerships (GRIP) Program

Dear Maria Duaime Robinson:

The California Energy Commission (CEC) is pleased to offer this letter of intended support to SMUD in its application to the Department of Energy's Grid Resilience and Innovation Partnerships (GRIP) funding opportunity, DE-FOA-0002740. SMUD and its project partners will deploy a multifaceted, resiliency- and equity-focused smart grid advancement and deployment project that will provide a highly replicable, scalable foundation for modernizing SMUD's electricity grid.

The goal of the Connected Clean Powercity project is to enable the zero-carbon grid of the future by deploying technologies and processes that improve service reliability, support core community benefits, and provide equitable energy access to all at a best-in-class cost. The project includes six core elements that provide an ecosystem of intelligence that can manage the grid more effectively than the traditional top-down method of visibility and control. More effective grid management approaches such as this can be easily replicated.

As the state's primary energy policy and planning agency, the CEC is committed to providing 100 percent of electricity retail sales from renewable and zero-carbon resources by 2045 and ensuring that the benefits of reliable, cleaner, and more efficient energy are shared by all. To achieve California's clean energy goals, it is critical to advance grid management to enhance grid reliability and resilience. SMUD interacts with the CEC on many activities, including resource planning, load management, generation and storage siting, and transportation and building electrification. The next generation technology supported by this grant will accelerate SMUD's ability to leverage intelligence and data to manage distributed energy resources and advance the State's goals.

We appreciate the opportunity to support SMUD on this promising initiative to accelerate the development of a smarter electric grid.

Sincerely,

Angela Gould

Angela Gould
Deputy Director
Energy Research and Development Division

cc: Harrison Reynolds
Alex, Horangic
Kevin Uy
Jennifer Martin-Gallardo

Northern California Construction Training

Mrs. Maria Duaime Robinson
Director, Grid Deployment Office
U.S. Department of Energy
1000 Independence Ave., SW
Washington, D.C. 20585

March 13, 2023

RE: Community Partnership Documentation for the SMUD Proposal to the Grid Resilience and Innovation Partnerships (GRIP) Program

Dear Mrs. Robinson,

NCCT is pleased to partner with SMUD in its application to the Department of Energy's DE-FOA- 0002740. **Connected Clean PowerCity** will deploy a multi-faceted, resiliency- and equity-focused smart grid advancement and deployment project that will provide a highly replicable, scalable foundation for modernizing SMUD's electricity grid.

NCCT is a Pre-Apprenticeship Construction Training Program that provides training opportunities to populations of disadvantaged, underserved, unemployed and justice-involved individuals. Upon completion of training, students are placed into positions providing gainful employment, directly impacting reduction of homelessness and recidivism. NCCT has worked with SMUD for over 10 years on multiple projects. The support that SMUD gives to NCCT helps increase the lives we can change.

As a community partner, NCCT provides an entry-level electrification training program that provides individuals from under-resourced communities with the technical and soft skills to secure high wage jobs in the electrician industry. NCCT employs IBEW instructors to teach its training class, and NCCT and the IBEW encourage and help graduates to become registered IBEW apprentices. This is the model that NCCT will bring directly to the Wilton Rancheria community, expanding access by offering its electrician training program within the community itself. that places individuals into employment.

If you have any questions about NCCT's partnership with SMUD, please contact me at 916-387-1564 or TamiA@ncctinc.org.

Sincerely,

Tami Anckner, Chief Administrative Officer

P.O. Box 293585, Sacramento CA 95829-3585 • 10411 Old Placerville Rd., Suite 205 Sacramento, CA 95827
Telephone (916) 387-1564 Fax (916) 387-1581 • www.ncct.ws
A non-profit community-based organization.

COSUMNES RIVER COLLEGE
PRESIDENT'S OFFICE
8401 Center Parkway | Sacramento, CA | 95823-5704
Phone: 916.691.7321
www.crc.losrios.edu

Mrs. Maria Duaime Robinson
Director, Grid Deployment Office
U.S. Department of Energy
1000 Independence Ave., SW
Washington, D.C. 20585

March 7, 2023

RE: Community Partnership Documentation for the SMUD Proposal to the Grid Resilience and Innovation Partnerships (GRIP) Program

Dear Mrs. Robinson,

Cosumnes River College is pleased to support SMUD in its application to the Department of Energy's DE-FOA- 0002740. **Connected Clean PowerCity** will deploy a multi-faceted, resiliency- and equity-focused smart grid advancement and deployment project that will provide a highly replicable, scalable foundation for modernizing SMUD's electricity grid.

Located in South Sacramento, Cosumnes River College (CRC) is a student-centered, open-access community college dedicated to preparing students for an ever-changing future. CRC courses and programs empower our diverse students to earn certificates or degrees, transfer to other educational institutions, or attain other lifelong academic or career aspirations. One of the four colleges in the Los Rios Community College District (Los Rios), CRC's culture builds upon a foundation of respect, compassion, civil discourse, and shared decision making. CRC deeply values academic integrity, cultural competence, equity, social justice, innovation, and sustainability. SMUD's partnership with CRC is truly special and unique; we have the shared goal to enhance the quality of life or our community through innovative energy solutions. To this end, SMUD has partnered with Los Rios since 1997 and CRC since 2011 to provide funding and support to innovative programs like the Tiny House Village. The Tiny House Village is a collaborative effort partially funded by Prop 39 and a SMUD Shine award to provide students in our Architecture, Architectural Design, Construction, and Horticulture programs the opportunity to design and construct a Tiny House Village with sustainable irrigation and landscaping. This project will not only benefit the students involved now, but it will involve students in the coming years who will complete the project. It will then involve students who will sustain the project in perpetuity by continually upgrading the technology and building new tiny houses which will impact thousands of students. This is just one of many collaborations that has made CRC a destination for students and community members to enroll in construction and solar classes.

As a community partner, Cosumnes River College is delivering a new three-unit course at CRC to provide under-resourced communities with the skillset and access to be a part of the construction electrification workforce. This new course is specifically designed to be accessible to those individuals experiencing economic, educational, social, or other barriers to joining the workforce. Supporting services like stipends, career counseling, social services and more will lower the barriers for members of the Wilton Rancheria Tribe, as well as other local community members, so that they can benefit from the employment and training opportunities this project will create.

If you have any questions about Cosumnes River College's partnership with SMUD, please contact us at BushE@crc.losrios.edu or MishraA@crc.losrios.edu.

Sincerely,

Edward C. Bush

Edward C. Bush, Ph.D.
President, Cosumnes River College
8401 Center Parkway
Sacramento, CA 95823

Sincerely,

A Mishra

Ashu Mishra
Dean, CRC Elk Grove Center
Dean, Automotive, Construction, Design Tech

March 7, 2023

Mrs. Maria Duaime Robinson
Director, Grid Deployment Office
U.S. Department of Energy
1000 Independence Ave., SW
Washington, D.C. 20585

RE: Community Partnership Documentation for the SMUD Proposal to the Grid Resilience and Innovation Partnerships (GRIP) Program

Dear Mrs. Robinson:

GRID Alternatives North Valley is pleased to support SMUD in their application to the Department of Energy's DE-FOA-0002740 mechanism. **Connected Clean PowerCity** will deploy a multi-faceted, resiliency- and equity-focused smart grid advancement and deployment project that will provide a highly replicable, scalable foundation for modernizing SMUD's electricity grid.

GRID Alternatives North Valley (GRID) is a 501(c)(3) nonprofit organization with the mission to build community-powered solutions to advance economic and environmental justice through renewable energy. GRID envisions a rapid, equitable transition to a world powered by renewable energy that benefits everyone. As the nation's largest nonprofit solar installer, GRID partners with affordable housing organizations, job training groups, government agencies, municipalities, utilities, and local communities to make solar and renewable energy technology a win for everyone. Through our unique, people-first model, we are putting money back into families' pockets, reducing the energy cost burden for housing providers, and jumpstarting well-paying clean energy careers.

Since our inception, we've served over 2,000 households in Northern California with over $56 million in immediate and long-term solar savings, preventing over 120,000 tons of greenhouse gas (GHG) emissions. Additionally, our solar Installation Basics Training 200 (IBT 200) program has graduated over 200 trainees and launched dozens of clean energy careers, growing year over year. IBT 200 is a solar + electrification training program, including electric vehicle supply equipment (EVSE) installation and home electrification education. We have partnered with SMUD to make the IBT 200 program available to trainees in our region for the past three years. This partnership allows us to not only offer this comprehensive course for free, but also to provide stipends and other wrap-around services that create equitable access for participants from our most under-resourced communities.

SMUD's Connected Clean PowerCity project is an important part of our region's commitment to equitable decarbonization. As a community partnership, it will help GRID to better engage communities like Wilton Rancheria. As a model for future efforts, it will demonstrate best practices in marrying grid modernization, workforce development programs, and community engagement.

We are offering our strongest support for this proposal and thank you for considering it for funding support. If you have any questions about GRID Alternatives North Valley's partnership with SMUD, please contact me at 916-620-9809 or slrichardson@gridalternatives.org.

Sincerely,

DocuSigned by:
Staci Richardson
A0EB1C0D2EF84B1...

Staci Richardson
Executive Director
GRID Alternatives North Valley

PROJECT DESCRIPTION AND ASSURANCES DOCUMENT TEMPLATE (PDAD)

Project title: Connected Clean PowerCity

Applicant Name: Sacramento Municipal Utility District

Applicant Address: 6201 S Street, Sacramento CA 95817-1818

Names of all team member organizations (if applicable): Wilton Rancheria

Principal Investigator: Katarina Miletijev, 916 732 6235, katarina.miletijev@smud.org

Business Point of Contact: Hieu Nguyen, 916 732 5358, hieu.nguyen@smud.org

Include any statements regarding confidentiality. N/A

Federal Share: $50,000,000
Cost Share: $106,164,172
Total Estimated Project Cost: $156,164,172

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: Lora Anguay

Address: 6201 S Street Sacramento, CA 95817-1818

Phone: 916 732 5870

E-mail: lora.anguay@smud.org

Item 8: Signature of Authorized Organizational Representative (AOR)

Community Benefits Plan: Job Quality and Equity

The Connected Clean PowerCity Project Team created an initial Community Benefits Plan (CBP) to guide successful Project Implementation. The CBP will facilitate two-way stakeholder engagement and create lasting community benefits that flow to disadvantaged communities (DACs). SMUD will incorporate lessons learned from its ongoing efforts to advance energy and environmental justice, Diversity, Equity Inclusion Accessibility (DEIA), community and labor engagement, and quality jobs.

To support its Specific, Measurable, Assignable, Realistic, and Time-Related (SMART) Milestones, SMUD will provide CBP interim reports (CBP IRs) at the end of Budget Periods 1-4. The Interim CBP IRs will detail the CBP's milestone progress to date and any updates to the Plan based on stakeholder engagement and lessons learned. The Project's Final Report will include a Final CBP Report.

1 Community and Labor Engagement

SMUD actively and inclusively engages with the local community and labor force throughout project design, implementation, and completion. By facilitating community input and buy-in and strengthening accountability, SMUD ensures stakeholders have a voice in decision-making, mitigates project risks, and socializes project benefits. SMUD will leverage existing community advisory committees, technical advisory committees (quarterly meetings), and multi-channel and multi-language campaigns to facilitate and report on stakeholder engagement. The Project Team will work with the SMUD's stakeholder engagement professional to publicly communicate and share its Community Benefits Plan and SMART commitments.

For accountability, SMUD has established precise mechanisms to measure, monitor, and evaluate the direct impacts of its programs and services. Specifically, SMUD completes quarterly and annual internal reviews of its progress against all relevant community and workforce-targeted metrics. Under the Project, SMUD will leverage this accountability process to report to DOE regarding progress made against proposed community and workforce benefits, at least annually.

1.1 Existing Engagements & Stakeholder Identification

The Project Team views community relationships as integral to the success of the Connected Clean PowerCity Project. Figure 2 identifies the relevant tribal, union, government, and workforce development stakeholders SMUD engages. The Project has received Community Partnership Documents from the organizations in yellow. An asterisk follows educational entities

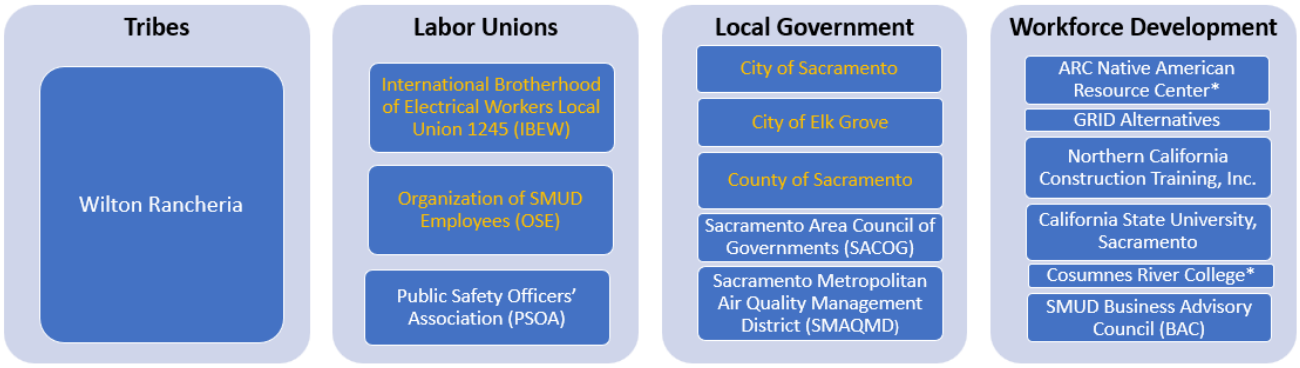


Figure 1. Identified Stakeholders

categorized as Minority-Serving Institutions (MSIs). Additional stakeholder identification and engagement will be an aspect of Project efforts to collect community input.

In 2022, in collaboration with community-based organizations, SMUD co-developed the **Community Impact Strategy**, a practical, implementation-ready plan intended to increase energy equity outcomes. The Community Impact Strategy seeks to address the past and current energy inequities within the Sacramento community. As part of the Project, the three-year strategy will result in implementation-ready strategies intended to increase energy equity outcomes on SMUD's road to 100% clean energy.

1.2 Workforce & Community Agreements

SMUD has negotiated and participates in formal benefits agreements with stakeholders relevant to the Connected Clean PowerCity Project. The Project Team believes Workforce and Community Agreements are vital to producing high-quality jobs, minimizing environmental impacts, and allocating Project benefits to DACs. Throughout the Project, SMUD will work with the local community and labor force to identify if additional agreements would support successful implementation and bolster community benefits.

1.2.1 Labor Agreements

In 2022, SMUD successfully reached agreements for successor 4-year labor contracts with the **International Brotherhood of Electrical Workers (IBEW) Local 1245** and the **Organization of SMUD Employees (OSE)**; both Memorandums of Understanding (MOUs) will be in place through December 31, 2025. Additionally, SMUD negotiated a successor MOU with the **Public Safety Officers' Association (PSOA)** that will be in place through December 31, 2026. The agreements promote harmonious labor relations and establish and maintain fair wages, hours, and other terms and conditions of employment.

1.2.2 Service Agreements

SMUD developed a 3-party building electrification Memorandum of Understanding (MOU) with the **City and the County of Sacramento** that demonstrates the mutual goal of regional collaboration.

SMUD has a multi-year service level agreement with **Wilton Rancheria** for Tribal cultural resource monitoring on construction projects. The agreement is a pilot for SMUD's model to formally consult with all local Tribes for and beyond CEQA and CA Assembly Bill 52 (AB 52).

1.2.3 Workforce Development Agreements

SMUD has agreements with **GRID Alternatives North Valley**, the **Northern California Construction Training, Inc. (NCCT)**, the **IBEW**, the **California Mobility Center**, and the Los Rios Community College District at **Consumnes River College** to provide training and workforce development opportunities. Most programs are tailored to serve DACs and populations facing barriers to employment. Trainings focus on operational and construction electrification skills and provide compensation or support for participation. Graduates are connected with entry-level employment opportunities and complete relevant certifications or course credits that can be applied to a pre-apprenticeship or credential.

Through its **Joint Apprenticeship Program**, SMUD has several pre-apprentice and apprenticeship opportunities approved by the California Department of Industrial Relations' Division of

Apprenticeship Standards. The program covers thirteen occupations. SMUD also has local and targeted hiring and training goals via its **Energy Career Pathways Program** and **Powering Careers Program**. In partnership with local leaders, SMUD brings clean energy jobs training to DACs.

Wilton Rancheria and SMUD are developing a labor agreement establishing a model for utility employment pathways for Tribes. Throughout the Project, SMUD and Wilton Rancheria will work together to design a program supporting workforce development and employment opportunities.

1.3 Community & Labor Engagement Goals & Milestones

Leveraging its existing stakeholder network, engagement mechanisms, and community experts, SMUD will actively collaborate with the local community and labor force to meet Community and Labor Engagement (CLE) goals and milestones. In addition to sharing its overall CBP and milestone commitments, the Project has three CLE goals:

1. **CLE Goal 1: Facilitate Two-Way Community Engagement**
2. **CLE Goal 2: Facilitate Two-Way Labor Engagement**
3. **CLE Goal 3: Leverage Community & Labor Agreements**

Table 1. CLE Goals & Milestones

Goal	SMART Milestone	Target	Metrics
CLE Goal 1: Facilitate Two-Way Community Engagement	CLE Milestone 1.1: Identify Community Stakeholders & engagement methods	Q2 2024	• # stakeholders involved in identification, % from DACs, MSIs, DBEs, or other historically marginalized groups • # stakeholders identified, % serving DACs, MSIs, DBEs, or other historically marginalized groups • # mechanisms identified, # accessibility considerations (translators, ADA accessible facilities, childcare, food)
	CLE Milestone 1.2: Create Community Engagement Materials/ Mechanisms	Q1 2025	• # mechanisms created, # considerations implemented for accessibility (translators, ADA accessible facilities, childcare, food) • # rounds of review, # reviewers by stakeholder group, % from DACs, MSIs, DBEs, or other historically marginalized groups
	CLE Milestone 1.3: Engage Community Stakeholders	Q4 2028	• #mechanisms employed for engagement (meetings, surveys, flyers), # of engagement rounds • # participants, % from DACs, MSIs, DBEs, or other historically marginalized groups • # % of feedback reviewed by the project team, % incorporated into Project • $ spent on engagement in DACs
CLE Goal 2: Facilitate Two-Way Labor Engagement	CLE Milestone 2.1: Identify Labor Stakeholders	Q2 2024	• # partners involved in identification, % from DACs, MSIs, or DBEs • # stakeholders identified, % serving DACs, MSIs, DBEs, or other historically marginalized groups • # mechanisms identified, # considerations made for accessibility (translators, ADA accessible facilities, childcare, food)
	CLE Milestone 2.2: Create Labor Engagement Materials	Q1 2025	• # mechanisms created, # considerations implemented for accessibility (translators, ADA accessible facilities, childcare, food) • # rounds of review, # reviewers by stakeholder group, % from DACs, MSIs, DBEs, or other historically marginalized groups
	CLE Milestone 2.3: Engage with Labor Stakeholders	Q4 2028	• # engagement sessions • # participants, % from DACs, MSIs, DBEs, or other historically marginalized groups

			• # mechanisms employed for engagement (meetings, surveys, flyers) • % of feedback incorporated into Project • $ spent on engagement in DACs
CLE Goal 3: Leverage Community & Labor Agreements	CLE Milestone 3.1: Identify potential and relevant Agreements	Q3 2025	• # partners involved in identification, % from DACs, MSIs, or DBEs • # agreements identified, % existing partners, % new partners
	CLE Milestone 3.2: Develop a Community & Labor Agreement with Wilton Rancheria	Q4 2028	• # engagements to develop Plan • # commitments made regarding hiring & training • $ committed to agreement
	CLE Milestone 3.3: Develop additional relevant Community & Labor Agreements	Q4 2028	• # workforce agreement, # partners, # commitments to employing from local DACs • # community agreements, # partners, % with DACs or DAC-serving orgs, DBEs, or MSIs • $ committed to agreements

The Community and Labor Engagement goals (CLE Goal 1,2,3) will include an estimated 2,316 hours of staff time from SMUD's tribal liaison, DEIA lead, and workforce development coordinator (~$586,000), to implement community stakeholder identification, engagement, and related activities.

2 Investing in American Workforce

A robust workforce development strategy is required to help close disparity gaps and train zero carbon professionals by building local job pipelines and providing DACs with clear pathways and direct access. To this end, SMUD is highly invested in partnering with respected community-based organizations, labor unions, and educational institutions to address workforce disparity gaps for historically under-resourced communities.

2.1 Project Staffing

Connected Clean PowerCity Project requires the deployment of multiple grid edge technologies including edge computing sensors, load control switches, and fiber. Project efforts will require meter, load control switch and fiber installers and support internal to Wilton Rancheria.

The Project Team has developed a plan to attract, train, and retain a skilled and well-qualified workforce for construction and ongoing operations. Backed by existing labor agreements with IBEW OSE, and PSOA, SMUD's current labor force will implement the Project, supported by Wilton Rancheria.

If necessary to provide a qualified and continuous workforce, an RFP will be issued to source contractors. The Project Team will offer extra incentives to recruit and hire local contractors that leverage and source labor from SMUD's training initiatives. Using these incentives, community members looking to participate in the new energy economy will have more equitable access to employment opportunities, with initial projects serving to some extent as extended, paid interviews.

SMUD will also prioritize contracting small businesses through its Supplier Education and Economic Development (SEED) Program. Preference will be given to Disadvantaged Business Enterprises (DBEs), Minority Business Enterprises (MBEs) Minority-Owned Business (MOBs),

Women-Owned Businesses (WOBs) and Veteran-Owned Businesses (VOBs).

2.2 Employment Practices

2.2.1 Violations Disclosures

SMUD has not violated the National Labor Relations Act, Fair Labor Standards Act, Service Contract Act, Davis-Bacon Act, or Title VII of the Civil Rights over the past two years. SMUD was issued one general citation from the California Division of Occupational Safety and Health (Cal-OSHA). SMUD addressed the concerns of Cal-OSHA and consciously retrained all relevant employees on proper techniques associated with the violation. Cal-OSHA did not ask for additional steps from SMUD.

2.2.2 Workforce Organization

SMUD ensures workers have free and fair right to workplace organizing and union representation. SMUD's culture recognizes the importance of union and labor organizations and provides meaningful resources to support individual and collective voices. Of three active labor unions currently representing employees, one was formed at SMUD and supported through its emergence and execution. In addition to the union labor agreements in Workforce & Community Agreements, SMUD permits voluntary recognition, provides union organizers access to employer property and workers, and commits to remaining neutral in union organizing drives.

2.3 Workforce Retention and Development

2.3.1 Supporting the Existing Labor Force

SMUD is committed to workforce continuity and providing paid development opportunities for every level of their existing workforce. Employee benefits packages also include competitive pay, health care, income protection, and retirement plans. In addition to publishing its wage schedules for compensation transparency, SMUD shares the percentage of employees by gender, race, and role. More information on retention and development opportunities is available in the DEIA Section.

These efforts result in an average employee tenure of over 10 years. The employee turnover rate in 2021 was 7.7%, below the 13.1% industry benchmark. SMUD also achieved the highest recorded participation rate for its Employee Engagement Survey (91%) the same year.

2.3.2 Developing a Clean Energy Labor Force

In collaboration with a vast network of partners, SMUD will develop and execute a **Regional Workforce Development Strategic Plan (RWDSP)**, training at least 3,000 people to position them for clean energy and other economic opportunities and facilitating the employment of at least 1,000 people in high paying jobs by 2024. This coherent strategy will galvanize and prepare the region for an inclusive, diverse, creative, and empowered future workforce.

SMUD will leverage its existing workforce development agreements, programs, and relationships (mentioned in Community & Labor Engagement) throughout the Project to support the development of a clean energy labor force. The Project Team will attempt to engage various elements of the labor supply chain via pre-apprentice and apprenticeship programs, internships, informational sessions, and mentorship opportunities. SMUD will continue to promote participation from historically marginalized groups, disadvantaged communities, and groups

underrepresented in STEM or facing barriers to employment. SMUD will also prioritize the inclusion of Wilton Rancheria.

2.4 Investing in the American Workforce Goals & Milestones

SMUD will invest in the American workforce through existing efforts and support quality jobs throughout the Project. The Project will monitor the progress of the following goals in conjunction with SMUD's broader targets:

1. **QJ Goal 1: Supply Qualified and Continuous Project Labor**
2. **QJ Goal 2: Facilitate a Safe, Engaging, and Just Workplace**
3. **QJ Goal 3: Develop the Local Clean Energy Workforce**

Table 2. QJ Goals & Milestones

Goals	SMART Milestone	Target Date	Metrics
QJ Goal 1: Supply Qualified and Continuous Project Labor	QJ Milestone 1.1: Leverage existing agreements and relationships to complete construction	Q4 2026	• # labor sources: % from training programs, % underrepresented businesses, % with labor agreements, $ of incentives provided • # labor disputes: # hours in delay
	QJ Milestone 1.2: Integrate training and workforce development into Project efforts	Q4 2026	• # training programs as labor source • # participants trained from target communities • # of people hired from target communities
QJ Goal 2: Facilitate a Safe, Engaging, and Just Workplace	QJ Milestone 2.1: Comply with safety regulations	Q4 2028	• # safety trainings • # safety violations
	QJ Milestone 2.2: Provide fair wages	Q4 2028	• # jobs above minimum wage, % of Project jobs
	QJ Milestone 2.3: Partner with labor unions to support employees	Q1 2028	• % employees registered w/ unions • # unions representing employees • # labor agreements
	QJ Milestone 2.4: Encourage participation in professional development opportunities for existing staff	Q4 2028	• # employee professional development programs • # employee participants, % of employees, % form under-represented groups • $ allocated
QJ Goal 3: Develop the Local Clean Energy Workforce	QJ Milestone 3.1: Promote local participation in SMUD-supported training opportunities	Q1 2024	• #mechanisms employed for under-resourced participant engagement (community partner communications, job fairs, flyers/collateral) • $ value of SMUD investment in outreach
	QJ Milestone 3.2: Begin Developing training modules with partners	Q3 2024	• # of regional workforce development partnership agreements • # partners, % serving DACs • # of trained/hired community members targeted in partnership agreements
	QJ Milestone 3.3: Develop RWDSP	Q4 2028	• # partners engaged • # programs identified
	QJ Milestone 3.4: Implement RWDSP	Q4 2028	• # participants • $ allocated

The Quality Jobs goals (QJ 1,2,3) will extend throughout the entire project timeframe and include an estimated 2,112 hours of staff time from SMUD's tribal liaison, DEIA lead, and workforce

development coordinator (~$535,000), to develop workforce curriculum and implement training and workforce programs in DACs.

3 DEIA

3.1 Initial DEIA Assessment

3.1.1 Demographic Assessment

SMUD has over 2,300 employees with average employee age 45. Veterans comprised 5.1% of SMUD's workforce in 2021, up from 4.8% in 2020.

Table 3. SMUD Employee Demographics by Role

Population	Male	Female	Caucasian	African American	Hispanic	Asian	Native American	2 or More Races
Executives	56%	44	56	22	0	22	0	0
Directors	68%	32	71	10	3	13	0	3
Managers	63	38	65	4	6	15	1	9
Supervisors	63	37	64	7	12	15	0	2
Staff	67	33	65	8	16	15	1	5
2021 SMUD Employees	66%	34	57	7	15	15	1	5
Sacramento County Workforce	52	48	48	9	22	17	0	4

3.1.2 Existing Policies & Resources

SMUD is committed to celebrating the diversity of its employees, suppliers, and communities. It strives to ensure an inclusive culture based on trust and respect to create belonging and connection among employees, customers, and communities the utility serves.

To promote equitable outcomes, SMUD has developed a Diversity, Equity, Inclusion, & Belonging (DEI&B) Strategy with four Focus Areas shown in Figure X. The strategy is supported by:

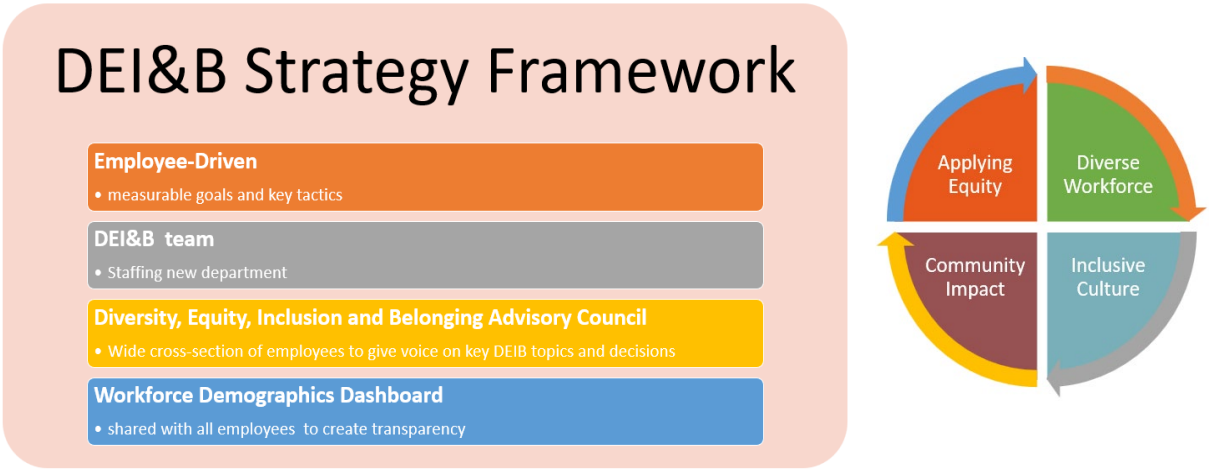


Figure 2. DEI&B Framework

SMUD also partnered with the American Leadership Forum to provide senior leaders learning and dialogue on implicit bias, equity, and their role in creating a culture of inclusion. SMUD provides continued unconscious bias training for interview panels, guidelines for hiring managers to improve the diversity of interview panels and pay equity analysis for all new hires. Talent

Management continues to partner with stakeholders - both internally at SMUD, as well as externally in the community - to drive interest and develop pipelines of qualified applicants.

The SEED (Supplier Education and Economic Development) program offers incentives to local small businesses that participate in SMUD's competitive bid process. It also helps prime contractors find local subcontractors, which gives their bids or proposals a competitive edge. SMUD awards $200-$300 million in contracts every year, $40-$60 million of which goes to SEED vendors and suppliers. The company's goal is to award 20% or more of all eligible contracts to SEED vendors.

SMUD has seven Employee Resource Groups (ERGs), representing women, Latinos, African Americans, Asian/Pacific Islanders, LGBTQ, parents, military/veterans, and young professionals. The groups provide SMUD's diverse workforce segments with support and mentoring from people with similar backgrounds. SMUD utilizes its ERGs to assist with a variety of business processes, providing opportunities for them to help build the talent pipeline by helping Human Resources with outreach. ERG members help with recruiting outreach at job fairs and schools and work with organizations such as the Sacramento Rainbow Chamber of Commerce, Tech Latino, Greater Sacramento Urban League, and the California Department of Veterans Affairs.

3.2 Project DEIA Goals & Milestones

To support the Project, SMUD will actively advance DEIA throughout its efforts. The Project Team will build upon existing efforts to realize the following goals:

1. **DEIA Goal 1: Advance SMUD DEIA Culture**
2. **DEIA Goal 2: Address Barriers to Quality Jobs**
3. **DEIA Goal 3: Partner with Under-represented Businesses**
4. **DEIA Goal 4: Equitably Disseminate Outcomes**

Table 4. DEIA Goals & Milestones

Goals	SMART Milestone	Target Date	Metrics
DEIA Goal 1: Advance SMUD DEIA Culture	DEIA Milestone 1.1: Provide additional bias training to the Project Team	Q3 2024	• # of project team members who complete 4 workshop series "American Indian Communities", including cultural humility and federal Indian policy sessions. • # of project team members to complete American Leadership Forum bias training • # training sessions • $ allocated
	DEIA Milestone 1.2: Track Project Team Demographics	Q4 2028	• # of underrepresented people on project team, % of project team
	DEIA Milestone 1.3: Develop Tribal Engagement Initiative	Q1 2026	• # engagement sessions • Deliver engagement plan • $ allocated to plan
DEIA Goal 2: Address Barriers to Quality Jobs	DEIA Milestone 2.1: Provide training opportunities to those facing barriers to employment	Q4 2028	• # of training programs, # trades • # of participants, demographics of participants • # interns from MSIs or DACs • $ allocated

	DEIA Milestone 2.2: Employ an equitable and diverse workforce	Q4 2028	• # people hired from training programs • # of people employed from underrepresented populations
DEIA Goal 3: Partner with Under-represented Businesses	DEIA Milestone 3.1: Identify underrepresented businesses	Q1 2025	• # of minority owned businesses /SEED vendors who are identified or apply to support the Project
	DEIA Milestone 3.2: Engage with underrepresented businesses	Q1 2027	• # of mechanisms employed for underrepresented business engagement (communications, business workshops, flyers/collateral) • # of minority owned businesses /SEED vendors who participate in Project • $ allocated
DEIA Goal 4: Equitably Disseminate Outcomes	DEIA Milestone 4.1: Share Lessons Learned with the labor force	Q4 2028	• # of DBEs, unions, and workforce development partners engaged, % from DACs • # engagements & mechanisms for engagement
	DEIA Milestone 4.2: Share Lessons Learned with MSIs	Q4 2028	• # MSIs engaged • # Mechanisms for engagement

The DEIA goals (DEIA 1,2,3,4) will extend throughout the entire project timeframe and include an estimated 2,172 hours of staff time from SMUD's tribal liaison, DEIA lead, and Economic Development/SEED team (~$550,000), for implementation of DEIA training, workforce training opportunities for DAC populations, and engagement of minority-owned businesses.

4 Justice40 Initiative

SMUD is committed to the just and equitable distribution of clean energy transition benefits and impacts across all communities throughout Sacramento.

Figure X shows SMUD service area in pink, with overlaps for disadvantaged (purple) and partially disadvantaged (blue) communities according to CEJST. The Project's initial demonstration will be located on the Wilton Rancheria's tribal land (black location marker). Additional site selection will prioritize DACs and low-income communities.

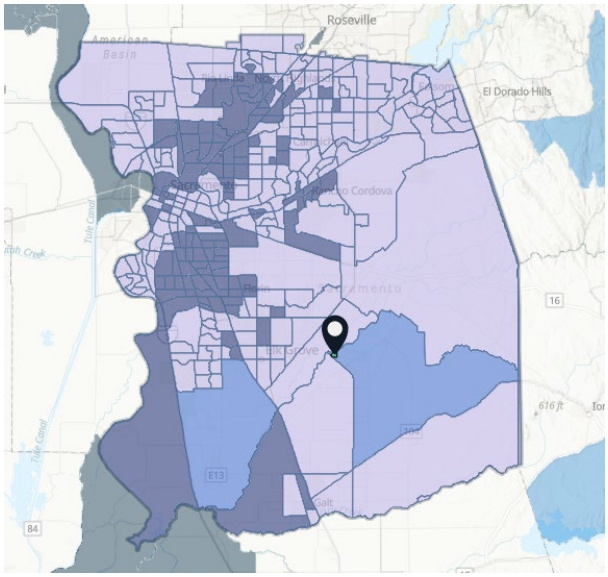


Figure 3. DACs in SMUD's Service Territory

4.1 Community Identification

4.1.1 Wilton Rancheria

With over 900 members in the Sacramento area, Wilton Rancheria is Sacramento County's only federally recognized Native American Tribe. The Tribe's Indigenous Territory encompasses the County, and its people were historically subject to military incursions, disease, slavery, and violence. In 1851, the Tribe's land was ceded to the US government with provisions to establish the Rancheria, a promise that was not fulfilled until 1928. In 1959, Wilton Rancheria was terminated under the Rancheria Act of 1958 and the Tribe lost its federal recognition in 1964.

In 1991, surviving members reorganized and worked to restore the Tribe's federal recognition, which was achieved in 2009. Today, the Rancheria is 38.5 acres in the Sacramento Valley along the Cosumnes River. The Tribe currently faces challenges with high unemployment, lack of health insurance, and limited access to its ancestors' history. Members are committed to achieving economic self-determination, cultural preservation, and community education.

4.1.2 SMUD's Service Territory

SMUD's service area is most of Sacramento County and small adjoining areas of Placer and Yolo counties in California. The service area is also home to the state Capitol and over 950,000 of the region's 2.4 million primarily urban residents (or 40%). The region is susceptible to energy disturbances (heat waves, fires, flooding) and increased energy burden while also serving as a critical location for statewide emergency response and evacuation.

A 2018 Brookings Institute Study found that between 2006 and 2016, the Sacramento region ranked in the bottom-third of the 100 largest metropolitan areas in economic growth and prosperity. SMUD's service area includes numerous DACs and two partially disadvantaged communities. The Sacramento County median income is $79,912. Almost 9.5% of families are below the poverty line and unemployment is 5.7%. Roughly 60% of residents over 25 lack a post-secondary degree. The County's population is over 52% White, roughly 17% Asian, 10% Black, 1% American Indian/Alaskan Native, 1% Native Hawaiian/Pacific Islander, and almost 19% another race or 2+ races.

4.2 Project Impacts

4.2.1 Anticipated Benefits

In 2021, SMUD embarked on a mission to reach zero carbon emissions in its power supply by 2030 without increasing relative costs to customers. In conjunction with SMUD's ongoing efforts, the Project Team is committed to producing benefits for the local community. Figure 4 shows the DOE's priority benefits that will stem from the Project and the strategies in place to achieve them.

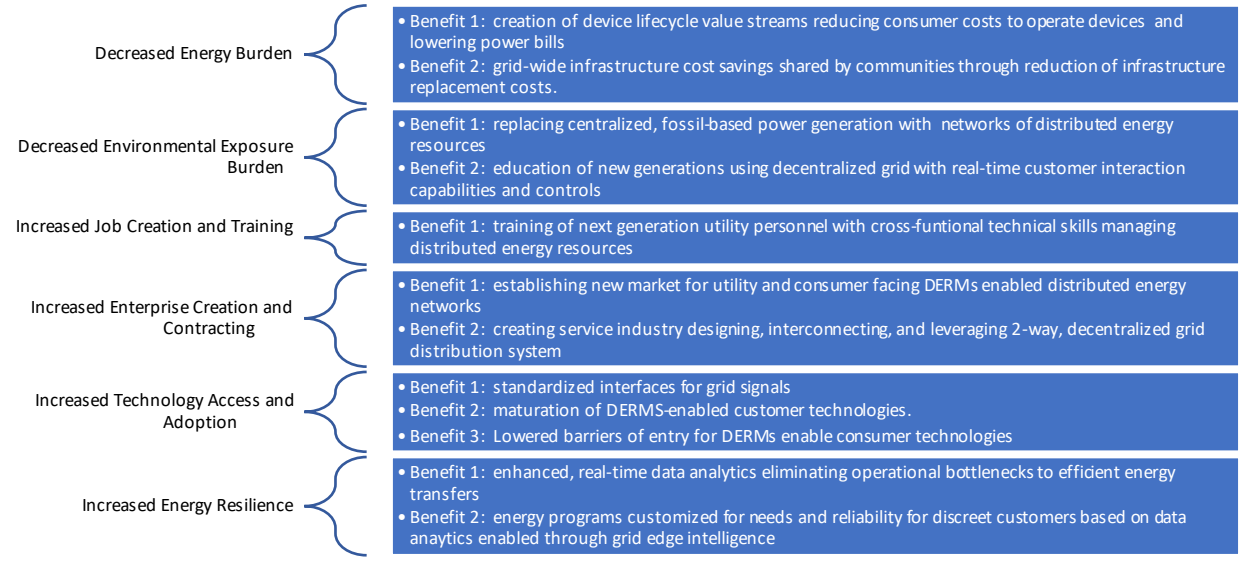


Figure 4. Project Benefits

At the Project's onset, SMUD will work with local stakeholders and partners to develop metrics to track benefits. Metrics will be reported to the DOE in the CBP IRs.

4.2.2 Anticipated Negative and Cumulative Environmental Impacts

SMUD commits to compliance with applicable state and federal environmental regulations and guidance and underpin efforts to avoid, mitigate, and remediate negative or cumulative environmental impacts. The Project will minimize new infrastructure installations by utilizing existing equipment siting wherever possible. SMUD proactively and consistently monitors air quality, water quality, hazardous materials management, and water engineering to ensure any deviations from environmentally responsible operation are identified and remediated in a science-based, data-driven approach. SMUD will measure, or stipulate from existing data, pre-project baselines and actively monitor these during construction, commissioning, and operation.

Project efforts will ensure human health is protected, access to natural resources is unimpeded, and local ecosystems are not put under further pressure. For this Project, there are no foreseen impacts to Tribal cultural resources and no anticipated changes to the community's access to natural resources. Project partners work closely with communities, stakeholders, and vendors to monitor potentially negative impacts and cumulative burdens.

4.2.3 Benefits Flow

The Project's community-centered strategy will equitably distribute Project benefits. The Project Team will be committing at least 50% of Project implementation resources in DACs.

In partnering with Wilton Rancheria for the pilot demonstration, SMUD ensures the Tribe is party to all Project Benefits. By placing subsequent Project sites in DACs, SMUD will decrease the local energy burden and environmental exposure while increasing energy resilience and clean energy technology adoption. In each neighborhood, SMUD will extend its relationships into the community and focus on the groups most at risk of health impacts related to climate change, health burdens, and poor air quality. SMUD will also promote job creation, training, and enterprise contracting in DACs through its programming targets, incentives, and SEED initiative.

Cost savings generated by the Project will provide additional capacity to low-income assistance programs run by SMUD's Residential Assistance Delivery team that help decrease community energy burden. SMUD offers qualifying residential customers monthly discounts programs, annual one-time bill payment assistance, and in-home energy efficient upgrades. Residential programs include the Energy Assistance Program Rate (EAPR), EnergyHelp, MED Rate, HomePower, Bill-Pay Your Way, SMUD Energy Store, and Energy Saver Program services. EAPR-for-nonprofit is also available to nonprofits that provide housing or temporary shelter for low-income residents that may be eligible for the EAPR discount.

4.3 Project Justice40 Goals & Milestones

To support the Justice40 Initiative, SMUD is committed to allocating 40%+ of Project benefits to disadvantaged communities through the following goals:

1. **J40 Goal 1: Produce & Quantify Project Benefits**
2. **J40 Goal 2: Mitigate Negative Impacts & Address Cumulative Burdens**
3. **J40 Goal 3: Socialize Project Impacts to Maximize Community Benefits**

Table 5. J40 Goals & Milestones

Goals	SMART Milestone	Target Date	Metrics
J40 Goal 1: Produce & Quantify Project Benefits (PBs)	J40 Milestone 1.1: Develop Plan to Track PBs	Q1 2025	• # stakeholders engaged, % from DACs • # benefits identified • # metrics identified • # benefits optimization mechanisms identified
	J40 Milestone 1.2: Begin tracking PBs	Q1 2026	• # benefits tracked • # metrics tracked • # communities impacted, % DACs • # engagement sessions for feedback • # benefits optimization mechanisms used
	J40 Milestone 1.3: Report PBs	Q4 2028	• Total benefits • % to DACs • $ allocated
J40 Goal 2: Mitigate Negative Impacts (Nis) & Address Cumulative Burdens (CBs)	J40 Milestone 2.1: Develop Plan to Track Potential NIs & CBs	Q1 2025	• # stakeholders engaged, % from DACs • # impacts identified • # metrics identified • # mitigation mechanisms identified
	J40 Milestone 2.2: Begin Tracking NIs & CBs	Q1 2026	• # impacts tracked • # metrics tracked • # communities impacted, % DACs • # engagement sessions for feedback • # mitigation mechanisms used
	J40 Milestone 2.3: Report NIs & CBs	Q4 2028	• Total impacts • % to DACs • $ allocated
J40 Goal 3: Socialize Project Impacts to Maximize Community Benefits	J40 Milestone 3.1: Begin Conducting Project Community Education	Q1 2027	• # community engagement sessions/mechanisms • # participants, % from DACs • $ allocated
	J40 Milestone 3.2: Share the Project Model with Utilities	Q4 2028	• # utilities identified • # utilities engaged • # utilities adopting model

The Justice40 goals (J40 1,2,3) will extend throughout the entire project timeframe and include an estimated 1,668 hours of staff time from SMUD's tribal liaison, DEIA lead, and workforce development team (~$422,000), to track, report and disseminate project milestones and deliverables.

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: DE-FOA-0002740 Proposer: Sacramento Municipal Utility District
2. This Environmental Questionnaire pertains to a: ☒ Recipient or Prime Contractor ☐ Sub-recipient or Subcontractor
3. Principal Investigator: Katarina Miletijev Telephone Number: (916) 732-6235
4. Project Title: Connected Clean PowerCity
5. Expected Project Duration: 60 months
6. Location of Activities covered by **this** Environmental Questionnaire: (City/Township, County, State):
   Sacramento County and portions of Placer County, California
7. List the full scope of activities planned (only for the location that is the subject of this Environmental Questionnaire).
   Installation of: Edge computing sensors with measurement capabilities, load control switches, fiber optic cable, Distribution Automation network devices.
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
Wilton Rancheria	Sacramento County

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

Group A

☐ 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.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL 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

☐ 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.

N/A

C. PROJECT LOCATION

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

Up to 200,000 existing residential and commercial properties as well as existing poles and substations located throughout SMUD's service territory.

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

Map of SMUD service territory where work will take place attached.

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	☐ Industrial	☑ Commercial	☐ Agricultural
☑ Suburban	☑ Rural	☑ Residential	☐ Research Facilities
☐ 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.

Square footage will be variable based of customer premise where equipment is being replaced/deployed. Portion of any single location to be used for project is negligible.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

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.

☑ No construction would be anticipated for this project.

d. Describe how land use would be affected by operational activities associated with the proposed project.

☑ No land areas would be affected.

No expected impact to land use of previously existing residential and commercial premises.

e. Describe any plans to reclaim areas that would be affected by the proposed project.

☑ No land areas would be affected.

f. Would the proposed project affect any unique or unusual landforms (e.g., cliffs, waterfalls, etc.)?

☑ 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 ☐ Yes (describe)

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. ☑ None

b. Would the proposed project require the construction of waste pits or settling ponds?

☑ No ☐ Yes (describe and identify location, and estimate surface area disturbed)

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

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

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

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?

☑ No ☐ Yes (describe)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

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 ☐ Yes (describe)

3. Biological Resources

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

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

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

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? ☑ No ☐ Yes (describe)

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

4. Socioeconomic and Infrastructure Conditions

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

Creation of contract labor for equipment installation and increased educational opportunity, creation of job programs through workforce development for disadvantaged communities.

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

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

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

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

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. ☑ None

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

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

d. Would the proposed project interfere with visual resources (e.g., eliminate scenic views) or alter the present landscape?
☑ 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.

No.

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
O_3 - 1 Hour	☐	☑
O_3 - 8 Hour	☐	☑
SO_x	☑	☐
PM - 2.5	☑	☐
PM - 10	☑	☐
CO	☑	☐
NO_2	☑	☐
Lead	☑	☐

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

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

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

d. Would the proposed project be classified as either a New Source or a major modification to an existing source?
☑ 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		
☐ NO_x		
☐ PM - 2.5		
☐ PM - 10		
☐ CO		
☐ CO_2		
☐ Lead		
☐ H_2S		
☐ Organic solvent vapors or other volatile organic compounds--List:		
☐ Hazardous air pollutants -- List:		
☐ Other -- List:		
☑ None		

f. Would any types of emission control or particulate collection devices be used?
☑ 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.
None.

b. What sources would supply potable and process water for the proposed project?
N/A.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

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

	Gallons/day	Gallons/year
☐ Non-contact cooling water		
☐ Process water		
☐ Sanitary		
☐ Other -- describe:		
☑ None		

d. What would be the major components of each type of wastewater (e.g., coal fines)? ☑ No wastewater produced

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

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

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

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

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

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

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

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

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

m. Would the proposed project require issuance of an Underground Injection Control (UIC) permit?

☑ 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)?

☑ No ☐ Yes (describe)

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.)**	30 tons
☐ **Coal or coal by-products**	
☐ **Other -- Identify:**	
☐ **Hazardous waste – Identify:**	
☐ **None**	

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

c. How and where would solid waste disposal be accomplished?

☐ None generated
☐ On-site (identify and describe location)
☑ Off-site (identify location and describe facility and treatment)

Sacramento County Municipal recycling and waste facilities. All recyclable materials will be separated for ease of recycling, remaining waste to be interred in landfill.

d. How would wastes for disposal be transported?

Via Sacramento County recycling/waste handling vehicles.

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. ☑ None

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

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

g. If hazardous wastes would require off-site disposal, have arrangements been made with a certified TSD (Treatment, Storage, and Disposal) facility?

☑ 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.

☑ 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.

☑ None

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

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

SMUD has a robust and ongoing worker safety training for all its employees that meets or exceeds Cal/OSHA requirements.

e. Would additional safety training be necessary for any new laboratory, equipment, or processes involved with the project?

☑ No ☐ Yes (describe)

f. Describe any increases in ambient noise levels to the public from construction and operational activities.

☑ 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?

☐ No construction planned ☑ No ☐ Yes (describe)

h. Would hearing protection be required for workers? ☐ No ☑ Yes (describe)

During construction related activities, Cal/OSHA requirements will be followed.

10. Environmental Restoration and/or Waste Management

a. Would the proposed project include CERCLA removals or similar actions under RCRA or other authorities?

☑ No ☐ Yes (describe)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

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? ☑ No ☐ Yes (describe)

c. Would the proposed project involve operations of environmental monitoring and control systems?
☑ 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? ☑ 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): ☑ None ☐ New Required ☐ Modification Required
Describe:

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

c. Toxic Substance Control Act (TSCA): ☑ None ☐ New Required ☐ Modification Required
Describe:

d. Clean Water Act (CWA): ☑ None ☐ New Required ☐ Modification Required
Describe:

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

f. Underground Injection Control Program (UIC): ☑ None ☐ New Required ☐ Modification Required
Describe:

g. Clean Air Act (CAA): ☑ None ☐ New Required ☐ Modification Required
Describe:

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

h. Endangered Species Act (ESA): ☑ None ☐ New Required ☐ Modification Required
Describe:

i. Floodplains and Wetlands Regulations: ☑ None ☐ New Required ☐ Modification Required
Describe:

j. Fish and Wildlife Coordination Act (FWCA): ☑ None ☐ New Required ☐ Modification Required
Describe:

k. National Historic Preservation Act (NHPA): ☑ None ☐ New Required ☐ Modification Required
Describe:

l. Coastal Zone Management Act (CZMA): ☑ None ☐ New Required ☐ Modification Required
Describe:

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.

CEQA is applicable, but permits not expected to be required as part of this project (no construction).

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

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

☑ No ☐ Yes (describe)

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

☑ None (provide supporting detail) ☐ Significant impacts (describe)

Project will be installing or upgrading: Edge computing sensors with measurement capabilities, load control switches, fiber optic cable, Distribution Automation network devices on existing residential and commercial premises and poles. Device installation requires minimal effort and will typically be replacing an older, existing device. No new construction will be included in project.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

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

Useful life of equipment is expected to be 15+ years. At that time, installed devices will be removed and new devices installed. All recyclable materials will be sorted and processed for recycling. Non-recyclable materials will be disposed of in accordance with regulatory requirements and best practices.

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: Ellias van Ekelenburg
Ellias van Ekelenburg (Mar 15, 2023 20:08 PDT)

Date (mm/dd/yyyy): 03/15/2023

Typed Name: Ellias van Ekelenburg

Title: Director Environmental, Safety & Real Estate Service

Organization: SMUD

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.

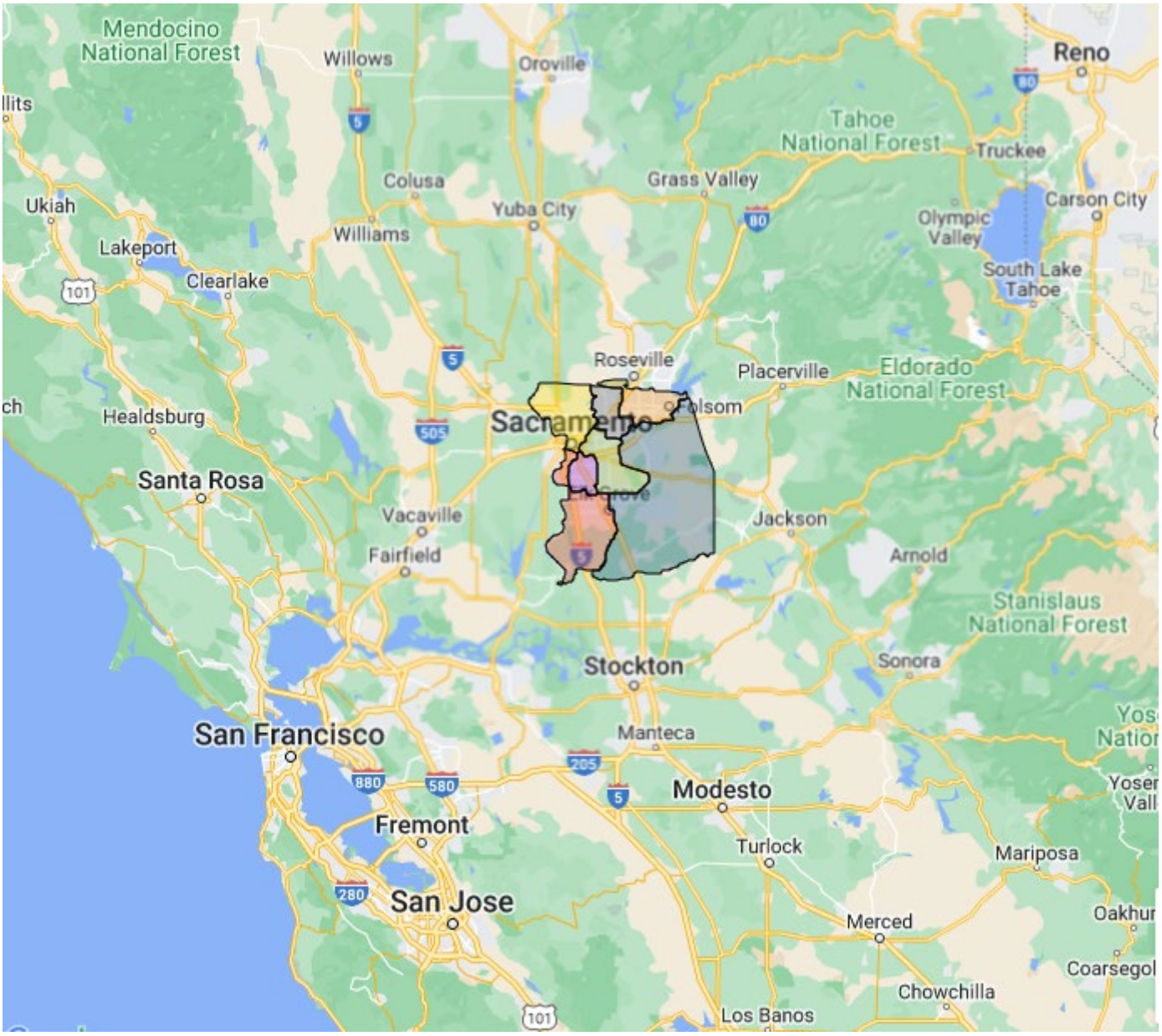
DOE Project Manager

Signature:

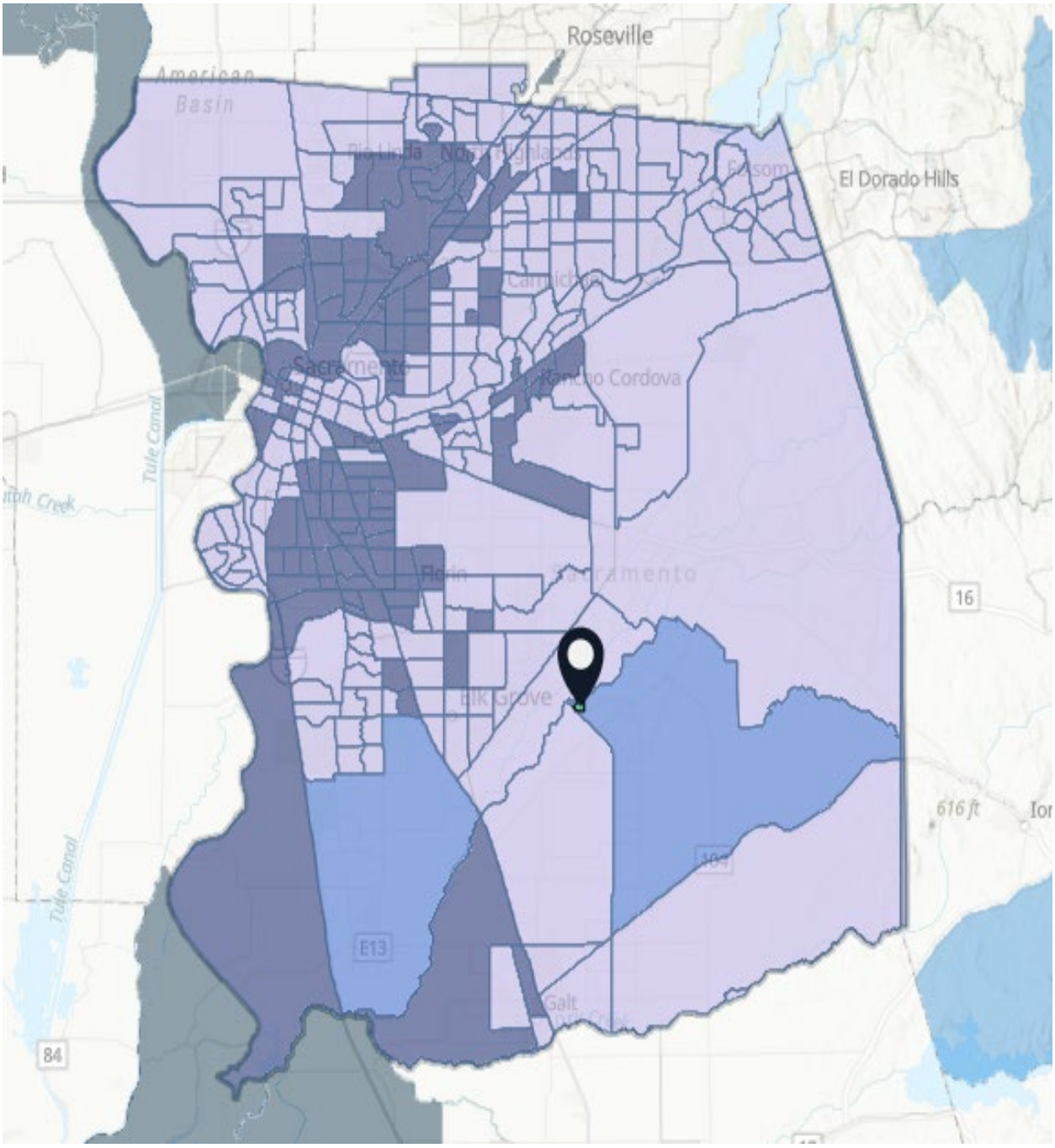
Date (mm/dd/yyyy):

Typed Name:

Connected Clean PowerCity Project Location



Connected Clean PowerCity Project Location - Zoomed In



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: DE-FOA-0002740 Proposer: Sacramento Municipal Utility District
2. This Environmental Questionnaire pertains to a: ☐ Recipient or Prime Contractor ☒ Sub-recipient or Subcontractor
3. Principal Investigator: Katarina Miletijev Telephone Number: (916) 732-6235
4. Project Title: Connected Clean PowerCity
5. Expected Project Duration: 60 months
6. Location of Activities covered by **this** Environmental Questionnaire: (City/Township, County, State):
   Sacramento County, California
7. List the full scope of activities planned (only for the location that is the subject of this Environmental Questionnaire).
   Installation of edge computing sensors with measurement capabilities, load control switches, solar generation, battery storage, electric vehicle charging, and heat pumps.
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

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

Group A

☐ 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.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL 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

☐ 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.

N/A

C. PROJECT LOCATION

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

Wilton Rancheria property and admin office addresses, dispersed residential premises owned by Tribal members located in neighborhoods throughout Sacramento County.

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

Map of SMUD service territory where work will take place attached.

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	☐ Industrial	☑ Commercial	☐ Agricultural
☑ Suburban	☑ Rural	☑ Residential	☐ Research Facilities
☐ 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 project will include a range of facilities and residential homes. Facility square footage will be a total of 25,000 square feet. Residential homes will range in size up to 2,000 square feet. The portion of square footage to be included in the project is to be determined based upon need and opportunity.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

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.

☑ No construction would be anticipated for this project.

d. Describe how land use would be affected by operational activities associated with the proposed project.

☑ No land areas would be affected.

e. Describe any plans to reclaim areas that would be affected by the proposed project.

☑ No land areas would be affected.

f. Would the proposed project affect any unique or unusual landforms (e.g., cliffs, waterfalls, etc.)?

☑ 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 ☑ Yes (describe)

Project elements include installation of electrification equipment on Wilton Rancheria land which is federally recognized Tribal land.

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. ☑ None

b. Would the proposed project require the construction of waste pits or settling ponds?

☑ No ☐ Yes (describe and identify location, and estimate surface area disturbed)

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

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

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

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?

☑ No ☐ Yes (describe)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

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 ☐ Yes (describe)

3. Biological Resources

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

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

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

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? ☑ No ☐ Yes (describe)

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

4. Socioeconomic and Infrastructure Conditions

a. Would local socio-economic changes result from the proposed project? ☐ No ☑ Yes (describe)
Creation of jobs for Rancheria members and increased educational opportunities, creation of job programs through workforce development for Tribal community members.

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

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

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

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

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. ☐ None

The project would be located on Wilton Rancheria which has been in non-continuous operation since 1928. The Rancheria is federally recognized as sovereign Tribal land.

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

Installation of solar, EV Charing or battery storage would take place on previously distributed areas and/or existing facilities.

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

d. Would the proposed project interfere with visual resources (e.g., eliminate scenic views) or alter the present landscape?
☑ 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.

Yes, portions of the project will be located on Wilton Rancheria Tribal land.

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
O_3 - 1 Hour	☐	☑
O_3 - 8 Hour	☐	☑
SO_x	☑	☐
PM - 2.5	☑	☐
PM - 10	☑	☐
CO	☑	☐
NO_2	☑	☐
Lead	☑	☐

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

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

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

d. Would the proposed project be classified as either a New Source or a major modification to an existing source?
☑ 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		
☐ NO_x		
☐ PM - 2.5		
☐ PM - 10		
☐ CO		
☐ CO_2		
☐ Lead		
☐ H_2S		
☐ Organic solvent vapors or other volatile organic compounds--List:		
☐ Hazardous air pollutants -- List:		
☐ Other -- List:		
☑ None		

f. Would any types of emission control or particulate collection devices be used?
☑ 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.
The Rancheria directly abuts the Cosumnes River.

b. What sources would supply potable and process water for the proposed project?
N/A

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

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

	Gallons/day	Gallons/year
☐ Non-contact cooling water		
☐ Process water		
☐ Sanitary		
☐ Other -- describe:		
☑ None		

d. What would be the major components of each type of wastewater (e.g., coal fines)? ☑ No wastewater produced

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

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

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

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

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

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

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

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

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

m. Would the proposed project require issuance of an Underground Injection Control (UIC) permit?

☑ 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)?

☑ No ☐ Yes (describe)

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.)**	5 tons
☐ **Coal or coal by-products**	
☐ **Other -- Identify:**	
☐ **Hazardous waste – Identify:**	
☐ **None**	

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

c. How and where would solid waste disposal be accomplished?

☐ None generated
☐ On-site (identify and describe location)
☑ Off-site (identify location and describe facility and treatment)

Sacramento County Municipal recycling and waste facilities. All recyclable materials will be separated for ease of recycling, remaining waste to be interred in landfill.

d. How would wastes for disposal be transported?

Via Sacramento County recycling/waste handling vehicles.

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. ☑ None

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

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

g. If hazardous wastes would require off-site disposal, have arrangements been made with a certified TSD (Treatment, Storage, and Disposal) facility?

☑ 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.

☐ None ☑ Hazardous or toxic materials that would be used (identify):

Electronic building systems components, solar arrays, and battery storage.

b. Describe the potential impacts of this project's hazardous materials on human health and the environment.

☑ None

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

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

e. Would additional safety training be necessary for any new laboratory, equipment, or processes involved with the project?

☑ No ☐ Yes (describe)

f. Describe any increases in ambient noise levels to the public from construction and operational activities.

☑ 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?

☑ No construction planned ☐ No ☐ Yes (describe)

h. Would hearing protection be required for workers? ☐ No ☑ Yes (describe)

During construction related activities, Cal/OSHA requirements will be followed.

10. Environmental Restoration and/or Waste Management

a. Would the proposed project include CERCLA removals or similar actions under RCRA or other authorities?

☑ No ☐ Yes (describe)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

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? ☑ No ☐ Yes (describe)

c. Would the proposed project involve operations of environmental monitoring and control systems?
☐ No ☑ Yes (describe)
If over an acre, a stormwater pollution and prevention program would be required, NPDE permit. All construction activities would be reviewed pursuant to the NEPA.

d. Would the proposed project involve siting, construction, operation, or decommissioning of a facility for storing packaged hazardous waste for 90 days or less? ☑ 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): ☑ None ☐ New Required ☐ Modification Required
Describe:

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

c. Toxic Substance Control Act (TSCA): ☑ None ☐ New Required ☐ Modification Required
Describe:

d. Clean Water Act (CWA): ☑ None ☐ New Required ☐ Modification Required
Describe:

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

f. Underground Injection Control Program (UIC): ☑ None ☐ New Required ☐ Modification Required
Describe:

g. Clean Air Act (CAA): ☑ None ☐ New Required ☐ Modification Required
Describe:

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

h. Endangered Species Act (ESA): ☑ None ☐ New Required ☐ Modification Required
Describe:

i. Floodplains and Wetlands Regulations: ☐ None ☐ New Required ☐ Modification Required
Describe:

j. Fish and Wildlife Coordination Act (FWCA): ☑ None ☐ New Required ☐ Modification Required
Describe:

k. National Historic Preservation Act (NHPA): ☑ None ☐ New Required ☐ Modification Required
Describe:

l. Coastal Zone Management Act (CZMA): ☑ None ☐ New Required ☐ Modification Required
Describe:

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.

NEPA compliance.

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

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

☑ No ☐ Yes (describe)

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

☑ None (provide supporting detail) ☐ Significant impacts (describe)

All project related installation activities will occur within residential homes and or on Rancheria land. All activities within residences would fall under general remodel or new appliance installation applications. Activities on Rancheria land would include installation of energy efficiency systems, EV charging, solar panels and or battery storage systems adjacent to/on existing structures.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

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

Useful life of equipment is expected to be 15+ years. At that time, installed devices will be removed and new devices installed. All recyclable materials will be sorted and processed for recycling. Non-recyclable materials will be disposed of in accordance with regulatory requirements and best practices.

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: Ellias van Ekelenburg
Ellias van Ekelenburg (Mar 15, 2023 20:08 PDT)

Date (mm/dd/yyyy): 03/15/2023

Typed Name: Ellias van Ekelenburg

Title: Director Environmental, Saefety & Real Estate Servic

Organization: SMUD

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.

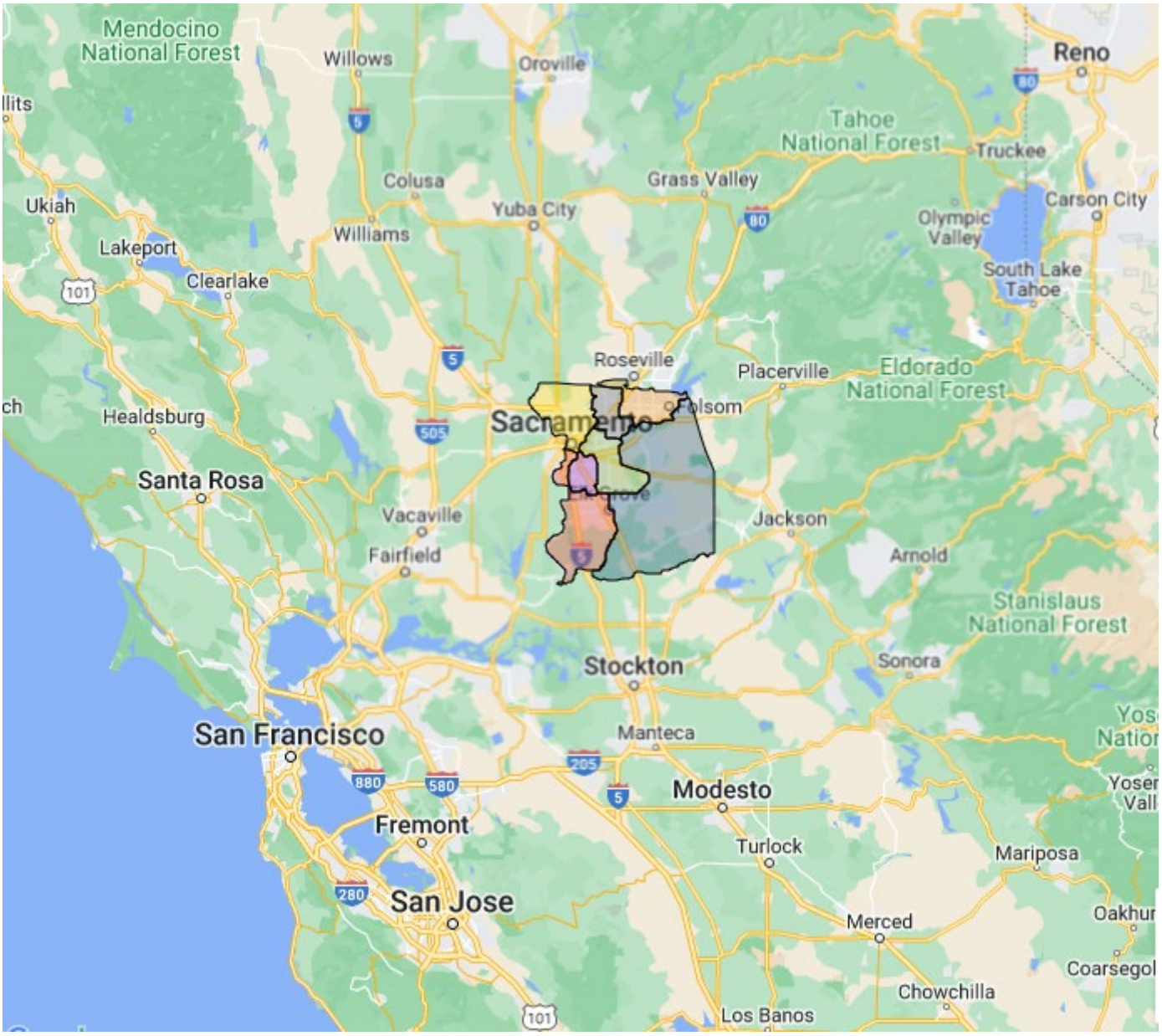
DOE Project Manager

Signature:

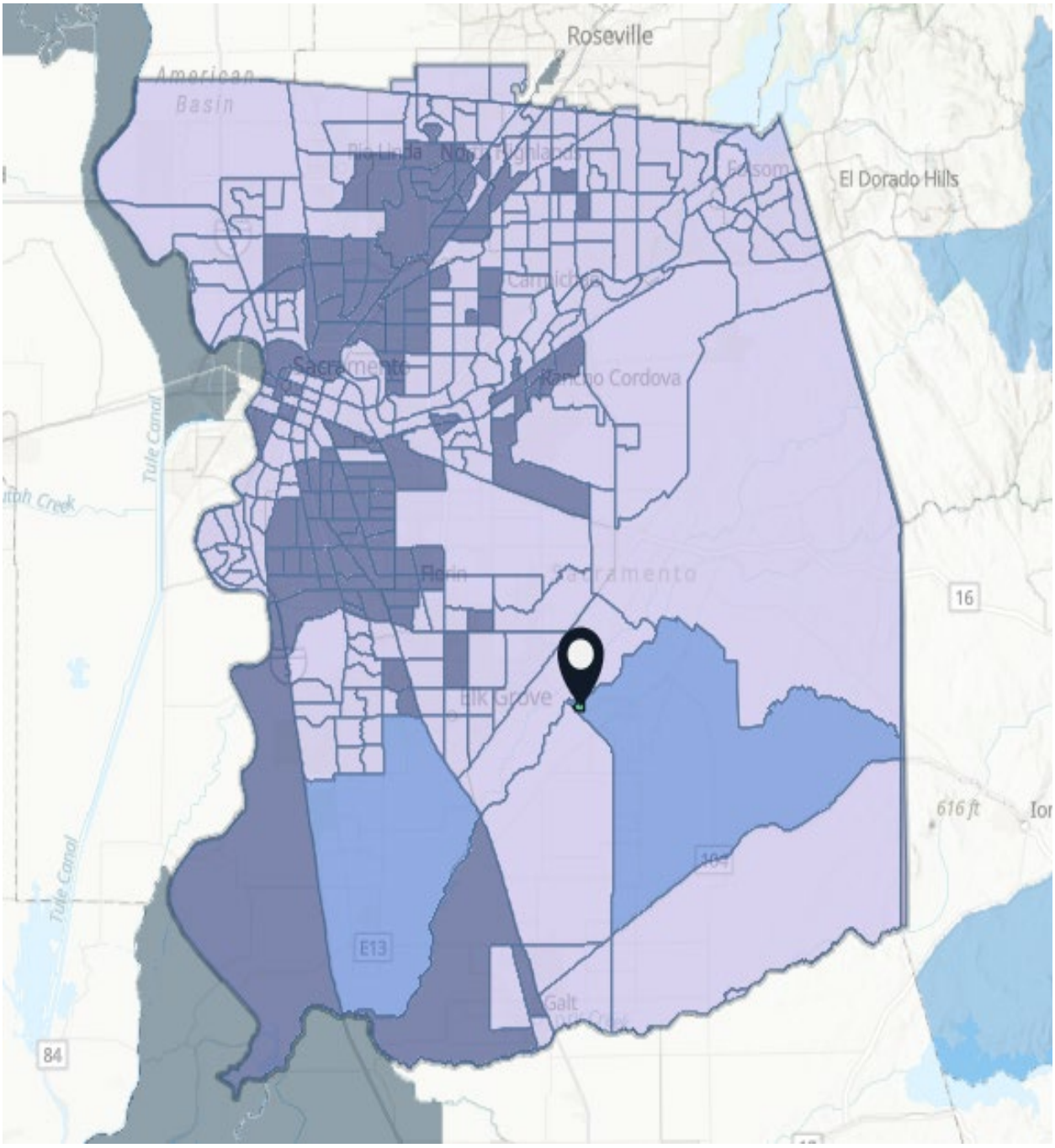
Date (mm/dd/yyyy):

Typed Name:

Connected Clean PowerCity Project Location



Connected Clean PowerCity Project Location - Zoomed In



Connected Clean PowerCity

- Prime: Sacramento Municipal Utility District (SMUD)
- Subrecipient: Wilton Rancheria Tribe of Miwok Indians
- Technical Implementation Partners: Itron, Open Systems International, Inc.
- Requested DOE Funds: $50,000,000
- Proposed Cost Share: $106,164,172

Key Personnel
Program Director/Manager: Katarina Miletijev
Business Lead: Hieu Nguyen
Compliance: Trevor Lamb
Cybersecurity: Michael Lamb
DEIA: Shiloh Costello
Environmental & Tribal Liaison: Rob Ferrera

SMUD™

Itron

OSI An AspenTech® Business

1

Project At a Glance

Grid-Edge Intelligence	Deploy up to 200,000 edge computing sensors with measurement capabilities and up to eight (8) DI applications with supporting back-office infrastructure to enable DI at the grid edge.
Advanced DERMS	Deploy advanced DERMS features with centralized artificial intelligence and integrate DERs to support the transition from a one-way centralized distribution system to a two-way decentralized system that reinforces grid resiliency. Deploy up to 100 miles of fiber optic cable to facilitate deployment and improve DERMS situational awareness, control, and data quality.
OMS Modernization	Implement a new OMS with advanced features as the next step towards an integrated Advanced Distribution Management platform to enable operational efficiencies and better customer and community experience through improved communication, grid automation, and modernization.
Enabling Technology and Systems	Deploy up to 22,500 intelligent 2-way load control switches/sensors to cycle air conditioning load. Deliver 5/15 minute interval data availability for commercial/residential customers.
Tribal Collaboration Case Study	Conduct Tribal assessment of building electrification opportunities (PV, battery storage, heat pump water heaters, and EVSEs). Conduct education and marketing campaigns for up to 70 Tribal members who own their homes. Deploy electrification technologies and edge computing sensors at identified locations and integrate with utility-facing smart grid components included in project.

SMUD

2

Project Overview

Technology

Connected CleanPower City will adapt infrastructure to interact with technology and customers at the grid's edge, establishing visibility, management, and control. This ecosystem, created through grid and technology enhancements, combined with an existing Advanced Distribution Management System (ADMS), will enable real-time grid management of proliferating Distributed Energy Resources (DERs), the accelerated adoption of electric vehicles (EVs) and vehicle-to-everything (V2X), intelligent buildings, virtual power plants (VPP), battery storage, and electrified neighborhoods. To manage these assets, SMUD is accelerating the integration of Distributed Intelligence (DI) at the Grid Edge, an enhanced Distributed Energy Resource Management System (DERMS), and an advanced Outage Management System (OMS) to maintain and improve grid resiliency.

Impact

The Project's next-generation smart grid will address the regional need for resilient, reliable grid service that is hardened for and supports the clean energy transition within SMUD and other utilities' service areas. This new intelligent ecosystem replicates effective grid management at small to large utilities with dispersed Tribal partners in rural and urban communities.

Goals

- Identify and implement the base elements and critical infrastructure needed to prepare and implement a complete next-generation smart grid.
- Fully enabled instance of DI at the Grid Edge at scale, Advanced DERMS and OMS enabling SMUD to reach its goals of a zero carbon future, setting the foundation for next-generation technologies, and creating a project portfolio for utilities to replicate.

Key Ideas

The Project will enable a zero-carbon grid of the future by deploying technologies and processes that improve service reliability, support core community benefits, and provide equitable energy access to all at a best-in-class cost. Expected outcomes future-proof the region's resilience against climate projections and electrification needs while concurrently delivering immediate benefits in testing grid congestion reductions based on edge-sensing.

SMUD

3

Connected CleanPower City

Enabling a zero-carbon grid to future-proof regional resilience and deliver grid congestion reductions based on edge-sensing technology integration

APPLICANT: Sacramento Municipal Utility District (SMUD)

PROGRAM DIRECTOR: Katarina Miletijev, Manager of Distribution Operations Engineering

OBJECTIVES: Identify and implement the base elements and critical infrastructure needed to prepare and implement a complete next-generation smart grid to include fully enabled instance of DI at the Grid Edge at scale, Advanced DERMS and OMS.

APPROACH: The Project includes five core elements to provide an ecosystem of intelligence that will manage the grid more effectively than the traditional top-down methodology of visibility and control: Element 1) Distributed, Grid-Edge Intelligence at Scale Deployment and complete integration of grid-edge computing sensors will increase grid capacity and flexibility while delivering technology-enabled and equitable customer engagement; Element 2) Advanced DERMS Newly deployed sensors and fiber optic communications would be further leveraged through their integration with existing ADMS and enhanced DERMS platforms to increase the visibility of behind-the-meter grid-connected devices enabling two-way management of DERs, operationalization of aggregator-based customer programs and the resolution of grid conditions through DERs; Element 3) OMS Modernization New grid edge devices and advanced DERMS functionality will be incorporated into a more robust OMS system giving operators a unified view of the as-switched electrical grid model and delivering extreme responsiveness and resiliency; Element 4) Enabling Technology and Systems Further upgrades to meter data polling intervals and behind-the-meter demand response controls will enable technologies and systems to support more effective integration of smart grid infrastructure and replicability; Element 5) Wilton Rancheria Tribal Collaboration Case Study Advanced smart grid system components will integrate with site-specific DERs at the Wilton Rancheria Miwok Tribal community to increase grid resiliency and provide a level of energy independence for Tribal members.

IMPACT: Connected CleanPower City's next-generation smart grid will address the regional need for resilient, reliable grid service that is hardened for and supports the clean energy transition. This new intelligent ecosystem replicates effective grid management at small to large utilities with dispersed Tribal partners in rural and urban communities. The Project's community-centered strategy will equitably distribute Project benefits with at least 50% implementation in disadvantaged communities.

STRATEGIC PARTNERS: Wilton Rancheria Tribe of Miwok Indians, Itron, Open Systems International, Inc.

SMUD™ Itron OSI An AspenTech® Business

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!
Do not modify this template or any cells for formulas!

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.
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, contractors, 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 and 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 24 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	$21,689,351	$21,689,351			$43,378,703	50.00%	1/1/2024 to 12/31/2024
Budget Period 2	$27,572,272	$36,417,174			$63,989,446	56.91%	1/1/2025 to 12/31/2025
Budget Period 3	$239,064	$16,710,797			$16,949,861	98.59%	1/1/2026 to 12/31/2026
Budget Period 4	$246,056	$15,580,711			$15,826,767	98.45%	1/1/2027 to 12/31/2027
Budget Period 5	$253,257	$15,766,139			$16,019,396	98.42%	1/1/2028 to 12/31/2028
Total	$50,000,000	$106,164,172			$156,164,172	67.98%	

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	$4,592,923	$5,237,061	$2,313,905	$2,165,651	$2,194,274	$16,503,814	10.57%	
b. Fringe Benefits	$2,974,874	$3,423,770	$1,479,851	$1,428,070	$1,447,591	$10,754,156	6.89%	
c. Travel	$0	$0	$0	$0	$0	$0	0.00%	
d. Equipment	$1,654,000	$604,500	$554,500	$649,500	$554,500	$4,017,000	2.57%	
e. Supplies	$0	$0	$0	$0	$0	$0	0.00%	
f. Contractual								
Sub-recipient	$451,370	$464,551	$478,127	$492,111	$506,514	$2,392,674	1.53%	
Contractor	$20,669,283	$44,345,211	$6,627,484	$5,668,318	$5,735,197	$83,045,493	53.18%	
FFRDC	$0	$0	$0	$0	$0	$0	0.00%	
Total Contractual	$21,120,653	$44,809,762	$7,105,611	$6,160,429	$6,241,711	$85,438,167	54.71%	
g. Construction	$0	$0	$0	$0	$0	$0	0.00%	
h. Other Direct Costs	$5,989,878	$1,850,253	$1,963,628	$2,077,003	$2,190,378	$14,071,140	9.01%	
Total Direct Costs	$36,332,327	$55,925,346	$13,417,495	$12,480,653	$12,628,455	$130,784,276	83.75%	
i. Indirect Charges	$7,046,376	$8,064,100	$3,532,366	$3,346,114	$3,390,941	$25,379,896	16.25%	
Total Costs	$43,378,703	$63,989,446	$16,949,861	$15,826,767	$16,019,396	$156,164,172	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 contractors 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 hourly rate and the total direct personnel compensation will automatically calculate. Rate basis (e.g., rate negotiated for each hour worked on the project, 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)	Hourly Rate ($/Hr)	Total Budget Period 1	Time (Hrs)	Hourly Rate ($/Hr)	Total Budget Period 2	Time (Hrs)	Hourly Rate ($/Hr)	Total Budget Period 3	Time (Hrs)	Hourly Rate ($/Hr)	Total Budget Period 4	Time (Hrs)	Hourly Rate ($/Hr)	Total Budget Period 5			
1	Sr. Engineer **(EXAMPLE!!!)**	2000	$85.00	$170,000	200	$50.00	$10,000	200	$50.00	$10,000	200	$50.00	$10,000	200	$50.00	$10,000	2400	$190,000	
2	Technicians (2)	4000	$20.00	$80,000	0	$0.00	$0	0	$0.00	$0	0	$0.00	$0	0	$0.00	$0	4000	$80,000	
2	GS Electrician (4)	720	$67.35	$48,493	0	$69.37	$0	0	$71.45	$0	0	$73.60	$0	0	$75.80	$0	720	$48,493	Activity Type Rate
7	Environmental Specialist	480	$65.58	$31,478	480	$67.55	$32,423	480	$69.57	$33,395	480	$71.66	$34,397	480	$73.81	$35,429	2400	$167,123	Activity Type Rate
7	Energy & Tech Center Staff	768	$67.01	$51,465	768	$69.02	$53,009	768	$71.09	$54,599	480	$73.23	$35,148	360	$75.42	$27,152	3144	$221,374	Activity Type Rate
7	Supervisor (Sustainable Communities)	768	$88.71	$68,132	768	$91.38	$70,176	768	$94.12	$72,282	480	$96.94	$46,531	360	$99.85	$35,945	3144	$293,067	Activity Type Rate
4	Technology Analysis	1210	$68.93	$83,402	1135	$71.00	$80,580	0	$73.13	$0	0	$75.32	$0	0	$77.58	$0	2345	$163,982	Activity Type Rate
2,4	Bus Intelligence Technical Analyst (5)	1146	$70.18	$80,431	1040	$72.29	$75,181	720	$74.46	$53,610	720	$76.69	$55,218	720	$78.99	$56,875	4346	$321,316	Activity Type Rate
2,3,4,5	CCS Analyst (3)	2420	$71.75	$173,635	1820	$73.90	$134,502	1140	$76.12	$86,776	1140	$78.40	$89,379	1140	$80.76	$92,061	7660	$576,353	Activity Type Rate
4	Compute Platform Engineering	120	$70.15	$8,418	220	$72.26	$15,897	0	$74.43	$0	0	$76.66	$0	0	$78.96	$0	340	$24,315	Activity Type Rate
4	Database Administration	10	$77.69	$777	25	$80.02	$2,001	0	$82.42	$0	0	$84.90	$0	0	$87.44	$0	35	$2,778	Activity Type Rate
3	Telecomm Design (2)	200	$70.91	$14,181	200	$73.03	$14,606	600	$75.22	$45,134	400	$77.48	$30,992	400	$79.80	$31,922	1800	$136,835	Activity Type Rate
3,4,5	Distribution Mgmt System Team (4)	6220	$82.41	$512,592	6340	$84.88	$538,156	1180	$87.43	$103,166	1420	$90.05	$127,874	1180	$92.75	$109,449	16340	$1,391,237	Activity Type Rate
2,4	Enterprise Applications Admin (2)	448	$66.57	$29,823	205	$68.57	$14,056	180	$70.62	$12,712	180	$72.74	$13,093	180	$74.92	$13,486	1193	$83,171	Activity Type Rate
4,5	Enterprise Application Development	340	$70.08	$23,828	95	$72.18	$6,857	0	$74.35	$0	0	$76.58	$0	0	$78.88	$0	435	$30,685	Activity Type Rate
2,3,4	Ent Svc Bus Integration (7)	1460	$66.73	$97,431	660	$68.74	$45,366	80	$70.80	$5,664	80	$72.92	$5,834	80	$75.11	$6,009	2360	$160,303	Activity Type Rate
4	Enterprise Supporting Services	60	$70.78	$4,247	420	$72.91	$30,620	0	$75.09	$0	0	$77.34	$0	0	$79.67	$0	480	$34,867	Activity Type Rate
4	GIS Analyst 2)	540	$69.72	$37,649	520	$71.81	$37,342	60	$73.97	$4,438	60	$76.19	$4,571	60	$78.47	$4,708	1240	$88,709	Activity Type Rate
4	Hardware Support	30	$54.29	$1,629	110	$55.92	$6,151	0	$57.60	$0	0	$59.33	$0	0	$61.11	$0	140	$7,780	Activity Type Rate
4	Identity Access Management	0	$75.49	$0	220	$77.75	$17,106	0	$80.09	$0	0	$82.49	$0	0	$84.96	$0	220	$17,106	Activity Type Rate
2,3	Manager (3)	300	$93.01	$27,903	300	$95.80	$28,740	300	$98.67	$29,602	300	$101.63	$30,490	300	$104.68	$31,405	1500	$148,139	Activity Type Rate
4	Network Infrastructure Services	340	$66.60	$22,644	290	$68.60	$19,893	0	$70.66	$0	0	$72.78	$0	0	$74.96	$0	630	$42,537	Activity Type Rate
4	OMS Analyst	3840	$76.55	$293,950	3580	$78.85	$282,269	0	$81.21	$0	0	$83.65	$0	0	$86.16	$0	7420	$576,219	Activity Type Rate
4	OT Network Specialist	831	$74.17	$61,636	230	$76.40	$17,571	0	$78.69	$0	0	$81.05	$0	0	$83.48	$0	1061	$79,206	Activity Type Rate
1,2	Program Management	1740	$82.48	$143,519	1680	$84.96	$142,728	1680	$87.51	$147,009	1680	$90.13	$151,420	1680	$92.83	$155,962	8460	$740,638	Activity Type Rate
2,4	Project Management (3)	3500	$74.48	$260,678	3360	$76.71	$257,758	480	$79.02	$37,927	240	$81.39	$19,533	240	$83.83	$20,119	7820	$596,014	Activity Type Rate
2,4,5	SAP Developer (2)	720	$74.81	$53,862	250	$77.05	$19,263	0	$79.36	$0	0	$81.75	$0	0	$84.20	$0	970	$73,126	Activity Type Rate
1,2,3,4,5,6	Information Security	30	$71.15	$2,135	110	$73.29	$8,062	0	$75.49	$0	0	$77.75	$0	0	$80.08	$0	140	$10,196	Activity Type Rate
4	Storage & Data Protection	60	$68.64	$4,118	170	$70.70	$12,019	0	$72.82	$0	0	$75.00	$0	0	$77.25	$0	230	$16,137	Activity Type Rate
2	SAP Security (2)	60	$69.67	$4,180	0	$71.76	$0	0	$73.91	$0	0	$76.13	$0	0	$78.41	$0	60	$4,180	Activity Type Rate
1,2	Business Technology Support Staff (2)	3240	$60.88	$197,262	3600	$62.71	$225,755	3600	$64.59	$232,528	3600	$66.53	$239,504	3600	$68.52	$246,689	17640	$1,141,738	Activity Type Rate
4	Supervisor (Customer Care)	360	$84.03	$30,250	0	$86.55	$0	0	$89.14	$0	0	$91.82	$0	0	$94.57	$0	360	$30,250	Activity Type Rate
4	Telephone Developer	325	$73.07	$23,747	335	$75.26	$25,212	0	$77.52	$0	0	$79.84	$0	0	$82.24	$0	660	$48,959	Activity Type Rate
2	Revenue Analyst (3)	240	$46.44	$11,146	0	$47.84	$0	0	$49.27	$0	0	$50.75	$0	0	$52.27	$0	240	$11,146	Activity Type Rate
5	Revenue Protection Rep (IBEW)	800	$59.93	$47,940	5985	$61.72	$369,413	6096	$63.57	$387,552	6199	$65.48	$405,924	6302	$67.45	$425,048	25382	$1,635,878	Activity Type Rate
4	Process Coordinator (Customer Care)	300	$84.59	$25,378	560	$87.13	$48,794	0	$89.75	$0	0	$92.44	$0	0	$95.21	$0	860	$74,172	Activity Type Rate
4	Customer Care Supervisor	300	$87.29	$26,188	560	$89.91	$50,350	0	$92.61	$0	0	$95.39	$0	0	$98.25	$0	860	$76,538	Activity Type Rate
2,4	Customer Operations Supervisor (6)	460	$57.34	$26,376	490	$59.06	$28,940	0	$60.83	$0	0	$62.66	$0	0	$64.54	$0	950	$55,316	Activity Type Rate
2	Marketing Specialist (2)	1020	$62.62	$63,876	0	$64.50	$0	0	$66.44	$0	0	$68.43	$0	0	$70.48	$0	1020	$63,876	Activity Type Rate
4	Digital & User Experience Staff	120	$59.25	$7,109	115	$61.02	$7,018	0	$62.85	$0	0	$64.74	$0	0	$66.68	$0	235	$14,127	Activity Type Rate
4	Supervisor/Lead (Marking/Corp. Communi	120	$78.46	$9,415	115	$80.81	$9,293	0	$83.23	$0	0	$85.73	$0	0	$88.30	$0	235	$18,708	Activity Type Rate
4	Retail Product Developer	600	$77.84	$46,702	1120	$80.17	$89,793	0	$82.58	$0	0	$85.05	$0	0	$87.61	$0	1720	$136,495	Activity Type Rate
4	Retail Prod Delivery Supervision	450	$77.33	$34,800	880	$79.65	$70,094	0	$82.04	$0	0	$84.50	$0	0	$87.04	$0	1330	$104,894	Activity Type Rate
2,3	R&D Engineer (3)	1140	$60.28	$68,714	1140	$62.08	$70,776	1140	$63.95	$72,899	1140	$65.86	$75,086	1140	$67.84	$77,338	5700	$364,813	Activity Type Rate
5	Office Process Support	720	$37.10	$26,712	720	$38.21	$27,514	720	$39.36	$28,339	720	$40.54	$29,189	720	$41.76	$30,065	3600	$141,820	Activity Type Rate
2	Customer Solutions Planning (3)	240	$75.64	$18,154	0	$77.91	$0	0	$80.25	$0	0	$82.66	$0	0	$85.14	$0	240	$18,154	Activity Type Rate
5	Product Svc Specialist/Coordinator	1200	$64.40	$77,275	1200	$66.33	$79,593	1200	$68.32	$81,981	1200	$70.37	$84,440	1200	$72.48	$86,973	6000	$410,262	Activity Type Rate
5	Sr. Product Service Coordinator	180	$78.74	$14,174	180	$81.11	$14,599	180	$83.54	$15,037	180	$86.05	$15,488	180	$88.63	$15,953	900	$75,251	Activity Type Rate
4	Process Coordinator (DES Implementatior	120	$85.49	$10,259	115	$88.05	$10,126	0	$90.70	$0	0	$93.42	$0	0	$96.22	$0	235	$20,385	Activity Type Rate
1	Accounting Professional (2)	240	$56.27	$13,505	240	$57.96	$13,910	240	$59.70	$14,327	240	$61.49	$14,757	240	$63.33	$15,199	1200	$71,697	Activity Type Rate
2	Manager Distributed Energy Strategy	240	$94.33	$22,639	240	$97.16	$23,318	240	$100.07	$24,017	240	$103.07	$24,738	240	$106.17	$25,480	1200	$120,191	Activity Type Rate
3,4	Analyst GIS	290	$61.09	$17,716	295	$62.92	$18,562	0	$64.81	$0	0	$66.75	$0	0	$68.76	$0	585	$36,278	Activity Type Rate
3	Distribution System Operator (2)	1580	$90.69	$143,293	1900	$93.41	$177,483	60	$96.21	$5,773	60	$99.10	$5,946	60	$102.07	$6,124	3660	$338,619	Activity Type Rate
4	Dist Sys Planning Engineer	200	$73.07	$14,614	350	$75.26	$26,341	0	$77.52	$0	0	$79.84	$0	0	$82.24	$0	550	$40,955	Activity Type Rate
2,3,4	Dist Ops Engineer (6)	4490	$60.70	$272,534	4040	$62.52	$252,576	3840	$64.39	$247,275	3840	$66.33	$254,693	3840	$68.32	$262,334	20050	$1,289,410	Activity Type Rate
4	GIS Data Tech	120	$51.22	$6,147	120	$52.76	$6,331	0	$54.34	$0	0	$55.97	$0	0	$57.65	$0	240	$12,478	Activity Type Rate
4	T&D Maintenance Engineer	200	$78.07	$15,615	350	$80.42	$28,146	0	$82.83	$0	0	$85.31	$0	0	$87.87	$0	550	$43,760	Activity Type Rate
2,3	Distribution Planning Supervision (2)	540	$99.80	$53,890	600	$102.79	$61,674	120	$105.87	$12,705	120	$109.05	$13,086	120	$112.32	$13,479	1500	$154,834	Activity Type Rate
4	Training Staff	20	$88.16	$1,763	1460	$90.80	$132,572	0	$93.53	$0	0	$96.33	$0	0	$99.22	$0	1480	$134,335	Activity Type Rate
3	Settlements Staff	60	$63.66	$3,820	60	$65.57	$3,934	60	$67.54	$4,052	60	$69.57	$4,174	60	$71.65	$4,299	300	$20,280	Activity Type Rate
2,4	Business Transformation Staff (2)	2240	$77.49	$173,571	2320	$79.81	$185,163	480	$82.21	$39,459	480	$84.67	$40,643	480	$87.21	$41,862	6000	$480,697	Activity Type Rate
4	Bus Tech Analyst	680	$60.52	$41,156	900	$62.34	$56,105	0	$64.21	$0	0	$66.13	$0	0	$68.12	$0	1580	$97,260	Activity Type Rate
2	Manager/Supervisor (2) (Dist. Planning & (	240	$83.17	$19,961	240	$85.67	$20,560	240	$88.24	$21,177	240	$90.88	$21,812	240	$93.61	$22,467	1200	$105,978	Activity Type Rate
4	Training	0	$63.78	$0	2260	$65.69	$148,461	0	$67.66	$0	0	$69.69	$0	0	$71.78	$0	2260	$148,461	Activity Type Rate
2,3	DT-GA Line Supervsr	150	$198.73	$29,809	360	$204.69	$73,688	360	$210.83	$75,899	360	$217.16	$78,176	360	$223.67	$80,521	1590	$338,094	Activity Type Rate
3,4	GA Line Supervisor (2) (Grid Assets)	1060	$101.41	$107,499	1420	$104.46	$148,328	300	$107.59	$32,277	200	$110.82	$22,164	200	$114.14	$22,828	3180	$333,095	Activity Type Rate
4	Substation Mgmt/Supervision	129	$83.56	$10,780	207	$86.07	$17,817	0	$88.65	$0	0	$91.31	$0	0	$94.05	$0	336	$28,596	Activity Type Rate
4	Dist Electrical Worker	36	$71.05	$2,558	96	$73.18	$7,025	0	$75.38	$0	0	$77.64	$0	0	$79.97	$0	132	$9,583	Activity Type Rate
2	DT-Meter Technician (2)	1632	$134.87	$220,105	1536	$138.91	$213,372	924	$143.08	$132,207	336	$147.37	$49,518	336	$151.80	$51,003	4764	$666,206	Activity Type Rate
2	Meter Technician (2)	1788	$67.14	$120,038	2304	$69.15	$159,320	1380	$71.22	$98,289	696	$73.36	$51,059	696	$75.56	$52,591	6864	$481,297	Activity Type Rate
2	Metering Prog Support	420	$64.68	$27,167	480	$66.62	$31,980	0	$68.62	$0	0	$70.68	$0	0	$72.80	$0	900	$59,147	Activity Type Rate
4	Service Dispatcher Sub	120	$43.27	$5,192	330	$44.57	$14,708	0	$45.91	$0	0	$47.28	$0	0	$48.70	$0	450	$19,900	Activity Type Rate
4	DT-Electrical Technician	84	$165.97	$13,942	0	$170.95	$0	0	$176.08	$0	0	$181.36	$0	0	$186.81	$0	84	$13,942	Activity Type Rate
4	Electrical Technician	660	$82.03	$54,139	0	$84.49	$0	0	$87.02	$0	0	$89.64	$0	0	$92.32	$0	660	$54,139	Activity Type Rate
3,4	DT-Telecommunications Technician	60	$137.78	$8,267	0	$141.92	$0	0	$146.17	$0	0	$150.56	$0	0	$155.08	$0	60	$8,267	Activity Type Rate
3,4	Telecommunications Technician (7)	820	$70.58	$57,872	100	$72.69	$7,269	500	$74.87	$37,437	400	$77.12	$30,848	400	$79.43	$31,773	2220	$165,199	Activity Type Rate
4	Dist Process Support - Line	255	$36.49	$9,306	630	$37.59	$23,680	0	$38.72	$0	0	$39.88	$0	0	$41.07	$0	885	$32,986	Activity Type Rate
3	Estimator (4)	100	$58.24	$5,824	100	$59.98	$5,998	500	$61.78	$30,891	400	$63.64	$25,455	400	$65.55	$26,218	1500	$94,386	Activity Type Rate
2	Service Dispatcher Line (5)	4380	$43.64	$191,148	5760	$44.95	$258,914	0	$46.30	$0	0	$47.69	$0	0	$49.12	$0	10140	$450,062	Activity Type Rate
3	Inspector (2)	0	$78.87	$0	0	$81.23	$0	400	$83.67	$33,468	400	$86.18	$34,472	400	$88.77	$35,506	1200	$103,446	Activity Type Rate
4	Troubleshooter	240	$88.92	$21,341	330	$91.59	$30,224	0	$94.34	$0	0	$97.17	$0	0	$100.08	$0	570	$51,565	Activity Type Rate
				$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	
				$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	
				$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	**63370**		**$4,592,923**	**71139**		**$5,237,061**	**31016**		**$2,313,905**	**28771**		**$2,165,651**	**28394**		**$2,194,274**	**222690**	**$16,503,814**	

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	
EXAMPLE!!! Sr. Engineer	$170,000	20%	$34,000	$10,000	20%	$2,000	$10,000	20%	$2,000	$10,000	20%	$2,000	$10,000	20%	$2,000	$38,000
GS Electrician (4)	48,493	71%	$34,375	0	71%	$0	0	71%	$0	0	71%	$0	0	71%	$0	$34,375
Environmental Specialist	31,478	70%	$21,901	32,423	70%	$22,558	33,395	70%	$23,235	34,397	70%	$23,932	35,429	70%	$24,650	$116,276
Energy & Tech Center Staff	51,465	69%	$35,282	53,009	69%	$36,340	54,599	69%	$37,430	35,148	69%	$24,096	27,152	69%	$18,614	$151,762
Supervisor (Sustainable Communities)	68,132	64%	$43,460	70,176	64%	$44,764	72,282	64%	$46,107	46,531	64%	$29,681	35,945	64%	$22,929	$186,940
Technology Analysis	83,402	68%	$56,945	80,580	68%	$55,018	0	68%	$0	0	68%	$0	0	68%	$0	$111,962
Bus Intelligence Technical Analyst (5)	80,431	68%	$54,643	75,181	68%	$51,077	53,610	68%	$36,422	55,218	68%	$37,514	56,875	68%	$38,640	$218,295
CCS Analyst (3)	173,635	68%	$117,259	134,502	68%	$90,832	86,776	68%	$58,601	89,379	68%	$60,360	92,061	68%	$62,170	$389,222
Compute Platform Engineering	8,418	68%	$5,720	15,897	68%	$10,801	0	68%	$0	0	68%	$0	0	68%	$0	$16,521
Database Administration	777	66%	$514	2,001	66%	$1,323	0	66%	$0	0	66%	$0	0	66%	$0	$1,837
Telecomm Design (2)	14,181	68%	$9,607	14,606	68%	$9,896	45,134	68%	$30,578	30,992	68%	$20,997	31,922	68%	$21,627	$92,704
Distribution Mgmt System Team (4)	512,592	65%	$334,094	538,156	65%	$350,756	103,166	65%	$67,241	127,874	65%	$83,345	109,449	65%	$71,336	$906,772
Enterprise Applications Admin (2)	29,823	69%	$20,562	14,056	69%	$9,691	12,712	69%	$8,765	13,093	69%	$9,028	13,486	69%	$9,299	$57,345
Enterprise Application Development	23,828	68%	$16,194	6,857	68%	$4,661	0	68%	$0	0	68%	$0	0	68%	$0	$20,855
Ent Svc Bus Integration (7)	97,431	69%	$67,130	45,366	69%	$31,257	5,664	69%	$3,902	5,834	69%	$4,019	6,009	69%	$4,140	$110,449
Enterprise Supporting Services	4,247	68%	$2,879	30,620	68%	$20,755	0	68%	$0	0	68%	$0	0	68%	$0	$23,633
GIS Analyst 2)	37,649	68%	$25,625	37,342	68%	$25,416	4,438	68%	$3,021	4,571	68%	$3,111	4,708	68%	$3,205	$60,377
Hardware Support	1,629	73%	$1,195	6,151	73%	$4,514	0	73%	$0	0	73%	$0	0	73%	$0	$5,709
Identity Access Management	0	67%	$0	17,106	67%	$11,398	0	67%	$0	0	67%	$0	0	67%	$0	$11,398
Manager (3)	27,903	63%	$17,682	28,740	63%	$18,213	29,602	63%	$18,759	30,490	63%	$19,322	31,405	63%	$19,902	$93,878
Network Infrastructure Services	22,644	69%	$15,611	19,893	69%	$13,714	0	69%	$0	0	69%	$0	0	69%	$0	$29,325
OMS Analyst	293,950	66%	$195,155	282,269	66%	$187,400	0	66%	$0	0	66%	$0	0	66%	$0	$382,556
OT Network Specialist	61,636	67%	$41,257	17,571	67%	$11,762	0	67%	$0	0	67%	$0	0	67%	$0	$53,019
Program Management	143,519	65%	$93,522	142,728	65%	$93,006	147,009	65%	$95,796	151,420	65%	$98,670	155,962	65%	$101,631	$482,626
Project Management (3)	260,678	67%	$174,302	257,758	67%	$172,349	37,927	67%	$25,360	19,533	67%	$13,060	20,119	67%	$13,452	$398,523
SAP Developer (2)	53,862	67%	$35,973	19,263	67%	$12,865	0	67%	$0	0	67%	$0	0	67%	$0	$48,839
Information Security	2,135	68%	$1,445	8,062	68%	$5,456	0	68%	$0	0	68%	$0	0	68%	$0	$6,901
Storage & Data Protection	4,118	68%	$2,815	12,019	68%	$8,216	0	68%	$0	0	68%	$0	0	68%	$0	$11,031
SAP Security (2)	4,180	68%	$2,846	0	68%	$0	0	68%	$0	0	68%	$0	0	68%	$0	$2,846
Business Technology Support Staff (2)	197,262	71%	$139,623	225,755	71%	$159,790	232,528	71%	$164,584	239,504	71%	$169,522	246,689	71%	$174,607	$808,126
Supervisor (Customer Care)	30,250	65%	$19,624	0	65%	$0	0	65%	$0	0	65%	$0	0	65%	$0	$19,624
Telephone Developer	23,747	67%	$15,959	25,212	67%	$16,943	0	67%	$0	0	67%	$0	0	67%	$0	$32,902
Revenue Analyst (3)	11,146	79%	$8,785	0	79%	$0	0	79%	$0	0	79%	$0	0	79%	$0	$8,785
Revenue Protection Rep (IBEW)	47,940	72%	$34,752	369,413	72%	$267,785	387,552	72%	$280,934	405,924	72%	$294,251	425,048	72%	$308,114	$1,185,834
Process Coordinator (Customer Care)	25,378	66%	$16,784	48,794	66%	$32,269	0	66%	$0	0	66%	$0	0	66%	$0	$49,053
Customer Care Supervisor	26,188	66%	$17,194	50,350	66%	$33,059	0	66%	$0	0	66%	$0	0	66%	$0	$50,253
Customer Operations Supervisor (6)	26,376	73%	$19,379	28,940	73%	$21,262	0	73%	$0	0	73%	$0	0	73%	$0	$40,642
Marketing Specialist (2)	63,876	70%	$44,965	0	70%	$0	0	70%	$0	0	70%	$0	0	70%	$0	$44,965
Digital & User Experience Staff	7,109	72%	$5,089	7,018	72%	$5,023	0	72%	$0	0	72%	$0	0	72%	$0	$10,113
Supervisor/Lead (Marking/Corp. Communications)	9,415	66%	$6,231	9,293	66%	$6,151	0	66%	$0	0	66%	$0	0	66%	$0	$12,382
Retail Product Developer	46,702	67%	$31,389	89,793	67%	$60,351	0	67%	$0	0	67%	$0	0	67%	$0	$91,740
Retail Prod Delivery Supervision	34,800	67%	$23,427	70,094	67%	$47,188	0	67%	$0	0	67%	$0	0	67%	$0	$70,615
R&D Engineer (3)	68,714	71%	$48,842	70,776	71%	$50,307	72,899	71%	$51,816	75,086	71%	$53,371	77,338	71%	$54,972	$259,307
Office Process Support	26,712	85%	$22,602	27,514	85%	$23,280	28,339	85%	$23,979	29,189	85%	$24,698	30,065	85%	$25,439	$119,998
Customer Solutions Planning (3)	18,154	67%	$12,105	0	67%	$0	0	67%	$0	0	67%	$0	0	67%	$0	$12,105
Product Svc Specialist/Coordinator	77,275	70%	$53,855	79,593	70%	$55,471	81,981	70%	$57,135	84,440	70%	$58,849	86,973	70%	$60,615	$285,926
Sr. Product Service Coordinator	14,174	66%	$9,354	14,599	66%	$9,635	15,037	66%	$9,924	15,488	66%	$10,222	15,953	66%	$10,529	$49,664
Process Coordinator (DES Implementation)	10,259	65%	$6,636	10,126	65%	$6,551	0	65%	$0	0	65%	$0	0	65%	$0	$13,187
Accounting Professional (2)	13,505	73%	$9,877	13,910	73%	$10,173	14,327	73%	$10,478	14,757	73%	$10,793	15,199	73%	$11,116	$52,438
Manager Distributed Energy Strategy	22,639	64%	$14,377	23,318	64%	$14,808	24,017	64%	$15,253	24,738	64%	$15,710	25,480	64%	$16,182	$76,330
Analyst GIS	17,716	72%	$12,729	18,562	72%	$13,337	0	72%	$0	0	72%	$0	0	72%	$0	$26,066
Distribution System Operator (2)	143,293	65%	$92,959	177,483	65%	$115,139	5,773	65%	$3,745	5,946	65%	$3,857	6,124	65%	$3,973	$219,674
Dist Sys Planning Engineer	14,614	68%	$9,988	26,341	68%	$18,003	0	68%	$0	0	68%	$0	0	68%	$0	$27,991
Dist Ops Engineer (6)	272,534	72%	$196,194	252,576	72%	$181,827	247,275	72%	$178,010	254,693	72%	$183,350	262,334	72%	$188,851	$928,232
GIS Data Tech	6,147	76%	$4,670	6,331	76%	$4,810	0	76%	$0	0	76%	$0	0	76%	$0	$9,479
T&D Maintenance Engineer	15,615	67%	$10,493	28,146	67%	$18,914	0	67%	$0	0	67%	$0	0	67%	$0	$29,407
Distribution Planning Supervision (2)	53,890	64%	$34,252	61,674	64%	$39,200	12,705	64%	$8,075	13,086	64%	$8,317	13,479	64%	$8,567	$98,412
Training Staff	1,763	65%	$1,154	132,572	65%	$86,780	0	65%	$0	0	65%	$0	0	65%	$0	$87,935
Settlements Staff	3,820	70%	$2,664	3,934	70%	$2,744	4,052	70%	$2,826	4,174	70%	$2,911	4,299	70%	$2,998	$14,144
Business Transformation Staff (2)	173,571	65%	$113,109	185,163	65%	$120,664	39,459	65%	$25,714	40,643	65%	$26,485	41,862	65%	$27,280	$313,252
Bus Tech Analyst	41,156	71%	$29,370	56,105	71%	$40,039	0	71%	$0	0	71%	$0	0	71%	$0	$69,409
Manager/Supervisor (2) (Dist. Planning & Ops)	19,961	65%	$13,072	20,560	65%	$13,465	21,177	65%	$13,868	21,812	65%	$14,285	22,467	65%	$14,713	$69,403
Training	0	70%	$0	148,461	70%	$104,313	0	70%	$0	0	70%	$0	0	70%	$0	$104,313
DT-GA Line Supervsr	29,809	8%	$2,236	73,688	8%	$5,527	75,899	8%	$5,692	78,176	8%	$5,863	80,521	8%	$6,039	$25,357
GA Line Supervisor (2) (Grid Assets)	107,499	62%	$67,117	148,328	62%	$92,608	32,277	62%	$20,152	22,164	62%	$13,838	22,828	62%	$14,253	$207,968
Substation Mgmt/Supervision	10,780	68%	$7,278	17,817	68%	$12,029	0	68%	$0	0	68%	$0	0	68%	$0	$19,307
Dist Electrical Worker	2,558	70%	$1,797	7,025	70%	$4,937	0	70%	$0	0	70%	$0	0	70%	$0	$6,734
DT-Meter Technician (2)	220,105	8%	$16,508	213,372	8%	$16,003	132,207	8%	$9,916	49,518	8%	$3,714	51,003	8%	$3,825	$49,965
Meter Technician (2)	120,038	71%	$85,635	159,320	71%	$113,659	98,289	71%	$70,119	51,059	71%	$36,425	52,591	71%	$37,518	$343,357
Metering Prog Support	27,167	72%	$19,581	31,980	72%	$23,050	0	72%	$0	0	72%	$0	0	72%	$0	$42,631
Service Dispatcher Sub	5,192	82%	$4,261	14,708	82%	$12,070	0	82%	$0	0	82%	$0	0	82%	$0	$16,332
DT-Electrical Technician	13,942	8%	$1,046	0	8%	$0	0	8%	$0	0	8%	$0	0	8%	$0	$1,046
Electrical Technician	54,139	68%	$36,711	0	68%	$0	0	68%	$0	0	68%	$0	0	68%	$0	$36,711
DT-Telecommunications Technician	8,267	8%	$620	0	8%	$0	0	8%	$0	0	8%	$0	0	8%	$0	$620
Telecommunications Technician (7)	57,872	70%	$40,737	7,269	70%	$5,117	37,437	70%	$26,352	30,848	70%	$21,714	31,773	70%	$22,366	$116,287
Dist Process Support - Line	9,306	87%	$8,091	23,680	87%	$20,590	0	87%	$0	0	87%	$0	0	87%	$0	$28,681
Estimator (4)	5,824	74%	$4,286	5,998	74%	$4,414	30,891	74%	$22,732	25,455	74%	$18,732	26,218	74%	$19,293	$69,457
Service Dispatcher Line (5)	191,148	81%	$154,998	258,914	81%	$209,947	0	81%	$0	0	81%	$0	0	81%	$0	$364,945
Inspector (2)	0	70%	$0	0	70%	$0	33,468	70%	$23,328	34,472	70%	$24,027	35,506	70%	$24,748	$72,103
Troubleshooter	21,341	68%	$14,475	30,224	68%	$20,501	0	68%	$0	0	68%	$0	0	68%	$0	$34,976
			$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	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
			$0	0		$0	0		$0	0		$0	0		$0	$0
			$0	0		$0	0		$0	0		$0	0		$0	$0
Total:	**$4,592,923**		**$2,974,874**	**$5,237,061**		**$3,423,770**	**$2,313,905**		**$1,479,851**	**$2,165,651**		**$1,428,070**	**$2,194,274**		**$1,447,591**	**$10,754,156**

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.*

______ 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 https://www.energy.gov/eere/funding/downloads/sample-indirect-rate-proposal-and-profit-compliance-audit, 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.

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. Only travel that is directly associated with this award should be included as a direct travel cost to the award.
4. Federal travel regulations are contained within the applicable cost principles for all entity types.
5. 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.
6. Columns E, F, G, H, I, J, and K are per trip.
7. The number of days is inclusive of the day of departure and the day of return.
8. Recipients should enter City and State (or City and Country for International travel) in the Depart from and Destination fields.
9. 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):

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. contractor 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 contractor quote for all equipment items over $50,000 in price. If the contractor quote is not an exact price match, provide an explanation in the additional explanation section below. If a contractor 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						
3,4,5	**EXAMPLE!!!** Thermal shock chamber	2	$70,000	$140,000	Vendor Quote - Attached	Reliability testing of PV modules- Task 4.3
2,4	Computer Hardware	Various	$1,586,000	$1,586,000	Historical Purchases of Similar Equipment and Market Analysis	Equipment required to test edge computing sensors and DI applications for Grid Edge intelligence. Servers and storage arrays required to enable OSI Modernization.
2	Battery backup systems for Testing	4	$7,500	$30,000	Market Analysis	Equipment required to test edge computing sensors and DI applications for Grid Edge intelligence.
2	Impedance equipment for testing	1	$8,000	$8,000	Market Analysis	Equipment required to test edge computing sensors and DI applications for Grid Edge intelligence.
2	Solar inverters and solar modules for testing	6	$5,000	$30,000	Market Analysis	Equipment required to test edge computing sensors and DI applications for Grid Edge intelligence.
	Budget Period 1 Total			$1,654,000		
Budget Period 2						
4	Computer Hardware	Various	$600,000	$600,000	Historical Purchases of Similar Equipment and Market Analysis	Servers and storage arrays required to support OMS Modernization.
3	Remote Terminal Unit (RTU)	1	$4,500	$4,500	Historical Purchases of Similar Equipment and Market Analysis	Remote Terminal Unit (RTU) to enable SCADA connection to Advanced DERMS to create Virtual Power Plant.
	Budget Period 2 Total			$604,500		
Budget Period 3						
3	Fiber Optic Cable	Various	$550,000	$550,000	Market analysis	Fiber optic cable and equipment required to enable DERMS fiber based communications.
3	Remote Terminal Unit (RTU)	1	$4,500	$4,500	Historical Purchases of Similar Equipment and Market Analysis	Remote Terminal Unit (RTU) to enable SCADA connection to Advanced DERMS to create Virtual Power Plant.
	Budget Period 3 Total			$554,500		
Budget Period 4						
3	Computer Hardware	Various	$95,000	$95,000	Vendor Budgetary Estimate	Servers and storage arrays required to support Advanced DERMS enhancements.
3	Fiber Optic Cable	Various	$550,000	$550,000	Market Analysis	Fiber optic cable and equipment required to enable DERMS fiber based communications.
3	Remote Terminal Unit (RTU)	1	$4,500	$4,500	Historical Purchases of Similar Equipment and Market Analysis	Remote Terminal Unit (RTU) to enable SCADA connection to Advanced DERMS to create Virtual Power Plant.
	Budget Period 4 Total			$649,500		
Budget Period 5						
3	Fiber Optic Cable	Various	$550,000	$550,000	Vendor Budgetary Estimate	Fiber optic cable and equipment required to enable DERMS fiber based communications.
3	Remote Terminal Unit (RTU)	1	$4,500	$4,500	Historical Purchases of Simliar Equipment and Market Analysis	Remote Terminal Unit (RTU) to enable SCADA connection to Advanced DERMS to create Virtual Power Plant.
	Budget Period 5 Total			$554,500		
	TOTAL EQUIPMENT			**$4,017,000**		

Additional Explanation (as needed): All equipment will be purchased via competitively bid contracts.

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. contractor 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		
	TOTAL SUPPLIES			**$0**		

Additional Explanation (as needed):

f. Contractual

INSTRUCTIONS - PLEASE READ!!!

1. The entity completing this form must provide all costs related to sub-recipients, contractors, and FFRDC partners in the applicable boxes below.

2. Sub-recipients (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) 25% of total award costs. These sub-recipient forms may be completed by either the sub-recipients themselves or by the preparer of this form. The budget totals on the sub-recipient's forms must match the sub-recipient 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. contractor status.

3. Contractors: List all contractors supplying commercial supplies or services used to support the project. For each Contractor cost with total project costs of $100,000 or more, a Contractor quote must be provided. A contractor 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.contractor 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	Sub-Recipient Unique Entity Identifier (UEI)	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**
6	Wilton Rancheria			$451,370	$464,551	$478,127	$492,111	$506,514	**$2,392,674**
									$0
									$0
									$0
									$0
									$0
			Sub-total	**$451,370**	**$464,551**	**$478,127**	**$492,111**	**$506,514**	**$2,392,674**

SOPO Task #	Contractor 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.	Contractor for developing robotics to perform lens inspection. Estimate provided by contractor.	$32,900	$86,500				**$119,400**
1,5,7	TBD Professional Services	Contractors to support Community Benefit Plan, job training, and measurement and verification (M&V) work. Installation of intelligent two-way load control switches. Cost estimates based off similar historical work contracted by SMUD. Will select vendors through RFP process.	$999,318	$294,000	$294,000	$294,000	$324,000	**$2,205,318**
2,5	ITRON	(b)(4) [redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
3,4	OSI	(b)(4)	(b)(4)	(b)(4)	(b)(4)	(b)(4)	(b)(4)	(b)(4)
2,6	TBD Contractor	Installation and M&V services associated with edge computing sensor installation. M&V and job training program work for Wilton Rancheria. Cost estimates based off similar historical work contracted by SMUD. Will select vendors through RFP process.	$3,388,750	$15,301,250	$3,645,000	$3,645,000	$3,645,000	**$29,625,000**
								$0
		Sub-total	**$20,669,283**	**$44,345,211**	**$6,627,484**	**$5,668,318**	**$5,735,197**	**$83,045,493**

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**

	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Project Total
Total Contractual	**$21,120,653**	**$44,809,762**	**$7,105,611**	**$6,160,429**	**$6,241,711**	**$85,438,167**

Additional Explanation (as needed):

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 contractor 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		
	TOTAL CONSTRUCTION	**$0**		

Additional Explanation (as needed):

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	
5	**EXAMPLE!!!** Grad student tuition - tasks 1-3	$16,000	Established UCD costs	Support of graduate students working on project
5	Energy Efficiency Incentive/Rebate	$337,500	SMUD stablished incentive baseline to achieved critical threshold for demand response participation.	Incentives paid to program participants in intelligent 2-way load control switch program for shedding load during demand response events.
2,4,5	Software	$5,652,378	Vendor Budgetary Quote. Confidential - will be provided during contract negotiation.	Software required to enable DI at the Grid Edge, OMS Modernization, Intelligent Load Control Switch program.
	Budget Period 1 Total	$5,989,878		
			Budget Period 2	
5	Energy Efficiency Incentive/Rebate	$450,000	SMUD stablished incentive baseline to achieved critical threshold for demand response participation.	Incentives paid to program participants in intelligent 2-way load control switch program for shedding load during demand response events.
2,3,5	Software	$1,400,253	Vendor Budgetary Quote. Confidential - will be provided during contract negotiation.	Software required to enable DI at the Grid Edge, Advanced DERMS, and Intelligent Load Control Switch Program.
	Budget Period 2 Total	$1,850,253		
			Budget Period 3	
5	Energy Efficiency Incentive/Rebate	$562,500	SMUD stablished incentive baseline to achieved critical threshold for demand response participation.	Incentives paid to program participants in intelligent 2-way load control switch program for shedding load during demand response events.
2,3,5	Software	$1,401,128	Vendor Budgetary Quote. Confidential - will be provided during contract negotiation.	Software required to enable DI at the Grid Edge, Advanced DERMS, and Intelligent Load Control Switch Program.
	Budget Period 3 Total	$1,963,628		
			Budget Period 4	
5	Energy Efficiency Incentive/Rebate	$675,000	SMUD stablished incentive baseline to achieved critical threshold for demand response participation.	Incentives paid to program participants in intelligent 2-way load control switch program for shedding load during demand response events.
2,3,5	Software	$1,402,003	Vendor Budgetary Quote. Confidential - will be provided during contract negotiation.	Software required to enable DI at the Grid Edge, Advanced DERMS, and Intelligent Load Control Switch Program.
	Budget Period 4 Total	$2,077,003		
			Budget Period 5	
5	Energy Efficiency Incentive/Rebate	$787,500	SMUD stablished incentive baseline to achieved critical threshold for demand response participation.	Incentives paid to program participants in intelligent 2-way load control switch program for shedding load during demand response events.
2,3,5	Software	$1,402,878	Vendor Budgetary Quote. Confidential - will be provided during contract negotiation.	Software required to enable DI at the Grid Edge, Advanced DERMS, and Intelligent Load Control Switch Program.
	Budget Period 5 Total	$2,190,378		
	TOTAL OTHER DIRECT COSTS	**$14,071,140**		

Additional Explanation (as needed):

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. NOTE: A Recipient who elects to employ the 10% de minimis Indirect Cost rate **cannot claim resulting cost as a Cost Share contribution, nor can the Recipient claim "unrecovered indirect costs" as a Cost Share contribution**. Neither of these costs can be reflected as actual indirect cost rates realized by the orgnaization, and therefore are not verifiable in the Recipient records as required by Federal Regulation (200.306(b)(1))

5.. 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	93.11%	93.11%	93.11%	93.11%	93.11%		*Example: Labor + Fringe*
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	$7,046,376	$8,064,100	$3,532,366	$3,346,114	$3,390,941	**$25,379,896**	
G&A Costs						**$0**	
FCCM Costs, if applicable						**$0**	
OTHER Indirect Costs						**$0**	
Total indirect costs requested:	**$7,046,376**	**$8,064,100**	**$3,532,366**	**$3,346,114**	**$3,390,941**	**$25,379,896**	

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.

___x___ 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.
_____ The organization does not have a current, federally approved indirect cost rate agreement and has provided an indirect rate proposal in support of the proposed costs.
_____ This organization has elected to apply a 10% de minimis rate in accordance with 2 CFR 200.414(f).

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).

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. **Contractors may not provide cost share.** 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. **Contractors 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**
SMUD	Cash	SMUD will provide match dollars for part of labor, equipment, and other costs associated with this project	$21,463,667	$36,184,898	$16,471,734	$15,334,656	$15,512,882	**$104,967,835**
Wilton Rancheria	Cash	Wilton Rancheria will provide match dollars for half of its portion of this project	$225,685	$232,275	$239,064	$246,056	$253,257	**$1,196,337**
								$0
								$0
								$0
								$0
								$0
								$0
								$0
								$0
		TOTAL COST SHARE	**$21,689,351**	**$36,417,174**	**$16,710,797**	**$15,580,711**	**$15,766,139**	**$106,164,172**

Total Project Cost: $156,164,172 **Cost Share Percent of Award: 68.0%**

Additional Explanation (as needed):

ATTACHMENT 1 - STATEMENT OF PROJECT OBJECTIVES

- **OBJECTIVES**

In response to DE-FOA-0002740, Topic Area 2, SMUD, with partner Wilton Rancheria Tribe of Miwok Indians and technology providers Itron and Open Systems International (OSI), seeks to to deploy an advanced, large-scale, smart grid infrastructure project with an emphasis on equitable community benefits and broader grid reliability – Connected Clean PowerCity (project). The project integrates advanced smart grid components with site-specific Distributed Energy Resources (DERs) at the Wilton Rancheria Miwok tribal community, helping SMUD's grid better interact with technology, devices, and customers at its edge while establishing improved visibility, management, and control through real-time grid management.

- **SCOPE OF WORK**

The scope of work includes six core elements of the project.

- Element 1: Distributed, Grid-Edge Intelligence at Scale.
- Element 2: Advanced Distributed Energy Resource Management System (DERMS)
- Element 3: Outage Management System (OMS) Modernization
- Element 4: Enabling Technology and Systems
- Element 5: Integrated Case Study: Wilton Rancheria

This project will be conducted over five, year-long budget periods

Budget Period	**Task Status**
Budget Period 1: Overall Project Management & Planning	Commences Tasks 1, 2, 3, 4, 5, 6, 7
Budget Period 2: Deployment Phase 1	Continues Task 1, 3, 5, 6, 7; concludes Task 2, 4
Budget Period 3: Deployment Phase 2	Continues Tasks 1, 3, 5, 6, 7
Budget Period 4: Deployment Phase 3	Continues Tasks 1, 3, 5, 6, 7
Budget Period 5: Project Closure	Concludes 1, 3, 5, 6, 7

- **TASKS TO BE PERFORMED**

The following tasks will be conducted across **All Budget Periods.**

Task 1 – Overall Project Management, Planning and Closure (M1 - M6)

Lead: SMUD

Task 1.1 – Project Management and Planning (PMP) (M1)

- Develop, maintain, and implement the PMP (Deliverable 1.1.1.)

Task 1.2 – National Environmental Policy Act Compliance (M2)

- Comply with the National Environmental Policies Act (NEPA), Deliverable 1.2.1: NEPA Compliance Documentation.

Task 1.3 – Cybersecurity Plan (CSP) (M3)

- Develop, maintain and implement the CSP, Deliverable 1.3.1

Task 1.4 - Risk Management Plan (M4)

- Develop, maintain and implement the RMP, Deliverable 1.4.1

Task 1.5 – Kickoff Meeting (M5) and Continuation Briefings

- Project kickoff meeting, Deliverable 1.5.1: Kickoff Briefing
- Annual continuation briefings, Deliverable 1.5.2: Pre-Continuation Briefings

Task 1.6 – Annual Progress Reports and Community Benefits Reports (M6)

- SMUD will submit annual progress reports to DOE summarizing progress, Deliverable 1.6.1: Annual Project Progress Reports.

Task 1.7 - Project Closure (M7)

- Final Project Briefing and Final Report Deliverables 1.7.1 and 1.7.2

Task 2 – Distributed Intelligence at the Grid Edge (M8 - M10)

Lead: SMUD, Support: Itron, and 3rd party contractor(s)

Task 2.1 – Pre-Deployment Readiness (M8)

SMUD will:

- Setup Budget and Program Management Structure
- Develop Deliverable 2.1.1: Strategic Deployment Plans
- Define Edge Computing Deployment Strategy
- Setup and perform DI App Workshops across the Project Teams
- Setup DI testing and validation Lab
- Cyber Security System Review/Audit
- Place initial Meter and App orders.
- Finalize contracts for meter installation and electrical repair.
- Deploy path to production System Platform
- Perform pre-Production Fit for Purpose Testing on Meters, Software, and DI apps.
- Execute pre-deployment Customer engagement and outreach plans.

Task 2.2 – Targeted Community Deployment (M9)

SMUD will:

- Execute Targeted Community Deployment Phase of the Strategic Deployment plan
- Monitor, analyze and adjust plan as needed.
- Execute Targeted Community Deployment Customer engagement and outreach, Deliverable 2.2.1: Customer Engagement Feedback
- Integrate Location Awareness and Transformer Health DI Apps with DERMs.
- Enable “Meter as an Access Point” and “My Account” Integration

Task 2.3 – Deployment at Scale (M10)

SMUD will:

- Deployment at Scale Phase of the Strategic Deployment plan.
- Deliverable 2.3.1: Updated Strategic Deployment plan
- Deliverable 2.3.2: Updated Customer engagement Feedback
- Integrate location and transformer Health with our OMS
- Provide real-time Meter Consumption data for customers

Task 3 – Advanced Distributed Energy Resource Management System (DERMS) (M11 - M13)

Lead: SMUD, Support: Open Systems International (OSI)

Task 3.1 – DERMS Enhanced Economic Performance & Market Participation (M11)

- Pre-Factory Acceptance Testing (FAT) and cleanup
- Conduct full FAT and variance resolution.
- Train distribution system operators on the use of the new functionality.

Task 3.2 – DERMS NextGen Technology Integrations (M12)

- Develop detailed design requirements, costs, and timelines.
- Pre-FAT testing and cleanup
- Conduct FAT and variance resolution.
- Train distribution system operators on the use of the new functionality.

Task 3.3 – Enhance Distribution System Communication (M13)

- Confirm and synchronize deployment locations with larger project
- Issue RFP and award fiber installation contract(s)
- Deploy fiber (design & construction)
- Test and commission fiber into production

Task 4 – OMS Modernization (M14 – M17)

Lead: SMUD, Support: OSI

Task 4.1 – IT Build (M14)

- Finalize the overall hardware, software, and network architecture
- Order and setup the equipment/hardware
- Integrate and install software builds for configuration activities.

Task 4.2 – System Configuration (M15)

- Conduct detailed data engineering and design workshops
- OMS configuration to meet the functional requirements

Task 4.3 – Testing (M16)

- Conduct testing to validate system design and configuration.
- Final integration/user acceptance testing

Task 4.4 – Commissioning (M17)

- Final go/no-go and go-live readiness assessments
- Post activation monitoring to transition to commissioning

Task 5 – Enabling Technology & Systems (M18)

Lead: SMUD, Support: Itron

Task 5.1 – Switch Deployment (M18)

- Deploy up to 22,500 intelligent 2-way load control switches/sensors
- Conduct event dispatch, monitoring, and reporting during summer peak event season

Task 6 – Wilton Rancheria (M19 - M20)

Lead: Wilton Rancheria, Support: SMUD

Tribal assessment of building electrification opportunities (PV, battery storage, heat pump water heaters, and EVSEs). Education and marketing campaigns for up to 70 Tribal members who own their homes. Deploy electrification technologies and edge computing sensors at identified

locations and integrate with ADMS, DERMS, and OMS to increase grid resiliency and provide a level of energy independence for Tribal members.

Task 6.1 - Electrification & DER Integration (M19)

- Installation of edge computing sensors and intelligent load control switches
- Electrification and DER Integration with ADMS, DERMS and OMS

Task 6.2 - Integrated Case Study Results (M20)

- Equity/tribally focused case study to integrate multiple smart grid benefits
- Provide data/information on outcomes

Task 7 – Community and Labor Engagement and Assuring Community Benefits (M21 - M24)
Lead: SMUD

Task 7.1 – Community and Labor Engagement (M21)

- Identify relevant community and labor Stakeholders and appropriate engagement methods; create engagement materials and mechanisms; and engage.
- Identify and potential and relevant labor agreements; develop as needed.
- Develop a Community & Labor Agreement with Wilton Rancheria.

Task 7.2 – Investing in American Workforce (M22)

- Comply with safety regulations and provide fair wages.
- Partner with labor unions to support employees and developing trainings with partners.
- Encourage participation in professional development opportunities for existing staff.
- Promote local participation in SMUD-supported training opportunities.

Task 7.3 – Diversity, Equity, Inclusion, and Accessibility (M23)

- Provide additional bias training to project team and track team demographics.
- Develop tribal engagement initiative.
- Provide job training opportunities and employ an equitable and diverse workforce.
- Identify and engage with underrepresented businesses.
- Share lessons learned with labor force and minority-serving institutions.

Task 7.4 – Justice40 Initiative (M24)

- Develop plan, implement plan, and report on overall project benefits.
- Develop plan, implement plan, and report on potential negative impacts and cumulative burdens.
- Conduct project community education; share project model with utilities

- **DELIVERABLES**

In addition to the reports specified in the "Federal Assistance Reporting Checklist", SMUD will provide the following to the DOE Project Officer:

- **Deliverable 1.1.1**: Project Management Plan
- **Deliverable 1.2.1**: NEPA Compliance Documentation
- **Deliverable 1.3.1**: Cybersecurity Plan
- **Deliverable 1.4.1:** Risk Management Plan
- **Deliverable 1.5.1**: Kickoff Briefing
- **Deliverable 1.5.2**: Pre-Continuation Briefings

- **Deliverable 1.6.1**: Annual Project Progress Reports
- **Deliverable 1.7.1:** Final Project Briefing
- **Deliverable 1.7.2**: Final Report
- **Decision 2.1.1:** Go/No Go decision in Production for Riva Meter Install
- **Deliverable 2.1.2**: Strategic Deployment Plans
- **Deliverable 2.2.1**: Customer Engagement Feedback
- **Deliverable 2.3.1**: Updated Strategic Full Deployment plan
- **Deliverable 2.3.2**: Updated Customer engagement Feedback
- **Decision 3.1.1:** Go/No Go decision for DERMS Enhanced Economic Performance Production Upgrade
- **Deliverables 3.1.2:** OpenADR protocol set extensions for dynamic sets of resources to be grouped at granular nodes of the distribution system.
- **Deliverables 3.1.3:** Standardized representative architecture, procedures, and specifications for integration with aggregators and manufacturers of connected DERs.
- **Deliverables 3.1.4:** Tools and documentation to support the interoperable integration of storage with utility management systems via the MESA-DER standard.
- **Deliverables 3.1.5:** Certification test procedures and tools for MESA Standards Alliance for interoperable integration of BESS.
- **Decision 3.2.1:** Go/No Go decision for DERMS NextGen Tech Integrations Production Upgrade
- **Deliverables 3.3.1:** Install up to 100 miles of fiber
- **Deliverables 3.3.2:** SMUD will measure and report the learnings from the move to more frequent interval data.
- **Decision 3.3.1:** Go/No Go for Installation Locations and Designs
- **Decision 4.3.1:** Go/No Go decision for OMS Pre-Factory Acceptance Testing
- **Decision 4.4.1:** Go/No Go decision for OMS Commissioning Production Cutover
- **Deliverable 5.1.1**: Expand load reduction capacity by 12.2 MW by Fall 2028
- **Decision 6.1.1:** Go/No Go decision for Wilton Rancheria installation
- **Deliverable 6.2.1**: Report on Integrated Case Study
- **Deliverable 7.1.1:** Facilitate two-way community and labor engagements
- **Deliverable 7.2.1:** Develop the Local Clean Energy Workforce
- **Deliverable 7.3.1:** Equitably disseminate outcomes
- **Deliverable 7.4.1:** Socialize Project Impacts to Maximize Community Benefits

- **BRIEFINGS AND TECHNICAL PRESENTATIONS**
  - **Kickoff Briefing** – Not more than 30 days after submission of the PMP, SMUD will prepare and present a project summary briefing as part of a Project Kickoff Meeting.
  - **Pre-Continuation Briefing** – No fewer than 90 days prior to the planned start of any budget period, SMUD brief the DOE on results and progress to date.
  - **Final Project Briefing** – No fewer than 30 days prior to the end of the project, SMUD will prepare and present a Final Project Briefing.
  - **Other Briefings** – SMUD will prepare other briefings at DOE's request.

Clean Connected PowerCity

Grid Resilience and Innovation Partnership (GRIP)

DE-FOA-0002740

LETTERS OF COMMITMENT

Wilton Rancheria

9728 Kent Street, Elk Grove, CA 95624

Mrs. Maria Duaime Robinson
Director, Grid Deployment Office
U.S. Department of Energy
1000 Independence Ave., SW
Washington, D.C. 20585

3/14/2023

RE: Letter of Commitment for the SMUD Proposal to the Grid Resilience and Innovation Partnerships (GRIP) Program

Dear Mrs. Robinson,

Wilton Rancheria is pleased to support SMUD in its application to the Department of Energy's DE-FOA- 0002740. SMUD, Itron, Inc., OSI and Wilton Rancheria will deploy a multi-faceted, resiliency- and equity-focused smart grid advancement and deployment project that will provide a highly replicable, scalable foundation for modernizing SMUD's electricity grid.

CONNECTED CLEAN POWERCITY's goal is to enable the zero-carbon grid of the future by deploying technologies and processes that improve service reliability, support core community benefits, provide equitable energy access to all, and at a best-in-class cost. The Project includes six core elements to provide an ecosystem of intelligence that can manage the grid more effectively than the traditional top-down methodology of visibility and control. This more effective grid management approach can be replicated at scale at other utilities across the county.

Wilton Rancheria and SMUD have long worked together on projects to preserve and maintain Tribal cultural resources in the Sacramento area. This would be the first time that Wilton and SMUD will be working on projects that provide sustainable and cost-effective electrification and energy generation opportunities for the Wilton Rancheria community and its members.

Wilton Rancheria will support the project by providing a program administrator and support recruitment for the electrification of Tribe and Tribal member owned homes and facilities to be fully integrated with the latest infrastructure and technology.

If you have any questions about the Wilton Rancheria's work for the project, please contact me at (916)683-6000 or jtarango@wiltonrancheria-nsn.gov

Sincerely,

Jesus Tarango

9728 Kent St.
Elk Grove, CA. 95624
(916)683-6000
jtarango@wiltonrancheria-nsn.gov

March 01, 2023

Mrs. Maria Duaime Robinson
Director, Grid Deployment Office
U.S. Department of Energy
1000 Independence Ave., SW
Washington, D.C. 20585

RE: Letter of Commitment for the SMUD Proposal to the Grid Resilience and Innovation Partnerships (GRIP) Program

Dear Mrs. Robinson,

Itron, Inc is pleased to support SMUD in its application to the Department of Energy's DE-FOA-0002740. SMUD, Wilton Rancheria, OSI, and Itron, Inc. will deploy a multi-faceted, resiliency- and equity-focused smart grid advancement and deployment project that will provide a highly replicable, scalable foundation for modernizing SMUD's electricity grid.

CONNECTED CLEAN POWERCITY's goal is to enable the zero-carbon grid of the future by deploying technologies and processes that improve service reliability, support core community benefits, provide equitable energy access to all, and at a best-in-class cost. The Project includes six core elements to provide an ecosystem of intelligence that can manage the grid more effectively than the traditional top-down methodology of visibility and control. This more effective grid management approach can be replicated at scale at other utilities across the county.

At Itron, we help our partners bring innovative solutions to the market that help drive efficiencies, improve the quality of service, and create more resourceful communities. Itron, Inc. is proud to have been partnering with SMUD for over 14 years to implement AMI and related smart grid solutions. Itron, Inc. will support the project by providing next-generation edge computing sensors with measurement capabilities (Gen5 Riva meters), associated software, and services to support the project.

Itron, Inc. encourages the DOE to fund the project. Should you have any questions regarding this support, please do not hesitate to contact Tony Foster at 925-899-6846 or Tony.Foster@itron.com.

Sincerely,

Joel Vach
Vice President – Tax and Corporate Treasurer
Itron, Inc.

OSI
An AspenTech® Business

Mrs. Maria Duaime Robinson
Director, Grid Deployment Office
U.S. Department of Energy
1000 Independence Ave., SW
Washington, D.C. 20585

March 8th, 2023

RE: Letter of Support for the SMUD Proposal to the Grid Resilience and Innovation Partnerships (GRIP) Program

Dear Mrs. Robinson,

OSI Digital Grid Management, an Aspen Technology Business (NASDAQ: AZPN) is pleased to support SMUD in its application to the Department of Energy's DE-FOA- 0002740. OSI will support SMUD in deploying a multi-faceted, resiliency- and equity-focused smart grid advancement and deployment project that will provide a highly replicable, scalable foundation for modernizing SMUD's electricity grid.

The CONNECTED CLEAN POWERCITY 's project goal is to enable the zero-carbon grid of the future by deploying technologies and processes that improve service reliability, support core community benefits, provide equitable energy access to all, and at a best-in-class cost. The Project includes six core elements to provide an ecosystem of intelligence that can manage the grid more effectively than the traditional top-down methodology of visibility and control. This more effective grid management approach can be replicated at scale at other utilities across the county.

For over 30 years, OSI has been providing a best-in-class portfolio of utility Operational Technology (OT) solutions including SCADA, Generation Management, Transmission Management, Distribution Management, Distributed Energy Resource Management, and Microgrid Management applications. SMUD has OSI's Advanced Distribution Management (ADMS) and Distributed Energy Management (DERMS) systems live managing their grid since 2022.

OSI has an impressive world-wide customer base with over 100 Distribution utility customers serving over 83 million customer meters and over 30 DERMS customers managing thousands of MW's of renewable power.

OSI helps our utilities partners create a more resilient grid while simultaneously helping them achieve their goals in sustainability and carbon reduction. OSI is a proud partner of SMUD and committed to providing world class control solutions, with several ongoing tracks of work to further expand the existing OSI system at SMUD. OSI is currently working with SMUD to define, scope, and implement a Phase 2, Phase 3 and Phase 4 of DERMS functionality as well as an Outage Management System (OMS). OSI values our partnership and plans for continuous collaboration to assist SMUD in achieving their forward-thinking vision.

OSI encourages the DOE to fund this project. If you have any questions about OSI's work for the project, please contact me at (763)-551-0559 or sally.jacquemin@aspentech.com

Sincerely,

Sally Jacquemin
Associate Vice President of Distribution and Smart Grid Business Unit
4104 Arrowhead Dr, Medina, MN 55340
(763)551-0559
sally.jacquemin@aspentech.com

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C.1352

OMB Number: 4040-0013
Expiration Date: 02/28/2025

1. * Type of Federal Action:
- [ ] a. contract
- [x] b. grant
- [ ] c. cooperative agreement
- [ ] d. loan
- [ ] e. loan guarantee
- [ ] f. loan insurance

2. * Status of Federal Action:
- [ ] a. bid/offer/application
- [x] b. initial award
- [ ] c. post-award

3. * Report Type:
- [x] a. initial filing
- [ ] b. material change

4. Name and Address of Reporting Entity:

- [ ] Prime
- [x] SubAwardee

** Name:* Wilton Rancheria

** Street 1:* 9278 Kent Street *Street 2:*

** City:* Elk Grove *State:* CA *Zip:* 95624

Congressional District, if known: CA-007

5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime:

Sacramento Municipal Utility District
6301 S St. Sacramento, CA 95817

6. * Federal Department/Agency:

Department of Energy

7. * Federal Program Name/Description:

Grid Infrastructure Deployment and Resilience

CFDA Number, *if applicable:* 81.254

8. Federal Action Number, *if known:*

9. Award Amount, *if known:*

$

10. a. Name and Address of Lobbying Registrant:

Prefix: ** First Name:* N/A *Middle Name:*

** Last Name:* N/A *Suffix:*

** Street 1:* N/A *Street 2:*

** City:* N/A *State:* *Zip:*

b. Individual Performing Services (including address if different from No. 10a)

Prefix: ** First Name:* N/A *Middle Name:*

** Last Name:* N/A *Suffix:*

** Street 1:* N/A *Street 2:*

** City:* N/A *State:* *Zip:*

11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when the transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

*** Signature:** Jesus Tarango

***Name:** *Prefix:* ** First Name:* JESUS *Middle Name:*

** Last Name:* Tarango *Suffix:*

Title: **Telephone No.:** **Date:** 3/16/2022

Federal Use Only:

Authorized for Local Reproduction
Standard Form - LLL (Rev. 7-97)

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!
Do not modify this template or any cells for formulas!

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.
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, contractors, 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 and 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 24 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	$225,685	$225,685			$451,370	50.00%	1/1/2024 to 12/31/2024
Budget Period 2	$232,275	$232,275			$464,551	50.00%	1/1/2025 to 12/31/2025
Budget Period 3	$239,064	$239,064			$478,127	50.00%	1/1/2026 to 12/31/2026
Budget Period 4	$246,056	$246,056			$492,111	50.00%	1/1/2027 to 12/31/2027
Budget Period 5	$253,257	$253,257			$506,514	50.00%	1/1/2028 to 12/31/2028
Total	$1,196,337	$1,196,337			$2,392,674	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	$171,629	$176,778	$182,081	$187,543	$193,170	$911,201	38.08%	
b. Fringe Benefits	$102,977	$106,067	$109,249	$112,526	$115,902	$546,720	22.85%	
c. Travel	$0	$0	$0	$0	$0	$0	0.00%	
d. Equipment	$0	$0	$0	$0	$0	$0	0.00%	
e. Supplies	$0	$0	$0	$0	$0	$0	0.00%	
f. Contractual								
Sub-recipient	$0	$0	$0	$0	$0	$0	0.00%	
Contractor	$0	$0	$0	$0	$0	$0	0.00%	
FFRDC	$0	$0	$0	$0	$0	$0	0.00%	
Total Contractual	$0	$0	$0	$0	$0	$0	0.00%	
g. Construction	$0	$0	$0	$0	$0	$0	0.00%	
h. Other Direct Costs	$12,000	$12,000	$12,000	$12,000	$12,000	$60,000	2.51%	
Total Direct Costs	$286,606	$294,844	$303,330	$312,069	$321,072	$1,517,921	63.44%	
i. Indirect Charges	$164,764	$169,707	$174,798	$180,042	$185,443	$874,753	36.56%	
Total Costs	$451,370	$464,551	$478,127	$492,111	$506,514	$2,392,674	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 contractors 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 hourly rate and the total direct personnel compensation will automatically calculate. Rate basis (e.g., rate negotiated for each hour worked on the project, 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)	Hourly Rate ($/Hr)	Total Budget Period 1	Time (Hrs)	Hourly Rate ($/Hr)	Total Budget Period 2	Time (Hrs)	Hourly Rate ($/Hr)	Total Budget Period 3	Time (Hrs)	Hourly Rate ($/Hr)	Total Budget Period 4	Time (Hrs)	Hourly Rate ($/Hr)	Total Budget Period 5			
1	Sr. Engineer **(EXAMPLE!!!)**	2000	$85.00	$170,000	200	$50.00	$10,000	200	$50.00	$10,000	200	$50.00	$10,000	200	$50.00	$10,000	2400	$190,000	
2	Technicians (2)	4000	$20.00	$80,000	0	$0.00	$0	0	$0.00	$0	0	$0.00	$0	0	$0.00	$0	4000	$80,000	
6	Education and Marketing Faciliator	192	$51.08	$9,807	192	$52.61	$10,102	192	$54.19	$10,405	192	$55.82	$10,717	192	$57.49	$11,038	960	$52,069	Standard Rate
6	Economic Development Director	192	$51.08	$9,807	192	$52.61	$10,102	192	$54.19	$10,405	192	$55.82	$10,717	192	$57.49	$11,038	960	$52,069	Standard Rate
6	Cultural Perseveration Lead	96	$51.08	$4,904	96	$52.61	$5,051	96	$54.19	$5,202	96	$55.82	$5,358	96	$57.49	$5,519	480	$26,034	Standard Rate
6	Training Facilitator	2400	$51.08	$122,592	2400	$52.61	$126,270	2400	$54.19	$130,058	2400	$55.82	$133,960	2400	$57.49	$137,978	12000	$650,858	Standard Rate
6	Program/Project Manager	192	$51.08	$9,807	192	$52.61	$10,102	192	$54.19	$10,405	192	$55.82	$10,717	192	$57.49	$11,038	960	$52,069	Standard Rate
6	Developer	96	$51.08	$4,904	96	$52.61	$5,051	96	$54.19	$5,202	96	$55.82	$5,358	96	$57.49	$5,519	480	$26,034	Standard Rate
6	Electrification Assessor	192	$51.08	$9,807	192	$52.61	$10,102	192	$54.19	$10,405	192	$55.82	$10,717	192	$57.49	$11,038	960	$52,069	Standard Rate
				$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	
				$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	
				$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	**3360**		**$171,629**	**3360**		**$176,778**	**3360**		**$182,081**	**3360**		**$187,543**	**3360**		**$193,170**	**16800**	**$911,201**	

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	
EXAMPLE!!! Sr. Engineer	$170,000	20%	$34,000	$10,000	20%	$2,000	$10,000	20%	$2,000	$10,000	20%	$2,000	$10,000	20%	$2,000	$38,000
Total Personnel	171,629	60%	$102,977	176,778	60%	$106,067	182,081	60%	$109,249	187,543	60%	$112,526	193,170	60%	$115,902	$546,720
			$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	$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:	**$171,629**		**$102,977**	**$176,778**		**$106,067**	**$182,081**		**$109,249**	**$187,543**		**$112,526**	**$193,170**		**$115,902**	**$546,720**

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.*

______ 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 https://www.energy.gov/eere/funding/downloads/sample-indirect-rate-proposal-and-profit-compliance-audit, 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.

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. Only travel that is directly associated with this award should be included as a direct travel cost to the award.
4. Federal travel regulations are contained within the applicable cost principles for all entity types.
5. 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.
6. Columns E, F, G, H, I, J, and K are per trip.
7. The number of days is inclusive of the day of departure and the day of return.
8. Recipients should enter City and State (or City and Country for International travel) in the Depart from and Destination fields.
9. 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):

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. contractor 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 contractor quote for all equipment items over $50,000 in price. If the contractor quote is not an exact price match, provide an explanation in the additional explanation section below. If a contractor 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						
3,4,5	**EXAMPLE!!!** Thermal shock chamber	2	$70,000	$140,000	Vendor Quote - Attached	Reliability testing of PV modules- Task 4.3
	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		
	TOTAL EQUIPMENT			**$0**		

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. contractor 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		
	TOTAL SUPPLIES			**$0**		

Additional Explanation (as needed):

f. Contractual

INSTRUCTIONS - PLEASE READ!!!

1. The entity completing this form must provide all costs related to sub-recipients, contractors, and FFRDC partners in the applicable boxes below.

2. Sub-recipients (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) 25% of total award costs. These sub-recipient forms may be completed by either the sub-recipients themselves or by the preparer of this form. The budget totals on the sub-recipient's forms must match the sub-recipient 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. contractor status.

3. Contractors: List all contractors supplying commercial supplies or services used to support the project. For each Contractor cost with total project costs of $100,000 or more, a Contractor quote must be provided. A contractor 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.contractor 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	Sub-Recipient Unique Entity Identifier (UEI)	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 #	Contractor 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.	Contractor for developing robotics to perform lens inspection. Estimate provided by contractor.	$32,900	$86,500				**$119,400**
								$0
								$0
								$0
								$0
								$0
		Sub-total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

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**

	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Project Total
Total Contractual	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Additional Explanation (as needed):

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 contractor 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		
	TOTAL CONSTRUCTION	**$0**		

Additional Explanation (as needed):

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			
5	**EXAMPLE!!!** Grad student tuition - tasks 1-3	$16,000	Established UCD costs	Support of graduate students working on project
6	Training Stipend	$12,000	Historical job training program stipends for historically disadvantaged community members provided by SMUD. $1,000/individual.	Stipend to incentivize and compensate individuals from historically disadvantaged communities to participate in and complete job training programs.
	Budget Period 1 Total	$12,000		
	Budget Period 2			
6	Training Stipend	$12,000	Historical job training program stipends for historically disadvantaged community members provided by SMUD. $1,000/individual.	Stipend to incentivize and compensate individuals from historically disadvantaged communities to participate in and complete job training programs.
	Budget Period 2 Total	$12,000		
	Budget Period 3			
6	Training Stipend	$12,000	Historical job training program stipends for historically disadvantaged community members provided by SMUD. $1,000/individual.	Stipend to incentivize and compensate individuals from historically disadvantaged communities to participate in and complete job training programs.
	Budget Period 3 Total	$12,000		
	Budget Period 4			
6	Training Stipend	$12,000	Historical job training program stipends for historically disadvantaged community members provided by SMUD. $1,000/individual.	Stipend to incentivize and compensate individuals from historically disadvantaged communities to participate in and complete job training programs.
	Budget Period 4 Total	$12,000		
	Budget Period 5			
6	Training Stipend	$12,000	Historical job training program stipends for historically disadvantaged community members provided by SMUD. $1,000/individual.	Stipend to incentivize and compensate individuals from historically disadvantaged communities to participate in and complete job training programs.
	Budget Period 5 Total	$12,000		
	TOTAL OTHER DIRECT COSTS	**$60,000**		

Additional Explanation (as needed):

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. NOTE: A Recipient who elects to employ the 10% de minimis Indirect Cost rate **cannot claim resulting cost as a Cost Share contribution, nor can the Recipient claim "unrecovered indirect costs" as a Cost Share contribution**. Neither of these costs can be reflected as actual indirect cost rates realized by the orgnaization, and therefore are not verifiable in the Recipient records as required by Federal Regulation (200.306(b)(1))

5.. 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	60.00%	60.00%	60.00%	60.00%	60.00%		*Example: Labor + Fringe*
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	$164,764	$169,707	$174,798	$180,042	$185,443	**$874,753**	
G&A Costs						**$0**	
FCCM Costs, if applicable						**$0**	
OTHER Indirect Costs						**$0**	
Total indirect costs requested:	**$164,764**	**$169,707**	**$174,798**	**$180,042**	**$185,443**	**$874,753**	

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____ The organization does not have a current, federally approved indirect cost rate agreement and has provided an indirect rate proposal in support of the proposed costs.
_____ This organization has elected to apply a 10% de minimis rate in accordance with 2 CFR 200.414(f).

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).

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. **Contractors may not provide cost share.** 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. **Contractors 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**
Wilton Rancheria	Cash	Wilton Rancheria will provide match dollars for half of its portion of this project	$225,685	$232,275	$239,064	$246,056	$253,257	**$1,196,337**
								$0
								$0
								$0
								$0
								$0
								$0
								$0
								$0
								$0
		TOTAL COST SHARE	**$225,685**	**$232,275**	**$239,064**	**$246,056**	**$253,257**	**$1,196,337**

Total Project Cost: $2,392,674 **Cost Share Percent of Award: 50.0%**

Additional Explanation (as needed):

2

225684.864 232275.4 239063.7 246055.6 253257.2

2

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 (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. Budget Period 1				$225,685	$225,685		$451,370
2. Budget Period 2				$232,275	$232,275		$464,551
3. Budget Period 3				$239,064	$239,064		$478,127
4. Budget Period 4				$246,056	$246,056		$492,111
5. Budget Period 5				$253,257	$253,257		$506,514
6. Totals				$1,196,337	$1,196,337		$2,392,673

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	$171,629	$176,778	$182,081	$187,543	$193,170	$911,201
b. Fringe Benefits	$102,977	$106,067	$109,249	$112,526	$115,902	$546,720
c. Travel	$0	$0	$0	$0	$0	$0
d. Equipment	$0	$0	$0	$0	$0	$0
e. Supplies	$0	$0	$0	$0	$0	$0
f. Contractual	$0	$0	$0	$0	$0	$0
g. Construction	$0	$0	$0	$0	$0	$0
h. Other	$12,000	$12,000	$12,000	$12,000	$12,000	$60,000
i. Total Direct Charges (sum of 6a-6h)	$286,606	$294,844	$303,330	$312,069	$321,072	$1,517,921
j. Indirect Charges	$164,764	$169,707	$174,798	$180,042	$185,443	$874,753
k. **Totals** (sum of 6i-6j)	$451,370	$464,551	$478,127	$492,111	$506,514	$2,392,674
7. Program Income						$0

Clean Connected PowerCity

Grid Resilience and Innovation Partnership (GRIP)

DE-FOA-0002740

RESUMES

Clean Connected PowerCity
Project Team Member Resumes

(Arranged alphabetically)

Executive Team

Anguay, Lora	Executive Sponsor (Chief Zero Carbon Officer)
Bodipo-Memba, Jose	Chief Diversity Officer
Kotha, Suresh	Chief Information Officer

Project Lead

Miletijev, Katarina	Program Director
Nguyen, Hieu	Business Lead

SMUD Project Team Members

Aswani, Deepak	Technical Lead (Advanced DERMS)
Borges, John	Technical Lead (Peak Conserve)
Cole, Michael	Technical Lead (Cybersecurity)
Connors, Amber	Director, Customer & Grid Operations Tech. Center
Costello, Shiloh	DEIA Lead
Dark, Christopher	Subject Matter Expert (OMS Modernization)
Egan, Patrick	Technical Lead (DA Equipment Upgrade)
Fennelly, Kevin	Subject Manager Expert (Fiber)
Ferrera, Rob	Environmental, Real Estate, Safety, &Tribal Liaison
Hill, Marlon	Project Manager (DI Grid Edge/DA Equip. upgrade)
Hinds, Denver	Subject Matter Expert (Advanced DERMS)
Lamb, Trevor	Contract Management & Grant Compliance
McRae, Michael	Technical Lead (Fiber)
Meredith, Dan	Project Manager (Fiber)
Saxena, Prashant	Subject Matter Expert (Peak Conserve)
Sherman, Craig	Project Manager (Advanced DERMS)
Sidhu, Taranpreet	Project Manager (OMS Modernization)
Stroop, Christopher	Technical Lead (DI at Grid Edge)
Vasquez, Michael	Subject Matter Expert (DI at Grid Edge)
Wells, Robin	Project Manager (Next Gen ACLM)
Witter, Michael	Technical Lead (OMS Modernization)

Wilton Rancheria Implementation Lead

Griffin, Herbert

Kremer, Venessa

Itron Technical Implementation Lead

Seaboldt, Bryan

OSI Technical Implementation Lead

Jacquemin, Sally

SMUD®

Lora Anguay
Lora.anguay@smud.org | 916-732-5870

Education

California State University, Sacramento CA
Bachelor of Science, Business Administration, General Management, 2013

Sierra College, Rocklin, CA
Associate of Arts, Business Administration, 2009

Western Energy Institute, Portland, OR
Business Acumen for Emerging Leaders, 2008

Community Leadership/Board Membership

California State University, Sacramento 2022-Present
Western Energy Institute 2021-Present
California State University, Sacramento 2019-2022

Professional Experience

Sacramento Municipal Utility District, Sacramento, California

Chief Zero Carbon Officer, May 2021 – Present

- Provides executive leadership and oversight for staff, resources, projects, and customer programs related to SMUD's power supply and energy portfolio. Executive leadership responsibility for Energy Trading and Contracts, Power Generation, Customer Programs, Research and Development and Grants and Partnerships. Provides leadership across the organization in the transition of SMUD's power supply to zero emissions by 2030 and support the region's electrification goals.

Director, Distribution Operations & Maintenance, April 2015 – May 2021

- Provided leadership and oversight for staff, resources, and projects related to real-time system operations and engineering to support the operations and maintenance of SMUD's distribution electric system. Leadership responsibility for Distribution System Operations, Distribution Operations Engineering, Geographic Information Systems, Transmission & Distribution Maintenance Planning.

Supervisor Process, Tech & Performance Management, Grid Assets Apr 2013 – Apr 2015

- Supervise team of project managers, business technology analysts and productivity analysts. Provide oversight and management of the development and implementation of performance metrics, technology projects and process improvement initiatives.

Sr. Project Manager, Smart Grid Distribution Automation Nov 2010 – Apr 2013

- Responsibilities included planning, organizing, managing, coordinating, and executing all activities related to these projects. Established and maintained cooperation between other work groups and the project team. Networked with other utilities to share lessons learned and establish best practices. Coordinated work with the Electric Power Research Institute and the Department of Energy.

Project Manager, Smart Meters Field Deployment Lead, Nov 2008 – Nov 2010

- Led the deployment efforts of SMUD's $140 million Smart Meter Project. Supervised Field Deployment team, set goals and expectations. Managed electrical repairs contract, meter installation contract, meter manufacturer and project activities within the Meter Shop.

Process Control Supervisor, Distribution Services, April 2006 – Nov 2008

- Provided supervisory oversight and leadership of the scheduling group who worked with commercial and residential customers to provide oversight and coordination of SMUD's design & construction activities related to customer projects. Plan, coordinate, prioritize and monitor design and construction work activities with work-unit employees to meet established task objectives, deadlines and costs.

Engineering Designer, Distribution Services, January 2005 – April 2006

- Met with new service customers to assess customer's electrical needs. Reviewed site plans and develop proposed distribution design in accordance with CPUC GO 95, 128 and 165.

Cost Scheduling Specialist, Distribution Services, February 2004 – January 2005

- Scheduled commercial design work. Respond to customer inquiries and concerns. Provided customers with accurate timelines for their projects. Determined resource availability and assigned orders, as resources became available. Provide reporting to management to identify the commercial new services workload. Monitor and report on cost variance between planned and actual work.

Oracle Corporation, Rocklin, CA

Americas AP Manager/Division Process Owner, 2000 – 2004

- Divisional Process Owner for American's Financial Center. Manage A/P staff that supported 11 countries in North, South and Central America. Oversaw the month end close and reporting process. Review and analyze various reconciled G/L accounts. Review and analyze staff's monthly key performance indicators.

SMUD®

Jose Bodipo-Memba
Jose.bodipo-memba@smud.org | 916-732-6493

Education

Stanford University, CA
Graduate School of Business Executive Education, 2022

California State University, East Bay, Hayward, CA
Human Resources Management Certificate, 2022

Drexel University, Philadelphia, PA
Master of Business Administration, 2012

University of California, Berkeley, CA
Bachelor of Arts, History (minor in African American Studies/Ethnic Studies), 1998

Certifications

Society for Human Resources Management
Drexel CEO Academy
Linkedin Learning Diversity, Inclusion and Belonging for All
Linkedin Learning, Diversity, Inclusion and Belonging for HR Professionals and Leaders
University of California, Davis, Environmental Permitting

Presentations and Publications

ULI Advisory Service Panel Report, Building Electrification & Equitable DERs (2021/2022)
Assoc. of Univ. Research Parks: Innovation Day-Designing a Sustainable Future (2022)
Sacramento Urban Technology Lab Equity and Access Panel (2022)
UC Davis Next Generation and Sustainable Communities (2020)
SACOG Youth Leadership Academy Environmental Justice (2019-2021)
Sacramento Business Diversity Summit (2020)
Congressional Black Caucus, Washington DC (2019/2020)
Mayor's Commission on Climate Change (2019)
Asian Pacific Chamber Study Mission Equity Panel (2019-2020

Professional Experience

Sacramento Municipal Utility District, Sacramento, California

Chief Diversity Officer, 2023 – Present

- Responsible for company-wide programs and services such as human resources, workforce development, diversity and inclusion, and sustainable communities.
- Advocates for diversity within and outside of SMUD, inspiring an inclusive culture based on trust and respect, and to create belonging and connection among our employees, customers and communities, which ultimately results in positive, equitable outcomes for all.

Sustainable Communities Director, November 2018 -- 2023

- Created Sustainable Communities (SC) Strategy and enterprise-wide internal working group design meeting 3-year goal in 2.
- Established PowerBI SC dashboard for enterprise metric tracking.
- Co-Developed Award-winning SC Resource Priorities map.
- Established regional workforce development pathways, $1.8 million in grants, 1,100+ adults trained, over 16,000 STEM youth taught.

Environmental Services Manager, November 2016 – November 2018

- Developed SMUD's Long Range Asset and Management Plan.
- Developed SMUD Native American Cultural Mitigation Plan.

Environmental Services Supervisor, April 2013 – November 2016

- Managed and developed environmental on-call budget and contract.
- Facilitated SMUD's Wind Resource Site Selection Evaluation
- Developed in-house CEQA training program for SMUD work groups.

Environmental Specialist III, May 2010 – April 2013

- Served as Environmental Compliance Manager for Solano Wind Project, Phase 3.
- Facilitated SMUD's Wind Resource Site Selection Evaluation.
- Developed in-house CEQA training program for SMUD work groups.

PBS&J, Sacramento, CA

Senior Environmental Planner, Office Leader, September 2003 – May 2010

- Served as Operational and Facilities Manager of 55-person consulting firm office.
- CEQA Supervisor and Manager of California staff and projects.

Mooney & Associates, San Diego, CA

Environmental and Community Planner, January 2001 – September 2003

- Served as CEQA Project Manager and Planner
- Lead Award Winning Gaslamp Cultural Thematic District Study and Lincoln High Environmental Impact Report.

SMUD®

Suresh Kotha
Suresh.kotha@smud.org | 916-732-5496

Education

Jawaharlal Nehru Technology University, India
Master of Technology in Computer Science, 1993

Gulbarga University, India
Bachelor of Engineer in Electronics & Communications Engineering, 1989

Professional Experience

Sacramento Municipal Utility District, Sacramento, CA

Chief Information Officer, 2022 – Present

- Provides executive strategic leadership and oversight for information technology (IT) activities and initiatives.
- Oversees all segments of Information Technology, leading a team of ~400 employees and contractors and optimizing the $140M budget.
- Oversees the governance of IT and the coordination between all business units and the IT organization. Develops and drives strategic IT initiatives linked to business strategy through a demonstrated ability to build relationships using broad-based leadership, business information and knowledge.
- Developed an IT Strategic Plan that is aligned with the Enterprise Strategy and Clean Energy Vision to meet SMUD's ambitious 2030 Zero Carbon goal.

Senior Director, Information Technology Strategic Initiatives & OT, 2017 -- 2021

- Established and developed the new Operational Technology (OT) segment comprised of ADMS, DERMS, Energy Trading & Contracts, and OT Network teams to manage real-time systems, a foundational component for the implementation of SMUD's Zero Carbon Plan and DER strategies which are major enterprise transformational initiatives.
- Transformed the network and communications infrastructure to support the Grid of the future. Led the OT SCADA network initiative (SONET and Frame Relay Networks to a packet-based) to develop a technology strategy and roadmap, addressing people, process, and technology needs for short- and long-term.
- Set the bar for excellence by delivering a comprehensive cloud-based multi-tenant CCA Technology Platform with CRM, Billing Engine, Web, IVR, Middleware Engine (EDI), Call Center Integration, SMD, and SQMD to support the new LOB

"CCA Data Management Services" supporting multiple CCAs generating net revenue from 650K+ residential and commercial customers.

- Spearheaded the Data Governance and Business Analytics strategy from planning to building Data and Analytics Center of Excellence addressing people, process, and technology. Institutionalized Data Governance and BI/Analytics Programs.
- Created and implemented the IT Contract, Licensing, and Vendor Management group, laying the foundation for Contract Management Office and Software Asset Management and enabling compliance and operational efficiency, realizing 9M+ in software licensing and contract savings within 6 years, in addition to operational efficiency cost savings.
- Reimagined the Enterprise Architecture Initiative and institutionalized Enterprise Architecture best practices through the definition of charter and principles, selecting frameworks, organizing the core team, and driving adoption.

Director, IT Strategy & Governance, 2015 – 2016

- Headed planning, performance, and reporting for enterprise transformation initiatives spanning technology governance, IT/OT convergence, platforms, and solutions.
- Established Business Partnership Program with a framework consisting of 3-5-year investment plans and systems health assessments to ensure IT/business alignment, technology governance, and project portfolio delivery.
- Developed strategy and technology roadmap framework supporting the key business priorities supporting SMUD's 5-year Corporate Strategic Plan.

Director, IT infrastructure & Operations, 2010 -- 2015

- Owned IT infrastructure and IT governance for the Infrastructure and Operations group with 80+ multi-site staff.
- Realigned server, storage, and network teams to adopt consistent practices and gain efficiencies.
- Revamped technical development teams and implemented technology discipline, structure, and best practices in business application development, delivery, and management.
- Spearheaded virtual first initiative, virtualizing more than 85% of servers for significant cost savings and increased availability.

Chief Enterprise Architect & Manager/Principal Technical Developer, 2002 -- 2009

- Designed and led the implementation and upgrades to multiple enterprise systems, including SAP and Meter-to-Cash systems.
- Served as a trusted technical advisor to the CIO and senior IT managers.
- Partnered with business and technical stakeholders to align the technology roadmap, vision, priorities, and deliverables.
- Managed complex, large-scale projects, including SAP, OMS, SharePoint, web, AMI, MDMS, ESB, and Documentum integration.

SMUD®

Katarina Miletijev, P.E.
katarina.miletijev@smud.org | 916-732-6235

Education

California State University, Sacramento, CA
Bachelor of Science, Electrical & Electronic Engineering, December 2002

Modesto Junior College, Modesto, CA
Associate Science & Arts Degrees, May 2000

Certifications

Professional Engineer in Electrical Engineering, License No. E17933, June 2006

Professional Experience

Sacramento Municipal Utility District, Sacramento, CA

Manager, Distribution Operations Engineer, February 2021 – Present

- Manage Distribution Operations Engineering (DOE) staff, which successfully deployed Advance Distribution Management System (ADMS) and Distributed Energy Resource Management System (DERMS).

Supervising Principal Distribution Operations Engineer – August 2019 – February 2021

- Supervised staff and supported the real-time operations of SMUD's distribution and subtransmission system. Provided On-Call engineering support to Distribution System Operators, expediting fault locations and ensuring faster restoration of service via Outage Management System, Synergi, Digital Fault Recorder software and Energy Management System. Responsible for deployment of 69kV switches and evaluation of 69kV senor pilot.

Principal Distribution Operations Engineer, August 2015 – August 2019

- Developed ADMS Business Case and Cost Benefit Analysis resulting in approval of ADMS procurement. Lead engineer for the development of Request for Proposal (RFP) and development of functional requirements for the Volt-Var Control, Fault Location Isolation and Service Restoration, Feeder Reconfiguration, Protection Coordination Application, Switch Order Management, Operator Training Simulator, D-SCADA, State Estimator and User Interface.

- Lead engineer for procurement of DERMS and strategic partnership and Joint Collaboration Agreement with OSI. Oversaw the deployment of the DERMS, participated in monthly sprint demos and testing, and documented variances and functionality as part of the agile project development.
- Supported smart meter installations at Non-SCADA substations. Led, reviewed, and issued annual N-1 Bank Loss studies. Supported Distribution Automation deployments and Grid Modernization.

Sr. Distribution System Engineer/Energy Research & Development, Aug. 2014- Aug. 2015

- Served as lead engineer for Distributed Generation working group to determine the value of solar, grid impacts of high PV penetrations, develop business strategy and make policy recommendations to address DG technologies. Technical lead for Gridco voltage regulating transformer demonstration project. Assisted in the review of RFPs for the Integrated Transmission and Distribution modeling tool.

Sr. Distribution System Engineer/Grid Planning & Operations, January 2012 – August 2014

- Managed GIS to SynerGee Integration project to simplify and expedite the existing extraction and built of the Distribution System model while ensuring all the data stored in GIS is transferred into the model. Built models and performed system studies and impacts of renewable energy generation and storage.

Roseville Electric, Roseville, CA

Power Engineer, February 2011 – December 2011

- Served as lead engineer for the GIS to SynerGee Integration to model 12kV Distribution System to optimize system performance and perform detailed system analysis. Worked with GIS team on data mapping and connectivity model. Coordinated design workshops, solution training and acceptance testing. Developed Distribution Design Standards. Created the Distribution Protection Standards.

Sacramento Municipal Utility District, Sacramento, CA

Associate Distribution System Engineer, March 2005 – February 2011

- Prepared capital and O&M financial budget for the Distribution Automation for the Smart Grid Grant. Consolidated labor and material cost for Distribution Service, Business Technology, and System Operations & Reliability and prepare multi-year reports for submittal to Department of Energy.
- Performed coordination studies to develop relay settings. Served as lead for implementation of Transformer Temperature Controller for all Distribution Substations. Responsible for modifying and maintaining the ASPEN (Access) relay database.

Pacific Gas and Electric Company, Sacramento, CA
Design Engineer/Gas Transmission, May 2000 – March 2005

SMUD®

Hieu T. Nguyen
hieu.nguyen@smud.org | 916-732-5358

Education

California State University, Sacramento
Bachelor of Science, Business Administration emphasis in Accounting, May 2008

Professional Experience

Sacramento Municipal Utility District, Sacramento, California

Principal Accountant, January 2022 – Present

- Supervises and administers the day-to-day activities and operations of SMUD's grant accounting and external JPA section.
- Oversees the accounting, budgets, and annual audits for external JPA's.

Wellhead Services Inc, Sacramento, California

Financial GAAP Reporting Manager, January 2017 – January 2022

- Managed the monthly and annual closing processes, including the review of accounting staff work.
- Trained accounting team members in GAAP accounting, monthly closes, accounting software and Excel.
- Assisted with the preparation of journal entries, general ledger reconciliations, bank reconciliation, the preparation, analysis, and distribution of financial statements, including consolidations.
- Direct the preparation of budgets, review budget proposals, and prepare necessary supporting documentations.
- Prepared monthly management reports and financial statements, including budget vs actual variance reports, and other reports to summarize current and projected company financial position.
- Facilitated monthly meetings to review power plant operations and financial information.
- Managed annual external audit and assist with the annual tax compliance.

Buzz Oates Construction, Sacramento, California

Tax Accountant, October 2014 – January 2017

- Prepared and posted journal entries for depreciation, amortization, sales, acquisition, allocation of asset basis, accrual to cash adjustments, like-kind exchanges and closed retained earnings.
- Prepared tax returns, venture statements and financial statements for partnerships and individuals.
- Reviewed financial statements on a quarterly basis to ensure information is current and accurate.
- Reviewed and reconciled accounts receivable, investments, other liabilities and equity.

Department of Finance, Sacramento, California

Financial and Performance Evaluator, January 2013 – October 2014

- Reviewed and analyzed Schedules submitted by Successor Agencies for accuracy, completeness, and validity.
- Assessed Successor Agency compliance with AB X1 26, AB 1484 and other relevant requirements.

CliftonLarsonAllen (Formally Gallina LLP), Roseville, California

Senior Accountant, January 2008 – January 2013

- Performed single audits of government agencies in accordance with OMB Circular A-133.
- Competent in major aspects of government audits from planning to final issuance.
- Audited all areas of balance sheets and income statements.
- Documented internal control processes, identify and test controls.
- Prepared GAAP compliant financial statements with related notes.
- Supervised on average three staff working on client projects over the course of the year.
- Reviewed, prepared and assisted with all functions relating to federal and state tax returns for Corporations, S-Corporations, Partnerships, Trusts, Non-for-profits and Individuals.
- Trained staff on how to utilize tax related software, proper procedures in accordance with GAAS and GAAP and complete work papers in accordance with the firm and professional standards.
- Assisted clients with technical tax, accounting, and reporting issues.

SMUD®

John M. Borges
john.borges@smud.org | 916-732-6950

Education

St. Mary's College of California, Moraga, CA
Bachelor of Science, Business Administration & Economics, 1999

Continuing Education Course Work

- Sneak Preview: 2019 Title 24 Highlights
- Best Practices for Lighting Audits
- Comprehensive Training for Energy Managers
- Indoor Lighting Controls (Sessions 1,2,3)
- Control Design Criteria and Interoperability in Building Systems
- Metasys FEC Operations/Troubleshooting
- Metasys System Extended Architecture for Building Engineers

Certifications

Certified Energy Manager (CEM), The Association of Energy Engineers, 2019

Professional Experience

Sacramento Municipal Utility District, Sacramento, CA

Product Services Coordinator, February 2019 – Present

- Responsible for ensuring collaboration across multiple workgroups and SMUD stakeholders to provide program implementation including recruitment, enrollment, contractor management, budgets and metrics, technical support and training, and customer incentives for commercial, industrial, small, and medium sized business.
- Develop relationships with decision makers to provide guidance in various HVAC mechanical and controls projects.

Sacramento City Unified School District, Sacramento, CA

Manager I, Energy & Prop 39, April 2015 – February 2019

- Performed ASHRAE energy audits throughout District and provides recommendations for modernization and conservation projects. Plans and directs implementation of projects. Develops, negotiates, and monitors contracts. Write grants for new funding for energy conservation projects. Evaluates project effectiveness.
- Reduced energy consumption of 2,385,646 kWh which equates to $347,200.00 annually.
- Served as liaison between District administrators, contractors, and government offices during design and construction phases of projects.

Building Automation & HVAC Systems Technician, January 2013 – April 2015

- Developed, implemented, and managed daily operations of Energy Management Systems (EMS) in all District campuses and support buildings. Responsible for operation, maintenance, and future expansion of EMS.
- Trained District staff members on maintenance of HVAC equipment and other mechanical systems.

Resource Conservation Specialist III, September 2012 – October 2013

- Directed and managed student-based sustainability projects through Project Green. Project included planning, design, and renovation of buildings and related structures—i.e., restroom renovations, landscape upgrades, day lighting.
- Collaborated with architects and vendors to facilitate implementation of approved projects.

Engineer, January 2011 – January 2013

- Responsible for scheduling and maintenance of HVAC equipment and other mechanical systems.
- Installed and repaired EMS.

SMUD®

Michael Cole
michael.cole@smud.org | 209 668 7263

Education

Georgia Institute of Technology, Atlanta GA
Master of Science, Cybersecurity-Information Security, 2023

California State University, Stanislaus, Turlock, CA
Bachelor of Science, Computer Science, 2006

Certifications

Certified Information Systems Security Professional-CISSP 2016
Cisco Certified Network Professional-CCNP 2013

Associations

CISA-ICS Joint Working Group
WICF Internal Control Working Group
WICF Cyber Security Working Group
E-ISAC
ISC2 East Bay Chapter

Professional Experience

Sacramento Municipal Utility District, Sacramento, CA

Manager Cybersecurity Engineering and Operations, November 2022 – Present

- Manage Integrated Security Operations Center
- Identity and Access Management Team, IT Cybersecurity Engineering and OT Cybersecurity Engineering Teams

Principal OT Cybersecurity Engineer, September 2021 – November 2022

- Supervised OT Cybersecurity Engineering Team.
- Developed architecture for multiple OT cybersecurity solutions.
- Provided technical Management for all OT cybersecurity-related initiatives.

Turlock Irrigation District, Turlock CA

Senior Control System Cybersecurity Analyst, May 2013 – September 2021

- Architected TID NERC CIPv5 Program from ground up using the ES-C2M2 and NIST Cybersecurity framework.
- Designed, installed, maintained all NERC CIP OT Cybersecurity Systems in support of NERC CIP standards for Medium and Low Impact Cyber Assets.
- Achieved "No Findings" on all audits.
- Publish two articles in UTC Journal about architecting and building NERC CIP programs

Senior Network Engineer/DBA, December 2011 – March 2013

- Designed network architectures, storage architectures, multisite data center clusters (Microsoft SQL, VMWare, Exchange).
- Performed storage migration to Dell Compellent SAN, migration of Novell Groupwise to Microsoft Exchange, Novell File Servers to Microsoft DFS, Cisco Network Core Upgrades and HP Blade Server migrations.
- Responsible for performing upgrades to network and server infrastructure.

Publications

Best Practices Process Modeling for A NIST CSF and ES-C2M2 based NERC CIP Program-Feb 2019
https://www.bluetoad.com/publication/?i=575916&article_id=3339067&view=articleBrowser

Building a NERC CIP Program based on the NIST CSF and ES-C2M2-Nov 2018
https://bluetoad.com/publication/?m=4751&i=529581&p=60&ver=html5

SMUD®

Amber Connors
Amber.connors@smud.org | 916-732-6160

Education

California State University, Chico, CA
Master of Business Administration: MIS, May 2000
Bachelor of Science, Business Administration: Accounting, December 1995

Certifications

PMP Certification, August 2005
Master's Certification in Project Management, George Washington University, Sept. 2007
Scrum Alliance Certification, September 2018
Prosci Change Management Certification, March 2019

Professional Experience

Sacramento Municipal Utility District, Sacramento, CA

IT Director Customer and Grid Operations Technology Center, June 2022 – Present
Manage the following teams:

- Operations Technology and Network Engineering (OTNE)
- Real Time Systems (ADMS/DERMS/OMS)
- Energy Trading and Contracts (ET&C)
- Grant and Vendor Management
- Customer Choice Aggregations
- Enterprise Analytics and Data Governance
- GIS/Customer Technology/AMI Technology

Responsible for delivery and support of Next Gen. Utility Roadmap, Next Gen. AMI Roadmap, EV/DER Strategy, Fiber Strategy, and ADMS/DERMS/OMS Roadmap.

IT Manager – ADMS and OMS, April 2018 – June 2022

- Manage and provide leadership to the ADMS IT and OMS IT groups to form the IT/OT Distribution Operations Real-Time Systems team from the ground up. This includes managing IT, engineers, contractors, and vendor resources.
- Led the ADMS project team, including the oversite of DERMS Phase I, supports Phase 2 and 3, engaging in scope, schedule, budget, and escalation discussions.
- Created the DERMS Pods for IT, DOE, and ESR&D to work together.

- Oversaw the ADMS Vendor OSII, ensuring strategic objectives and priorities are achieved. Foster collaboration to support the partnership agreement.
- Partnered with and support Distribution Service Operations (DSO) and Distribution Operations Engineering (DOE).
- Provided team oversite to support the Outage Management System platform, providing 24X7 on-call support for Hexagon's InService OMS Platform, Ping Tool, Outage Communication Management, Outage Portal, Transformer Load Tool, UIQ ODS - Itron AMI/UIQ Outage Detection System and AMI/GIS Migrations to support DSO and field services.
- Actively engaged in Storm planning, support, and follow-up training.
- Provided strategic direction for ADMS, DERMS and OMS to support Distribution Service Operations.
- Attended Hedge Battery and UIQ Steering Committee meetings.
- Member of the AMI Committee and active participated in WFO meetings.
- Served as co-sponsor and lead of the ADMS user group, bringing utilities together for discussion and sharing in the ADMS, DERMS, OMS and AMI areas.

Supervisor-CCS, August 2016 – March 2018
Manage the following teams:

- Managed Team of eight CCS Technical Analysts, providing direction and solution design, actively driving meetings, and reviewed design documents for eight major projects, including: S4 Hana Migration and BOBJ upgrade; EPA/CEC Benchmarking; MET Alerts, Payment Arrangements; Channel Excellence-Web Move Services; EARP Income Verification; and RTOU.
- Performed CCS Strategic planning, by leading and participating in enhancement meetings and planning meetings with BRMs, as well as providing level of effort, securing resourcing, and reviewing and providing input to the solution.
- Actively participated in the Collections RFP process. Responsibilities included business and IT requirements gathering and review, establishing evaluation criteria, and evaluating RFP responses.
- Completed the Scrum Alliance Certificate to support Agile teams
- Supported Meter-to-Cash batch jobs (SAP and UIQ).

Senior Enterprise Technical Analyst - CCS, June 2015 – July 2018

- Participated in a number of services and roles, including: CCS strategic planning; IT Technical Lead for Web Move Services and Customer 360 Energize (DSM), Rotational 24X7 on-call support; Point of Contact for SAP Inbox, CRM business roles, coordinating between business users, SAP Security and support teams.

Enterprise Technical Analyst - CCS, December 2008 – May 2015

- Served as IT Technical/Functional Lead in a number of projects including Customer 360 Energize, Customer Preference Center, CRM 7.0 RFP and SMART meter deployment.

SMUD®

Shiloh Costello
Shiloh.costello@smud.org | 916-732-0177

Education

University of Arizona, Tucson, AZ
Master of Human Resources Management, 2023

California State University, Sacramento, CA
Bachelor of Arts, Journalism, 2008

Certifications

DEI Certification, University of Florida and Cornell University
Certificate in Philanthropic Leadership, University of the Pacific, Stockton, CA
Certificate in Nonprofit Finance, Kellogg School of Management, Chicago, IL
Certified Fund-Raising Executive, CFRE International

Appointments

Vice-Chair, Habitat for Humanity Greater Sacramento Board of Directors
Co-Chair, SMUD Women's ERC Leadership Team
Senior Fellow, American Leadership Forum (Class XXII)
Member Elk Grove Chamber of Commerce, Economic Equity Task Force
Member, SMAQMD PEV Disadvantaged Communities Collaborative

Professional Experience

Sacramento Municipal Utility District, Sacramento, CA

Partnerships Manager, Sustainable Communities, 2019 -- Present

- Design and manage 100+ high-impact partner relationships with community-based organizations to implement programs that provide equitable and inclusive access to proven indicators of sustainable community success, with special attention given to historically underserved neighborhoods.
- Serve as member of DEI Strategy Tiger Team; developing SMUD's DEI strategy and framework for Executive Team approval.
- Co-author of the Equity and Inclusion Technical Report section for SMUD's 2030 Zero Carbon Plan.

*Interim Director, Sustainable Communities***,** *April 2022 – July 2022*

- Led team of 25 in the design and management of 150+ high-impact partner relationships with community-based organizations to implement programs which provide equitable and inclusive access to proven indicators of sustainable community success, with focus on historically under-resourced neighborhoods.
- Co-authored SMUD's 3-year Community Impact Strategy, addressing SMUD's commitment to making meaningful investments in under-resourced communities, ensuring their participation in a clean energy future.
- Provided leadership, guidance, expertise, and support for internal and external equity-related polices, programs and strategies (Transportation Electrification, Grant Strategy, DEI Strategy, Community Impact Strategy).

California Grocers Association Educational Foundation

Executive Director, 2012 – 2019

- As the champion and chief spokesperson for the Foundation, elevated and improved both the awareness and the reputation of the Foundation among grocers, industry suppliers and affiliated institutions. Strengthened external relationships with leaders and policy makers during political/economic change.
- Developed and managed communications strategy, including media outreach and editorial content. Developed and implemented marketing campaigns to raise brand awareness, enhance association and foundation reputation, drive traffic and increase engagement among key target audiences and stakeholders.

Foundation for California Community Colleges

Executive Director, Business Development, 2008 – 2011

- As Business Development leader for the official auxiliary non-profit to the California Community Colleges, this role demanded an understanding of the political complexities in a statewide system with 112 campuses.
- Developed extensive grassroots programs with diverse community groups and business leaders resulting in the creation of the largest scholarship endowment in history of the California Community Colleges. Advocated for students who satisfied Board of Governors fee waiver.
- Recommended and negotiated statewide partnerships, sponsorships, contracts for the Foundation in support of the California Community Colleges

United Way California Capital Region
Director Private Sector Campaigns, 2004, 2005-2008

Maloof Sports and Entertainment
Manager, Community Relations, 2005

Anthony (Tony) Robbins & Company
Director, Creative Department, 2002-2003.

SMUD®

Christopher Dark
christoper.dark@smud.org | 916-732-4986

Education

California State Polytechnic University, Pomona, CA,
Bachelor of Science (Computer Science), March 1995

Professional Experience

Sacramento Municipal Utility District, Sacramento, CA

Enterprise Technology Analyst, Jan 2020 – Present

- Develop, support, administrate and report on our current Hexagon Outage Management System (OMS) and ADMS Systems.
- Develop software to support our staff and operators utilizing C#, Design Patterns, web services, IIS .Net Core., .Net Framework, Window Forms, json, log4net, Services, ASP.Net.
- Integrate applications such as Hexagon GIS, OSI ADMS, SAP, Outage Portal, Outage Call Management Avaya, Itron UIQ with JMS Queue management.
- Track problems in log files, Event Viewer, Active Directory, SOAP and Restful APIs.

CCI / Surewest, Sacramento, CA

Software Engineer May 2016 – Dec 2019

- Developed and implemented Client applications and Web Services for our Customer Facing Portal for customers within the United States. Primarily using C# - MVC Web Services, Entity Framework, WCF, JSON, IIS, ADFS, SSO, Ajax, javascript, Sql Server.
- Created a WebForm C# application (PRISM) integrating with our AS 400/RPG Order Entry system as a front-end for internal users.

ITS Senior Designer - Dec 2005 – May 2016

- Developed and supported Web Service/Applications that interface with Provisioning Systems, communication devices, and CRMs such as a Web application Porting Tool that would allow carriers from around the world to request ports that would interface with two different CRMs using ASP.Net, C#, Ajax, Linq, Web Services, Sybase Stored Procedures, Microsoft Sql Server.

- Microsoft Mediaroom Web Applications for over-the-top applications on the TV, such as PIP and Multiview applications, using ASP.Net, C#, Mediaroom Presentation Framework, Javascript and Mediaroom OSS/BSS API calls
- Author of Python Adapters that would take information from orders using XML/XSL and interface with devices to automate turning on/off features for Microsoft Mediaroom (TV), Minerva (TV), 5ESS (Phone Switch), Mediafriends/I5 (CallerID/Voicemail), Integra (VOIP) using C#, Windows Services, WebServices, Python, SOAP, XML/XSLT, Oracle, SQL Server, Linux, Eclipse PyDev
- Supported and redesigned applications for complex provisioning systems. Developed and maintained Web Applications for user administration. Enhanced monitoring tools to run without user interaction. Technologies used: C# .NET, ASP .NET, XML, XSLT, Python, C++, Sybase, SQL Server, Oracle, Microsoft Data Transformation Services.

Senior Production Support Analyst - Sept 2002 – Dec 2005

- Provided management and technical leadership for 7 individuals in Application Support. Supported over 37 internally developed and third-party applications.
- Evaluated and re-engineered internal and external processes utilizing web enabled and other information technologies to increase customer service, increase productivity, and reduce costs using Powerbuilder, Sybase SQL, VBScript, C, Crystal Reports Enterprise, Heat, HTML, and Java.

*Legacy Solutions (*Affinity Solutions) - *Roseville, CA. (June 1994–Feb 1996)*

State of North Dakota, Office of Management and Budget, March 1995 - Feb 1996

- Created a budgeting system, which included future calculations scenarios, automatic roll-up calculation and employee payroll calculations. The software was developed using S-Designor, PowerBuilder 4.0, C++, Crystal Report. Writer and Oracle, serving 100 over 100 users throughout the state.
- Served as part of a technical team for design and development of a new client server budgeting system. Duties included designing and developing the Graphical User Interface for employee calculations and benefits, development of the interfaces to the system, training and knowledge transfer to the client.

State of California Controller's Office – ABC, June 1994 – March 1995

- The project was the development of a client/server GUI based tax collection system. System features include extensive taxpayer cross-references, multiple account access paths, work assignments for collectors, activity tracking, payment scheduling, group or individual correspondence generation, ad hoc reporting and direct access to Lotus products.

SMUD®

Patrick Egan
patrick.egan@smud.org | 916-732-6278

Education

Lincoln Technical Institute, Allentown PA
Associate of Arts, Electronics Technology, 1983

Professional Experience

Sacramento Municipal Utility District, Sacramento, CA

IT Supervisor – OT Network Engineering, 2018 – Present

- Supervising SMUD's Operations Technology Network Engineering team of 6 Engineers, the team
- Providing the network connectivity for the supervisory and control of SMUD's generation, transmission, and distribution substations including SONET, Multi-Protocol Layer Switching (MPLS), Distribution Automation (DA) and Advanced Metering Infrastructure (AMI) networks.
- Serving as the technical lead for the AMI Network Lifecycle project upgrading over 400 network devices.

Enterprise Technical Analyst – OT Network Engineering, 2016 – 2018

- Served as Enterprise Technical Analyst supporting SMUD's OT network.
- Served as project lead for the planning phase of the Frame Relay and SONET Transformation projects, completing the initiation, justification, design, and budgetary phases of these large-scale network projects.
- Provided technical support for the Distribution Automation network, improving network availability and performance, which contributed to the reduction of power grid outage durations.

Kraft Property Management

Construction Manager, 2015 – 2016

- Managed construction and maintenance projects for over 300 rental properties. Duties included property inspection, project estimating, vendor management and billing.

Rebuilding Together Sacramento, Sacramento CA

Construction Manager

- As part of an "Encore" program, managed construction projects at RTS. Duties included estimating, vendor management and light construction tasks.

Intel Corporation, Folsom CA

Wide Area Network Engineer

- Deployed Wide Area Network acceleration appliances at over 50 international locations to optimize business and chip design applications and file transfer performance.
- Key participant in the implementation of an enterprise-wide Multi-protocol Layer Switching (MPLS) network. Integrating data, voice and video services and utilizing dynamic traffic management to ensure cost efficient bandwidth utilization. This project team was a recipient of Intel's IT Excellence award.
- Key contributor to the design and implementation of Intel's private enterprise-wide Asynchronous Transfer Mode (ATM) and Frame Relay networks. Leverage of high compression rates of voice and data services greatly reduced the international bandwidth levels resulting in significant cost savings. This project team was a recipient of Intel's IT Excellence award.
- Developed and presented operational support training on Wide Area Network technologies to Intel's Network Operations Center staff at multiple international locations in support of the "Follow the Sun" 24x7 operations model.
- Responsible and accountable for the coordinated management of strategic business development. Created and managed reporting requirements to track business activity.
- Provided third level support for Intel's Network Operations Center

Network Operations Center Supervisor

- Supervised and provided second level technical support for a staff of 12 Network Specialists at Intel's 24x7 Network Operations Center. The NOC team provided monitoring and troubleshooting of an international Time Division Multiplexer (TDM) and leased circuits from international and domestic carriers.

SMUD®

Kevin Fennelly
Kevin.Fennelly@smud.org | 916-732-5960

Education

Loyola Marymount University, Los Angeles, CA

Master of Science, Electrical Engineering, 2023 (est.)
Bachelor of Science, Electrical Engineering, 1994

Professional Experience

Sacramento Municipal Utility District, Sacramento, CA

Associate Telecommunications Engineer, April 2021 – Present

- Multi-discipline Telecommunications Engineering role requiring planning, design, development and coordination of expansions, modifications, and additions to SMUD's telecommunication networks.
- Responsible for co-developing new DWDM standard and RFP for future SMUD DWDM optical transport network, performing evaluation and testing, and guiding the integration and installation of the new DWDM system into SMUD's telecommunication network.
- Responsible for Design Change Notice process to support the installation, operation and maintenance of telecommunications equipment and systems and provide technical direction for work being performed.

World Wide Technology, Inc., St. Louis, MO

Optical Technical Solutions Architect, October 2020 – April 2021

- Responsible for designing, engineering and deploying Nokia DWDM/ROADM optical networks for customers utilizing 200/400/600G coherent wavelength services and design/deployment of customer TDM-to-IP service migration.
- Responsible for designing, engineering and deploying Nokia DWDM/ROADM optical networks for customers utilizing 200/400/600G coherent wavelength services and design/deployment of customer TDM-to-IP services.

Amazon (Amazon Web Services), Seattle WA

Optical Network Engineer (Contract Position), April 2020 – October 2020

- Optical Deployment Engineering role at AWS, designing, engineering and deploying large-scale 200G and 400G coherent Ciena 6500, Waveserver and Infinera Groove30 DWDM and ROADM systems.
- Responsible for fiber optic network planning and engineering to deploy fiber optic cable systems for Amazon's rapidly growing optical networks.

Pacific Gas & Electric Company, San Ramon, CA

Senior Product Specialist, DWDM/ROADM and Optical Systems March 2013 – March 2020

- Responsible for network design, implementation, support and life cycle of all DWDM/ROADM/Optical network technologies in PG&E's service area.
- Performed research, evaluation and testing of new optical network technologies and interfacing with other systems (switches/routers, SONET, protection relays).
- Responsible for publishing network technology standards, scopes, and procedures, and training materials for engineers and technicians.
- Responsible for fiber optic network design and engineering, working in conjunction with vendors to deploy fiber optic cable systems.

Frontier Communications, Elk Grove, CA

Lead Data Engineer, June 2006 – January 2013

- Responsible for research, evaluation, testing and deployment of Content Delivery Network (CDN) solutions for HTTP Adaptive Bit Rate streaming video applications (HLS, Smooth- Streaming, MPEG-DASH), with interconnectivity to Frontier's Core and Access Networks (Cisco & Juniper BGP & MPLS).
- Responsible for all Deep Packet Inspection systems evaluation, development, architecture design and deployment in Frontier's nationwide network.
- Responsible for IP-based technology development and product development engineering for new services in Frontier's nationwide network.
- Responsible for DWDM/CWDM, ROADM systems (BTI/Juniper, Infinera & Fujitsu) and SONET optical transport, ADSL2+/VDSL2 and GPON access and solution engineering.

BT-Infonet Services Corporation, El Segundo, CA
Senior Principal System Engineer, September 1998 – June 2006

Vector Resources, Inc., Marina Del Rey, CA
Project Engineer, May 1995 – September 1998

SMUD®

Rob Ferrera
rob.ferrera@smud.org | 916-732-6676

Education

University of California, Davis, CA
Bachelor of Arts, Fine Art, June 1999

Memberships

Association of Environmental Planners
International Society of Arboriculture
SMUD Safe Zone Leadership Team
Co-founder of PRIDE @ SMUD Employee Resources Group, LGBTQ+ employees and allies

Professional Experience

Sacramento Municipal Utility District, Sacramento, California

Environmental Specialist and Tribal Coordination Lead, June 2010 – Present

- Responsible for ensuring that SMUD projects comply with the California Environmental Quality Act (CEQA) by preparing and overseeing completion of Mitigated Negative Declarations (MNDs), and Environmental Impact Reports (EIRs
- Provide expert guidance and support on various environmental projects and programs.
- Lead coordinator between SMUD and Sacramento area Tribal Governments
- Lead Tribal cultural preservation bi-monthly meetings with Wilton Rancheria, United Auburn Indian Community, Shingle Springs Band of Miwok Indians and Ione Band of Miwok Indians.
- Lead Environmental Awareness and Cultural Respect training coordination within SMUD and for SMUD contractors.
- Coordinate and provide ongoing environmental awareness training to staff and contractors for SMUD projects.
- Serve as Environmental project manager for the following SMUD CEQA projects:
  - Station J Bulk Transmission Substation Project EIR: Bulk transmission substation project proposed to be constructed in downtown Sacramento. This project is located in a CalEnviroScreen high sensitivity area. EIR scheduled to be completed in Q4 of 2023.

- 59th Street Demolition and Remediation Project MND: Involves the demolition of existing buildings containing hazardous materials and the remediation of contaminated soils.
- Cordova Park Underground Cable Replacement Project EIR: Project involves the replacement of underground 12kV and 69kV utility lines located within areas of high Tribal cultural sensitivity.
- Station H Substation Project EIR: Substation project involves the decommissioning of existing substation and the construction of new substation located on sacred Tribal land in downtown Sacramento City.
- Pocket Greenhaven Underground Cable Reliability Project MND: Involved the replacement of up to 2 miles of underground 69kV electric utility lines.
- Headquarters Campus Master Plan Programmatic EIR: Completing a programmatic EIR allows SMUD to streamline the future improvements to the SMUD Headquarters campus.
- Headquarters Building and Landscape Rehabilitation Project MND: SMUD's Headquarters building was constructed in 1959 and contained PCBs, lead and asbestos construction materials and paints. This project involved the removal of a substantial amount of these materials while adhering to the Secretary of the Interior's Standards for Historic Rehabilitation to maintain its State historic designation

Management Analyst, General Services, August 2006 – June 2010

- Led work planning efforts for Protection, Safety and Environmental work group segment of Administrative Services Business Unit.
- Coordinated work planning efforts for Protection, Safety and Environmental work group segment of Administrative Services Business.
- Responsible for Supply Chain contract status reporting to SMUD Board of Directors.
- Led the implementation of pilot emergency employee mass notification program.
- SMUD Department of General Services coordinator for migrating existing and new content to new SharePoint intranet platform.

SMUD®

Marlon Hill
Marlon.Hill@smud.org | 916-732-5958

Education

University of Phoenix, Sacramento, CA
Bachelor of Science, Information Technology Management, 2005

Southern Illinois University, Carbondale, IL
Associate of Applied Science, Electronics, 1989

Professional Training

Agile Project Management
Advanced Meeting Facilitation and Training
Nehemiah Emerging Leadership Program
Office of Legislative Counsel Leadership Academy
Sacramento Entrepreneurship Academy

Professional Experience

Sacramento Municipal Utility District, Sacramento, California

Information Technology Project Manager, 2021 – Present

- Evaluate detailed estimates of all costs by generating project budgets, focusing on cost benefits and payback period.
- Coordinate meetings with multiple stakeholders to communicate project goals and as well as negotiate cross-functional resource allocation with management.
- Foster team alignment and successful project initiation by engaging in kick-off meetings with workforce management and oversee budgets, schedule, and scope to ensure effective progress. Develop weekly/monthly status reports to convey project status and milestones.
- Develop project schedules and plans to streamline progress at corporate level.
- Conduct team assessments and deliver mentoring and training to various cross-functional teams to enhance operational productivity.
- Implemented multiple project deliverables within designated time periods and budgets as well as conducted management oversight to ensure quality and accuracy
- Administered approval of resource time and management as well as delivered support to enhance organizational and operational efficiency

- Facilitated strategic planning committee for Self-Service Applications for streamlining various enterprise initiatives and conducted interviews to meet project staffing needs.
- Project worked on:
  - *Itron IEE Upgrade Project* – Upgrade Itron (UIQ) product suite to a supported version for Meter to Cash and smart meter programs.
  - *DA Network Lifecycle Project* – Network engineering project to replace Itron/SSN radios with Cisco routers in the Distribution Automation network.
  - *RIVA Meter Pilot Project* – Pilot project to deploy Itron RIVA meters and the ability to deploy Distributed Intelligence.
  - *AT&T Point to Point Analog Services Project* – Replaced 52 legacy point-to-point/multi-point analog service with Advanced Management Solution.
  - *Telecom Fiber Optic Project* – Upgraded damaged and deteriorated ADSS fiber-optic cabling to Metallic Aerial Self Supporting (MASS) type cabling.

California Office of Legislative Counsel – Legislative Data Center, Sacramento, CA

Senior Information Technology Specialist, 2008 – 2021

- Developed overall project schedules and plans to streamline progress at corporate levels.
- Conducted team assessments and deliver mentoring and training to various cross-functional teams to enhance operational productivity.
- Implemented multiple project deliverables within designated time periods and budgets as well as conducted management oversight to ensure quality and accuracy.
- Administered approval of resource time sheets and management as well as delivered support to enhance organizational and operational efficiency.
- Facilitated strategic planning committee for Self-Service Applications for streamlining various enterprise initiatives and conducted interviews to meet project staffing needs.
- Project worked on:
  - *Senate Journal System Rewrite* – Managed full lifecycle development of re-write implementation and customer training efforts to upgrade outdated business/system processes .
  - *Senate Member Check-in* – Delivered web-based application to replace manual process to provide 100% improvements to customer communications and coordination of Legislative members.
  - *Senate Server Replacement* – Conducted testing effort of 35+ enterprise systems and 75+ cross-functional resources to ensure system readiness.

SMUD®

Denver Hinds
denver.hinds@smud.org | 916-732-6254

Education

Stanford University, Palo Alto, CA
Master of Science, Mechanical Engineering, 2003

University of the Pacific, Stockton, CA
Bachelor of Science, Electrical Engineering, 2001

Professional Memberships

Certified Project Management Professional – 2013 - 2022.

Professional Experience

Sacramento Municipal Utility District, Sacramento, CA

Senior Electrical Engineer, Research and Development, May 2022 – Present

- Developing and testing emergent DER system concepts and research plans, to expand customer interaction through distributed technology models, utilizing automation technologies, standardized grid signals, and customer journey.
- Driving the industry to standardize interconnection between utility and customer DER through stakeholder participation in policy and standards advancement: Rule 21 Smart Inverter Working Group, Title 24 smart energy requirements, IEEE 2030.5 Industry Alliance, OpenADR DER Workgroup.

Project Manager II, Research and Development, February 2012 – May 2022

- Directed diverse teams to engineer and demonstrate advanced energy systems to strengthen cross-utilization of distributed renewables, energy storage, load flexibility, electric vehicles, and customer information technologies.
- Led collaborative working groups of internal stakeholders to assess, capture, and escalate aligned organizational strategies for integration of connected customer technologies with utility IT, OT, and distribution systems.
- Commissioned and managed the SMUD smart energy testing laboratory; conducting in-situ validation of customer and utility programs and technology to expand the adoption of renewable energy while mitigating impacts to the grid.

Spot Devices, Sparks, NV

Vice President of Product Engineering and Operations, 2006 – 2012

- Key strategic and tactical contributor in growing a technology business from a startup with unverified technology integration into a market leading supplier of remotely managed public safety systems.
- Hired and led engineering and manufacturing teams, including a diverse group of staff and contract engineers in electrical, mechanical and computer disciplines.
- Coordinated with internal and external stakeholders in assessing project needs and tracking project progress before after system development and deployment.
- Supervised manufacturing, procurement, and quality assurance managers in delivery of standard products and engineered-to-order systems within fixed timelines, nominal budgets and consistently high-quality standards.
- Directed the design and realization of a portfolio of intelligent pedestrian and transit safety systems incorporating varied technologies: remote telemetry, cloud computing, wired and wireless communications, portable and solar power, asset tracking and environmental sensing.

NASA Ames Research Center, Mountain View, CA

Electronics Engineer, 2000 – 2006

- *GeneSat* - Created and implemented flight software requirements, architecture, and mission flow for satellite communications and payload microcomputers to conduct growth experiments on living bacteria in low earth orbit.
- *Personal Satellite Assistant* - Innovated, designed and prototyped miniature free flying autonomous vehicles for environmental monitoring and information relay aboard the International Space Station.
- *Video LED Driver* - Developed a miniature embedded system for real time configuration and synchronization of large LED arrays with NTSC video signal for vision-based tracking and surface reconstruction research.
- *UAV Servo Control Switch* - Created custom electronics for remote switching between manned and autonomous control of an unmanned aerial concept vehicle within minimal size, power, schedule, and budget constraints.
- *Microbial Mat Motor Controller* - Developed hardware and software concepts and management tools for a portable constant laminar flow system to promote submerged cellular growth.
- *Biomimetic Smart Wing* - Prototyped and tested control hardware and procedures for revolutionary and undocumented Active Fiber Composites as proof of concept for Mars Aircraft.

SMUD®

Trevor Lamb
Trevor.Lamb@smud.org | 916-732-6061

Education

University of the Pacific, McGeorge School of Law, Sacramento, CA
Juris Doctor, May 2007

Brigham Young University, Provo UT
Bachelor of Arts, History Teaching, May 2004

Professional Memberships
The State Bar of California, Member No. 252548, admitted December 5, 2007

Certifications
ITIL Foundation Certificate in IT Service Management

Professional Experience

Sacramento Municipal Utility District

Business Technology Program Manager, *January 2016 – Present*

- Working supervisor responsible for oversight of a team of IT Procurement & Contract specialists, managing day-to-day operations of the IT Contracts, Licensing, and Vendor Management group and ensuring integrity of the technology procurement process.
- Responsible for development maintenance of strategic/tactical vision and budget.
- Manages SMUD Enterprise Contracts and key vendor relationships.
- Oversees development of Contract, Licensing, and Vendor Management frameworks, processes, procedures, and enabling technologies.

Senior I/T Procurement/Contract Specialist, *April 2010 – January 2016*

- As lead for the IT Contracts, Licensing, and Vendor Management Team oversaw development of group, defining roles and responsibilities, drafting policies and procedures, and the hiring of new team members.
- Developed processes and procedures for technology procurements, including Altiris workflows. Managed enterprise contracts and oversaw license compliance.

- Oversaw the development of complex procurement strategies to resolve novel and complex resource issues.
- As Smart Grid Core Team Member and procurement/compliance lead, ensured compliance with Department of Energy (DOE) regulations for all Smart Grid Investment Grant (SGIG)-related procurements including the following activities:
    - Worked with multiple SMUD interests to develop, maintain and provide training on grant procurement policies and forms that satisfy SMUD and grant needs
    - Ensured Davis Bacon Act and Buy American Act compliance and education.
    - Created requisitions, monitored, tracked and resolved issues related to procurement.
    - Analyzed, interpreted, negotiated, and drafted contract changes for the SGIG.
    - Assisted in gathering data, drafting, reviewing, and submitting reports for the DOE, OMB and auditors as required.

*I/T Procurement/Contract Specialist, June 2009 – April 201*0

- Assisted Information Technology (IT) project managers with technology procurements by selecting and drafting the appropriate documents and evaluating proposals while coordinating with IT, Supply Chain Services, and Legal Departments.
    - Co-authored SMUD's SGIG application, participated in contract negotiations with DOE, and drafted SMUD Project Execution and Risk Management Plan.
    - Performed contract review, analysis, negotiations, procurement, and drafted contract changes for enterprise-wide contracts including SAP, Oracle, Hexagon (formerly Intergraph), Itron, Landis+Gyr, and Utility Partners of America.

Management Analyst, September 2007 – June 2009

- Performed contract review, analysis, interpretation, drafting, and negotiations, assisted with technology procurements by selecting and drafting the appropriate procurement documents and evaluating proposals and coordinated with other SMUD departments.

Sacramento Child Advocates, Sacramento, CA

Legal Intern, January 2007 – April 2007

- Served as legal and educational advocate for foster children with special needs, which involved working with school administrators, teachers, and foster parents to develop solutions for compliance issues regarding student's Individual Education Plans.

SMUD®

Michael W. McRae
michael.mcrae@smud.org | 916-732-6963

Education

California State University, Sacramento, CA
Master of Science, Electrical Engineering, Communications & Image Processing Emphasis, May 1996
Master's Thesis - Optimal Antenna Synthesis and Slot Array Design

California State University Fresno, Fresno, CA
Bachelor of Science, Electrical Engineering, Electromagnetics & Wireless Communications Emphasis, May 1993)
Projects - Specialized NAVY antenna array, VHF to UHF transponder, FM optical transceiver, AM transceiver

Certifications

Certified Energy Manager (CEM), The Association of Energy Engineers

Professional Experience

Sacramento Municipal Utility District, Sacramento, CA

Telecommunications Engineer, January 2002 – Present
Provide varied telecommunications services and engineering support to all District business units. Supervise a team of five telecommunication engineers.

- (Smart Sacramento Grant) - Lead telecom engineer for "Smart-Meter" and "Distribution-Automation" grant projects. Participated in bidding, design, standards development, device deployment and troubleshooting.
- (Fiber) Acting fiber Program Manager; Including standards, design, construction, emergency restoration, and third-party fiber agreements.
- (Other) - Develop cell-modem line standards for pole mounted intelligent devices. Project manager and factory acceptance testing engineer for the SMUD 2-way radio replacement. Developed and taught a high-voltage-safety class for the SMUD POWER ACADEMY. Execute complex point-to-point microwave projects. Supervise, mentor, and assign work to junior engineers, and maintain good relationships with all work groups.

California DGS, Telecommunications Division, Sacramento CA

RF Telecommunications (Wireless) Engineer, June 1994 – 1997, and 1999 – 2002

- Performed a wide range of radio engineering and system design functions for the state of California.
- Developed procedures, reports, technical standards, and statements-of-work.
- Performed project management, estimating, client interface, vendor interface, FCC licensing and the procurement process.
- Updated installation standards to comply with modern materials and techniques.
- Wrote maintenance procedures for the routine maintenance of field equipment. Also developed public relations web page content.

Ball Aerospace & Technologies Corp., Boulder CO

Antenna Design Engineer, September 1997 – September 1999

- Designed, manufactured, and tested cellular antennas. Collaborated with sales team to transform product ideas to reality. Followed ISO9000 procedures.
- Wrote specifications, quote packages, design plans & test procedures.
- Developed antenna modeling algorithms in MatLab®. Prototyped and verified designs with qualification testing; then worked with production staff and contractors to manufacturer product.
- Functioned as integrated product team leader. High reliability, repeatability & long-life designs. This work resulted in two US-Patent awards (see below).

Granted US-Patents:

- 6,414,636 Radio frequency connector for reducing passive inter-modulation effects (Ball-Aerospace)
- 6,239,751 Low profile tunable antenna (Ball-Aerospace)
- 6,115,079 Programmable video channel controller (pro-se)
- 7,042,438 Hand manipulated data apparatus for computers and video games (pro-se)
- 8,464,451 FA system for data acquisition and control (pro-se)

SMUD®

Dan Meredith
daniel.meredith@smud.org | 916-732-6823

Education

University of Nevada, Reno, NV 1971 – 1973

Professional Memberships and Certifications

Certified Project Management Professional – 2013-2022.
PMP Certified, 2005
ITIL Ver3 Certified, 2010
CIP Certified, 2017

Skills

Forty-one years of deep network engineering, program/project management, and engineering management experience across multiple large US based companies and global wide area network infrastructures. Currently working on transforming and migrating all SMUD network services to Cisco based MPLS architecture.

Professional Experience

Sacramento Municipal Utility District, Sacramento, California

OT Network Engineering Project Manager II, January 2017 – Present

- SONET Transformation Phase 1 and Phase 2 Projects Manager.
- Gas Site Network Resiliency & Capabilities Enhancement Project Manager.
- Frame Relay Transformation Project Manager.
- Valley Teleprotection Lab/Field Pilot Beta Testing over MPLS Project Manager.

Intel Corporation, Folsom CA

Program Manager, April 2000 – June 2016

- WAN Project Global Lead-Program Manager/IT Operations
- WAN Program Manager/IT Global Engineering

Consulting/Contracting Services

- Meredith Consulting Services/Catholic Healthcare West, October 1999 – April 2000

- Computer Resources Group/Science Applications Integration Corporation, April 1998 – October 1999

California Federal Bank, February 1990 – April 1998

- VP/Telecommunications Services
- VP/Voice Services
- Senior Data Network Engineer

SMUD®

Prashant Saxena
Prashant.Saxena@smud.org | 916-730-4694

Education

IIT Kanpur, India
Bachelor of Technology, Mechanical Engineering, 1985

Certifications

APICS CSCP Certification (Certified Supply Chain Professional)
Certified on Smart Metering Product Suite, Silver Spring Network

Professional Experience

Sacramento Municipal Utility District, Sacramento, CA

Senior Enterprise Technical Analyst, 2015 – Present

- Senior Enterprise Technology Analyst in CCS and Solution Architect for Smart Grid solutions, responsible for implementation, support, maintenance, and upgrade of Meter-To-Cash, Smart Grid/Metering and DRMS applications and solutions. Functioning as SME and IT lead to closely work with business users to identify and define business requirements, lead analysis, design, development, configuration, and testing efforts to deliver fully validated solution to SMUD business. Lead multiple projects and implemented complex solutions related to Meter-to-Cash, SMUD Smart Metering (AMM/UIQ, ITRON IEE MDMS) and DRMS.
  - Solution Architecture for upcoming implementation of NextGen ACLM DR solution using Itron IntelliSource (DERMS) system
  - Successful upgrade of Itron AMI Suite (UIQ) and Itron IEE MDMS Systems
  - Time of Day (TOD) rate implementation: Rate Change Automation
  - Successful upgrade of SEELoad (DRMS) system
  - Implementation of multiple enhancements to SMUD DRMS solution
  - SAP/ Itron IEE MDMS integration using MDUS

Hewlett Packard Company, Roseville, CA

Program Manager/ Solution Architect / Development Lead, Month 2000 – Month 2015

- Was responsible for defining the architecture and capability roadmap of solutions that are needed to support Printing and PC businesses. I lead effort to ensure that

HP implements solutions that support future vision, are flexible enough to respond to ever changing needs of business and are cost effective.

- IT Development Lead, responsible for solutions delivery and ongoing support. Solutions were delivered in SAP ECC Enterprise Resource Planning (ERP) and SCM (APO) environment as well as custom, non-ERP environment.
- Led and participated in solution delivery across all the phases of the project, from inception to signoff through design, development, testing, launch, migration to production, and retirement. Possess in-depth knowledge of SAP ECC SD, MM, PP, WM and FI modules as well as Global ATP (GATP), Demand Planning (DP), Supply Network Planning (SNP), Production Planning and Detailed Scheduling (PPDS) module of SAP SCM7.0.
    - Developed system architecture and delivered scalable solutions to Imaging and Printing Group of HP to enable automated order creation using EDI and Web interfaces, Order fulfillment, Delivery, Shipping and Invoicing for complete Order to Cash Cycle automation. This resulted in multi-million dollars cost savings in the very first year of implementation due to enhanced automation, higher delivery accuracy and timely fulfillment and invoicing of customer orders.
    - Implemented Integrated Supply Planning and Execution (OM, Logistics, Procurement) solution to support Build-To-Stock, Build-To-Order capabilities for both external procurement and internal manufacturing supply chains with X-Doc as well as warehousing features
    - Oversaw integration of HP and pre-merger Compaq order management and logistics (SAP R/3 SD, MM) systems resulting in improved customer service and standardization across platform.
    - Designed and implemented customized Pricing solution in SAP SD module for Customer Orders to support complex pricing rules for HP products using standard SAP enhancement features.

SMUD®

Craig Sherman
craig.sherman@smud.org | 916-732-6943

Education

California State University, Sacramento, CA
Bachelor of Arts, Mechanical Engineering, May 1983

Professional Memberships

Peak Load Management Alliance, Board of Director Member

Professional Experience

Sacramento Municipal Utility District, Sacramento, CA

Senior Enterprise Technology Analyst, June 2022 – Present

- Project Manager for SMUD's Distributed Energy Management System (DERMS), responsible for managing the design, implementation, and testing of phase 2 and 3 of this multi-year project.
- Manage contracts, project change orders, budgets, and project schedules, including working with SMUD's project management tools.
- Work with the DERMS vendor to co-develop new functionality with input from SMUD key subject matter experts in Research & Development, Distribution Operation Engineering, Energy Trading & Contracts, Distribution System Operations, and Information Technology.
- Technical lead for SMUD's Peak Conserve (NextGen) air conditioning load management program implementation responsible for writing technical and functional specifications for the 2-way load control switches and led the writing of the scope of work for the switch installation services.

Strategic Business Planner II, April 2014 – June 2022

- Lead responsibility for long term strategic planning of SMUD's load flexibility/demand response initiatives by assembling a portfolio of various initiatives such as residential A/C load control, commercial AutoDR, curtailment agreements, rate-based curtailments, Peak Conserve (NextGen) air conditioning load management and a multi-DER initiative to form SMUD's 2030 zero carbon plan load flexibility effort.

- Coordinated with other strategic planners to use their forecasts of EV managing charging and battery systems. Performed cost/benefit analysis of new and existing load flexibility initiatives, developed business plans, including multi-year budgets.
- Worked with others at SMUD to implement load flexibility program changes and to start new initiatives. Responsible to report to NERC, WECC and CEC on SMUD's demand response initiatives and demand response event performance.

Senior Project Manager, July 2011– April 2014

- Led the project management for the demand response portion of FOA 58 Smart Grid Investment Grant (SGIG) with a focus on implementing a demand response management system (DRMS) and coordinating with SMUD subject matter experts to integrate it with other SMUD business systems.
- implemented a thermostat-based load control program and managed staff to implement a commercial AutoDR demand response program operated from the DRMS.
- Supervised staff, managed the budget and schedule, writing evaluation and lessons learned reports, development of the technical and functional requirements for the DRMS, instrumental in the planning of the DRMS architecture that leveraged the following systems: AMI mesh network, SAP, Meter Data Management System, SEELoad DRMS, notification system, and SAP billing system.
- Participated with key stakeholders in the development of the detailed business requirements as it relates to the development of the DRMS system. For example, device management, customer enrollment, program management were some areas of focus

SMUD®

Taranpreet Sidhu
taranpreet.sidhu@smud.org | 916-732-6501

Education

National Online University
Master of Business Administration, 2011

University of California, Davis, CA
Bachelor of Science, Electrical Engineering, 2004

Certifications

Certified Scrum Master, 2017
PMI-Certified Project Management Professional, 2015

Professional Experience

Sacramento Municipal Utility District, Sacramento, California

Senior Strategic Manager, IT Strategic Initiatives, May 2018 – Present

- Managing implementation and planning of several large multi-year multifaceted strategic projects ($30 million) to achieve SMUD's 2030 Clean Energy goal.
  - *Advanced Distribution Management System (ADMS)*: Led a team of ten core team members, 10+ business subject matter experts, two contractors, and three vendors in the design and implementation of 20+ ADMS platform applications and tools to manage, control, and optimize distribution system.
  - *Distributed Energy Resource Management System (DERMS) Phase I*: Managed co-development of Phase I of the DERMS application with the vendor. Coordinated and facilitated monthly Sprint demos and different phases of end-user testing.
  - *ADMS Roadmap – Outage Management System (OMS)*: Managed and facilitated multiple working sessions with key subject matter experts (SME) to gather technical and business requirements for a new integrated ADMS-OMS platform to provide Operators with a single real-time 360 view of the as-operated distribution grid and a unified map.
- Managing and updating budget in the budgeting software tool, explaining variances, participating in budget meetings, and adjusting as needed.
- Overseeing core project team, business partners, contractors, key stakeholder resources, and other various aspects of the project as well as managing and sustaining relationships with vendors integral to the project and SMUD's strategic

goals. Monitoring internal and vendor SMEs tasks and assignments and working with them to prioritize and delegate work. Ensuring vendor SMEs follow SMUD policies and procedures, especially as they require DSO area (CIP designated) access. Leading by example and driving project momentum and energy. .

- Collaborating with business partners and other SMUD enterprise initiatives to identify dependencies and ensure cross-functional activities are understood and managed.

Project Manager II, IT PMO, October 2015 – April 2018

- Led a team of multiple business and technical experts and SMEs and facilitated Project Planning workshops for two highly complex and inter-related projects with two distinct System Integrators including the development of high-quality Request for Proposals (RFP), the RFP evaluation process, both written response reviews, and vendor demonstrations.
- Partnered with Supply Chain to define RFP evaluation criteria, pricing strategy, and packages for SMUD Board or Directors approval.
- In parallel, developed project budget and benefits plan through discussions with Project Sponsors and business managers and led the development of project implementation plan, resource plan, risk management plan, communications plan, test plan, and training strategy.
- Worked with the core team to develop and document project implementation budget plan, resource plan, risk management plan, communications plan, test plan, and training strategy.
- Scrum Master for Payments/Rates Implementation and Billing Product Team

- *Golden 1 Credit Union, Sacramento CA*

Project Manager, Corporate PMO, March 2012 – October 2015

- Managed a multi-million multi-phased rollout of a new telecommunications system across the organization's 500+ back-office employees and 80+ branches.
- Implemented a time-sensitive large-scale initiative to upgrade ATM hardware and software, and installation of a new driving platform at 250+ ATMs.
- Led a multi-million corporate re-branding program that included working with a design and architectural team to create & implement new design standards.
- Partnered in the implementation of the Enterprise Project Management Program including providing training to leadership and management.
- Managed several IT software upgrades and installations including overnight production installs. Led teams of 30+ employees in establishing project scope, requirements, testing, procedural updates, and post-production cutover and stabilization activities.

SMUD®

Christopher J. Stroop
christoper.stroop@smud.org | 916-732-7277

Education

Georgia Institute of Technology, Atlanta, GA
Master of Engineering, International Supply Chain and Strategy, 2008

Western International University, Phoenix, AZ
Bachelor of Science, Information Technology, 2000

Professional Experience

Sacramento Municipal Utility District, Sacramento, CA

Senior Enterprise Technical Analyst, 2017 – Present

- Enterprise Technical Analyst supporting SMUD's smart meter/devices, Home Area Network, Demand Resource Management, SAP Advanced Metering
- Infrastructure, and Meter to Cash Billing processes.
- IT Technical Lead for several projects, including SMUD's Next Generation Advanced Metering Infrastructure Strategic Roadmap, as well as Several UIQ Smart Meter Head-End Management System Upgrades, and UIQ Strict Mode enablement.

American Red Cross, Sacramento, CA

Gold Country Reginal Logistics Manager, 2016 – 2017

- Managed the work force to support, maintain, and run the Region's Facilities, Technology, Procurement, Supply, Transportation, and warehousing.

Logistics Chief: Disaster Response to the Oroville Dam evacuation, 2017

- In response to potential failure of Oroville Dam and state-ordered evacuation of 188,000 people personally oversaw the receiving and distribution of supplies and services at two large client shelters, plus several smaller client and staff shelters, ultimately serving 13, 000 clients.

Intel Corporation, Folsom, CA

Business Enablement Solutions Engineering Manager, 2009 – 2016

- Managed 30-person team to define and drive Application and Business Intelligence, Strategic capability, and priorities for Intel's Supply Chain.
- Defined and executed a 3-year Technical Roadmap that led Global Transportation Outsource Logistics to be recognized by BAIN and TMG Excellence Award as having best in class transportation/outsourcing rates.
- Led Intelligent Advanced asset tracking solution Proof of Concept, which moved from concept to New Product development with Global Partner in 2016.
- Drove RealSense 3D camera low-cost Freight dimensional capture solution from Proof of Concept to Pilot Phase, projected 5% year-over-year cost savings.
- Sponsored Intel's SAP Center of Excellence focused on PoCs and training to enable advanced Supply Chain, Business Intelligence: Warehouse, Transportation, and Product Substitution capabilities, saving $1M in supply chain costs.
- Key player in defining Intel's Cross Supply Chain Business Intelligence initiative using SAP HANA to provide timely glass pipeline for Intel's Supply Chain Data.

Supply Chain Product Manager, 2008 – 2010

- Chief Technology Architect for Fritz Institute Helios User Group Open-Source Supply Chain solution for the Humanitarian and Disaster Relief Sector by developing an open-source software project from initiation to delivery that was deployed at Oxfam and other organizations.

Delivery Network Services Product Line Strategy and Integration Manager, 2005 – 2010

- Owner: Strategic Capability, Path Finding, and Integrated Product Line Roadmaps.
- Drove development and delivery of Intel's Global Transportation Management 2-year solution Roadmap, which led to Best-in-Class Freight cost management as recognized by Bain & Company.
- Technical Roadmap Key member; Supply Network Strategic, Global Transportation Logistics and Outsourcing, Supply Demand Technical Review Group, Intel/SAP Roadmap, Teams.
- Led Technical efforts surrounding RFID integration into Intel's Supply Chain
- Led Application Architecture for Intel Solution Services Tyson Foods Strategic RFID project.

Project / Program Manager, 2000 – 2005

- Led several large successful Enterprise-wide Projects, including SAP Warehouse Management Systems and Transportation Execution solutions delivery across Intel's world-wide supply chain.
- Key participant in Intel's Project Lifecycle Methodology development, including WMS project.
- Pioneered Transition change management and leveraged native SAP functionality to meet key business requirements.

SMUD®

Michael Vasquez
Michael.vasquez@smud.org | 916-732-2833

Education

Sacramento State University, Sacramento CA
Coursework in Civil Engineering

Certifications

- Certificate of Completion on Electrical Theory and Math for AC and DC Circuits
- Certificate of Completion in Electrical Trades for Electrical Meter Technician
- The United States Department of Labor, Office of Apprenticeship, Certificate of Completion of Apprenticeship, Electric Meter Repairer
- California Apprenticeship Council, Certificate of Completion of Apprenticeship, Meter Technician

Professional Experience

Sacramento Municipal Utility District, Sacramento, CA

Senior Meter Technician, August 2010 – Present

- Responsible for evaluation for all new capabilities regarding meter testing and technology/functionality that impact the District's Smart Grid metering capabilities.
- Contributing creative ideas and solutions to Billing, Business Technology, UIQ Monitoring Group, Metering Programs, Information Security, and various other Project Managers.
- Investigates complaints/questions from Western Area Power Administration (WAPA), PG&E, CAISO and SMUD system operators regarding metering quantities supplied as EMS inputs; makes repairs; and recommends solutions.
- Calibrates and repairs shop and field solid state watt-hour standards using precision standard watt-hour instruments, calibrations traceable to National Institute Standard Technology (NIST).
- Performs meter/transducer tests at Intertie points, transmission, distribution substations, generation power plants, commercial and residential service locations.
- Assists in the development of apprenticeship programs; provides classroom and field training for ALL meter technician apprentices as well as cross train other internal departments.
- SME on all Smart Meter upgrades with regards to metering and capabilities

- Troubleshoot Installs and maintains solid-state isolation relays used for data acquisition and customer load management.
- Responsible for settings/programs in Smart Meters that get deployed in our AMI Smart Grid network

Meter Technician, April 2006 – August 2010

- Train Meter Technicians on new software/tools/hardware that is needed to complete the tasks of maintaining accurate, reliable, and up to date meters and metering equipment.
- Install and maintain Meter Shop's computer software for testing, troubleshooting and data collection from electronic kWh meters as well as various types of data recorders.
- Troubleshoot Meter Technician PC's, software, FSU's, Power Quality loggers and technical hardware issues with varies meter types.
- Developing and testing of comprehensive and extensive acceptance test scripts.
- Safely installs, tests, troubleshoot and repair electronic and electromechanical kWh meters, various data recorders and transducers for the district.
- Maintain, test, validate and troubleshoot UIQ, MPC, FWU, NEM, ODS, HCM and supporting AMI metering software as well as hardware that is in use.
- Utilize personal computers as well as SAP in conjunction with UIQ to program electronic kWh meters for varies types of needs the district deems necessary.
- Wires, tests, installs, and maintains all new commercial metering installations, including 12kV primary voltage revenue metering equipment with safety being paramount.
- Inspects new and existing commercial and residential panels to verify adherence to District regulations, NEC codes and local inspecting agencies.

SMUD®

Robin Wells
Robin.Wells@smud.org | 916-732-5485

Education

University of California, Davis, Davis, California
Master of Arts, Education, May 2013

University of California, Santa Cruz, Santa Cruz, California
Bachelor of Arts, Philosophy, May 2010

Certifications

PMI Agile Certified Practitioner (PMI-ACP)

Professional Memberships

Project Management Institute, Member ID 6844368

Professional Experience

Sacramento Municipal Utility District, Sacramento, California

Project Manager II, IT PMO, March 2021 – Present

- Project manager for the IT project management office coordinates activities and projects in assigned area; develops necessary project plans, cost estimates, project budgets, work breakdowns and schedules, and project summary descriptions and justifications for department review.
- Ensure assigned work activities successfully contribute to the overall completion of assigned projects; plans, coordinates, prioritizes, monitors, guides, reviews, and conducts work activities associated with assigned projects in accordance with established task objectives and schedule as outlined in the project plans.
    - Habitat Conservation Plan Workflow & Reporting – Successfully managed the design and implementation of technology improvements to prepare for and support SMUD's upcoming Habitat Conservation Plan Permit.
    - Next Gen ACLM IT Implementation – Currently leading the execution of Next Gen ACLM pilot, involving technology selection and implementation to support the replacement of ACLM infrastructure and support 2-way load control switches for SMUD's upcoming Peak Conserve program.

Benningfield Group, Inc., Folsom, California

Director of Software Development, February 2018 – August 2020

- As Director of Software development oversaw multiple simultaneous software development accounts. Guided resources and team collaboration to successfully address the seemingly incompatible priorities of different clients.
- Adapted resource plans and roadmaps to accommodate client-directed change in requirements and timeline. Fostered collaboration, leading diverse groups to consensus, facilitated solutions, and built options/alternatives among different stake holders.
- Supervised all application development, including design, development, implementation, user support and training, maintenance, quality assurance, and system testing and evaluation. Effectively trained, supported, and worked collaboratively with users of all professional and technical levels.

Software Program Manager, June 2012 – February 2018

- As Software program manager, was key point of contact and subject matter expert for 3+ concurrent integrated multi-vendor projects, ensuring resource availability and allocation for a team of 4 developers and 2 QA analysts.
- Assisted in definition of project scope requirements and objectives, involving all relevant stakeholders and including developers and QA to ensure technical best practices and feasibility. Responded to client feedback, resolving issues by satisfying the client while meeting business objectives.
- Acted as a conduit between business/stakeholders and the delivery team. Effectively report and escalated issues to management.
- Created and maintained all project documentation including functional requirements, use cases, process flows, and accurate records of individual implementation project deliverables, status and issues.

SMUD®

Michael Witter
michael.witter@smud.org | 916-732-7105

Education

Denver Institute of Technology, Denver, CO
Associate of Arts, Electronics Technology, 1989

Certifications

Microsoft Certified Systems Engineer and Certified Professional, 2000

Professional Experience

Sacramento Municipal Utility District, Sacramento, California

ADMS project Systems Architect and Technical Lead, 2015– Present

- Assessed market capability and maturity and develops formal recommendation as to whether SMUD should pursue an RFP including its scope and product.
- Created and published an RFP with requirements that reflected SMUD's needs with respect to usability, functionality, technical and operational capability and were sufficient enough to thoroughly evaluate the capability of each product in order to select the solution that best fits SMUD's vision.
- In role of Architect for all aspects of the new ADMS platform, ensure a sustainable, supportable, performant and secure implementation of ADMS, working. closely with the selected vendor to create a multi-site, multi-domain, multi-environment (Dev, QAS, Prod), highly available, highly secure, CIP 'ready', highly performant, highly supportable solution.
- Work with Networking and security teams to ensure all rules, monitoring and applications are in place to maintain a high level of security throughout the implemented architecture.
- In role as Technical Lead, responsible to develop support structure, dividing lines and support roles between groups to ensure all aspects of the implementation are well supported and secure.
- Setup, support, troubleshoot, administer, configure and modify all aspects of that solution as well as all hardware and software involved with the solution, including GPS clocks, ESX host, SCADA communications hardware and software, the virtual environment using VMWare and vCenter, Netbackup for VMWare, Windows servers, the sequestered Active Directory environments and its policies and configuration, workstations, etc.

- Support all aspects of the OSI Monarch platform including but not limited to security, administration, configuration, modifications, troubleshooting, development within Monarch through advanced tabulars, onelines and calculations in order to meet end-users needs.
- Oversee, architect/re-architect all integrations, conversions, testing and configurations to ensure all aspects of ADMS have been fully vetted to ensure a beneficial, performant, supportable, safe and secure solution is being deployed that meets DSO's need and vision for an ADMS**.**
- Oversee and assist team on all testing methodologies and events on all aspects of the product, with emphasis given to SCADA related items.
- Oversee and assist all team members whenever necessary through on the job training or assistance, setting directions, priorities, and working on skill development and problem solving.
- Helped lead and develop the go live methodology and plan to ensure a successful transition to the OSI ADMS system. Lead team with implementation of the go-live plan and assisted all team members during go-live to ensure success.

Senior Enterprise Technology Analyst, 2006 – 2015

- Responsible for daily support of the Intergraph InService Outage Management System. Support included identification, troubleshooting and resolution of application problems between clients, databases, servers, networks and all peripheral integrated systems, as well as 24/7 support during an on-call rotation.
- *Administration* – Responsible for upgrading, installation, configuration, customization, documentation, testing, and troubleshooting the OMS. Identified problem points and created or researched and implemented custom solutions to ensure all necessary functionality was available and reliable.
- *Systems integration* - Designed, documented, developed and supported integration between OMS and systems such as GIS, SAP, SSN and Landis & Gyr using tools and programming languages such as vb.net, SQL and PL/SQL.
- *Process/application improvement* - Analyzed existing OMS processes and identified areas for improvement. Proposed, research, design, develop and support custom applications and solutions that add functionality to, enhance current functionality, expedite and/or simplify the user experience from OMS.
- Propose, present, participate and or lead projects beneficial to SMUD and its customers, focusing on the expedient restoration of customer power. Work closely with other business units within SMUD to bring these projects successfully from proposal to implementation.
- Interface with 3rd party vendors and contractors to ensure the reliability of the SMUD OMS system as well as the integration between OMS and all other integrated systems.

Herbert "Lou" Griffin

9328 Elk Grove Blvd 105-221, CA 95624 (916) 538-4247

OBJECTIVE.

Continued employment as the Executive Director, to further my career while ensuring the preservation of our local Native Heritage for future generations.

EXPERIENCE

Wilton Rancheria ***Executive Director of Cultural Preservation June 2020 - Present***

ESSENTIAL FUNCTIONSAND RESPONSIBILITIES

- Manage and oversee Tribal EPA Department Projects and Program activities. Reporting, representing WR as Regional Tribal Operations Committee member, implementing deliverables, attending meetings as per grant via in person or video conferencing.
- Manage and oversee Tribal THPO Department Projects and Program activities. Working with theTHPO, implementing Policies and procedures as per grant via in person or video conferencing.
- Manage and oversee NAGPRA activities working with the THPO identifying and protecting cultural sites.
- Use of Arc GIS software to access and identify sensitive cultural sites while working with Federal, State, and local agencies with AB52 and 106 protection laws.
- Knowledge of CEQA, NEPA, NHPA, ARPA laws and regulations.
- Conduct annual environmental needs assessment for the Rancheria.
- Develop, implement, and manage a comprehensive tribal recycling program.
- Develop and implement environmental best practices for all tribal entities.
- Supervises and directs all full-time, part-time, and seasonal department employees.
- Attend Tribal Council, General Council, Directors, and staff meetings as requested or planned.
- Participates in Tribal events including non-profit events.
- Continued outreach to the community including door to door interactions.
- Oversees department compliance with tribal fiscal policies.
- Cultural Monitoring: Coordinating, scheduling, and planning projects with the Cultural department staff, other Tribes, agencies, utilities, contractors, and their foreman's.
- Cultural Monitors: Ongoing training, scheduling, office support and oversite of office reporting and technical items related to developing and continued growth of the monitoring staff and program.
- Office / General: Scheduling maintenance of cultural department building and grounds working with the Facilities and Maintenance department.

Wilton Rancheria ***Lead Tribal Cultural Monitor/ EPA Coordinator June 2019 -June 2020***

- Develop, implement, and manage a comprehensive solid waste reduction and waste management program.
- Scheduling and managing day-to-day operations of the Cultural Resource Monitors.
- Overseeing Cultural monitoring of projects as per Wilton Rancherias Cultural Preservation department’s goals and objectives to preserve and protect tribal cultural resources.

Wilton Rancheria ***Tribal Cultural Monitor Sept 2017-June 2019***

- Cultural monitoring of projects as per Wilton Rancherias Cultural Preservation departments goals and objectives to preserve and protect tribal cultural resources.

Griffin Mechanical General & HVAC Contracting ***Owner*** Fair Oaks, CA June 2003 - Sept 2017

- Working with Residential and Commercial building owners providing proposals, documents including plans, project manuals, supplementary and/or special condition specifications, addendums, and change orders.

- Responsibilities include applying for building permits, advising clients, securing the property, providing temporary utilities on site, managing personnel on site, providing site surveying and engineering, disposing, or recycling of construction waste, monitoring schedules, cash flows, and maintaining accurate records.

Golden State Equipment Repair Rancho Cordova, CA June 2000 - May 2003
General Manager

- Managed seven employees who provided Home Warranty repairs in both HVAC and Plumbing

- Responsibilities included scheduling, managing office staff ordering and stocking repair inventories.

Smits Sheet Metal Diamond Springs, CA April 1996 - May 2000
Commercial Project Manager

- specifications, addendums, proposals, and bidding.

- Responsibilities include applying for building permits, advising clients, securing the property, providing temporary utilities on site, managing personnel on site, providing site surveying and engineering, disposing, or recycling of construction waste, monitoring schedules and cash flows, and maintaining accurate records.

Ski Air Conditioning, Placerville CA February 1983 - March 1996
Installer/ Technician

- Working as an apprentice installing Heating and Air Conditioning equipment and ductwork for homes, commercial buildings, schools, and restaurants
- Installing sheet metal gutters, downspouts, and flashings

Working with Louise Day Griffin Mewuk Elder (Mother), Placerville, CA 1968-2010

- Was taught Sierra Central Me-Wuk Language.
- Working with my mother at the Native American Bead Shop Coloma Ca 1972-1975 making necklaces, cleaning feathers, sorting beads.
- Helping to make Nupa for elementary school demonstrations.
- Going on Native Plant surveys with the Forrest Service helping her with plant identification.
- Helping to identify and protect BRM, village and cultural sites before AB52 and 106 Laws.

EDUCATION

El Dorado High School Placerville, CA June **1981**

AFFILIATIONS

Tribal member of the Tuolumne band of Me-Wuk Indians (Proof of Enrollment attached) Department of Interior Fish and Game Lime time permit to carry Eagle Feathers.
California Contractors State License Board #724212
American Institute of Inspectors Certified Home Inspector

Venesa Kremer

YEAR23

415-827-8198 ■ venesakremer@gmail.com ■ 1516 Endres Ct. Sacramento, 95822

Education

- **Forensic Psychology**
  -Arizona State University
  -BA- in progress
- **Archaeoastronomy**
  -Politico di Milano
  -2020 Certificate of Completion
- **Crime Scene and Forensic Photography of Physical Evidence**
  -Sac. Regional Public Safety
  -2021 POST certification # 970-31684-20-002

Professional Skills

- Artifact rendering
- Research and writing
- Word, Power Point, Excel, photoshop, ProCreate

Interesting Facts

- PADI Certified
- Have a gold metal from the Oregon State games in judo
- Create cremains memorial jewelry

Experience

Lead Monitor/ Cultural Resources Assistant- Wilton Rancheria

- work in tandem with archaeologist to identify, record and mitigate protection measures for tribal cultural resources
- Research and consult on construction projects that fall under AB 52 and CEQA to encourage tribal-best practices
- Assist with inter office projects such as NAGPRA, grants, cultural education, creating tribal art

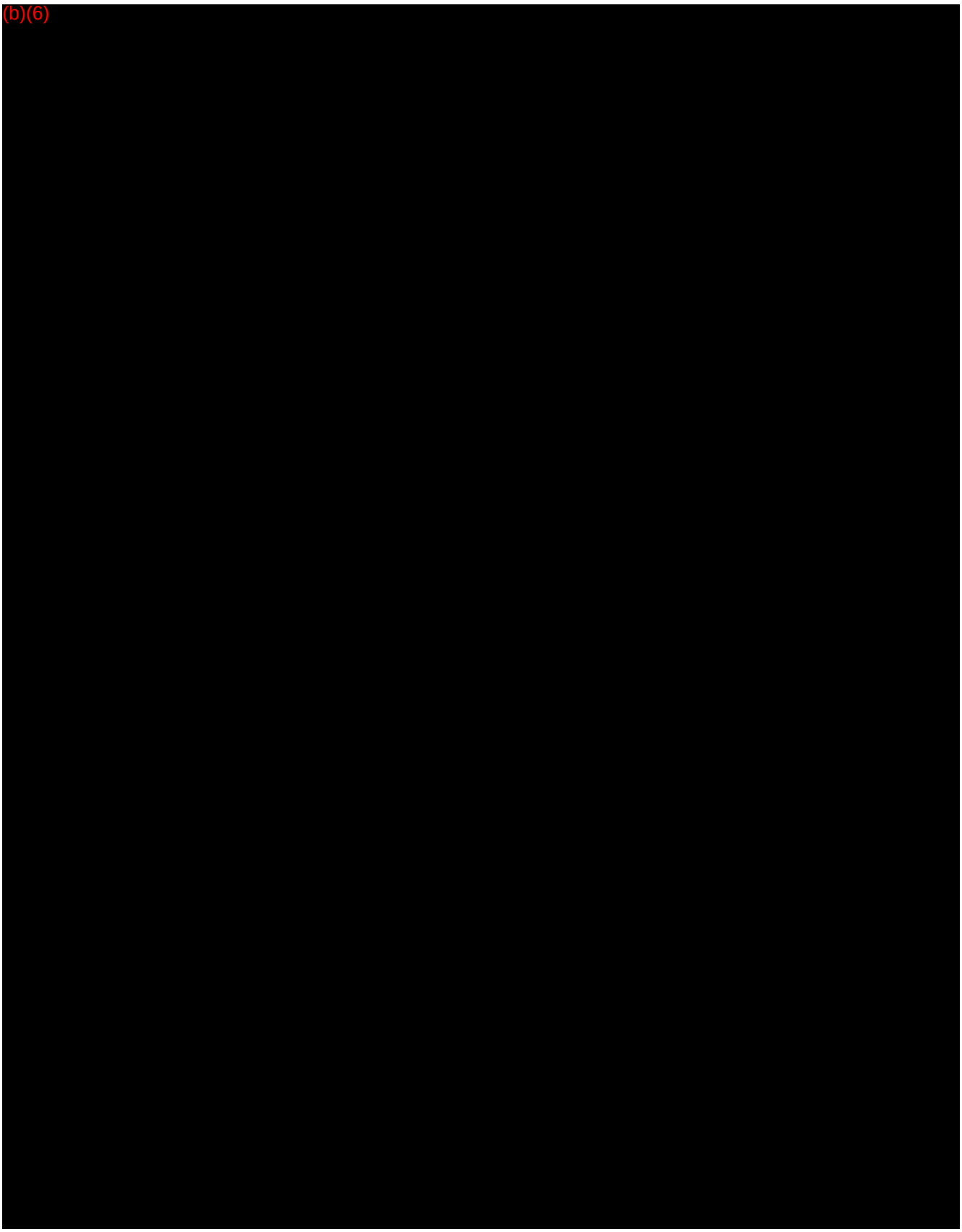
Tribal Statistics Data Entry- Confederated Tribes of Grande Ronde*Contact: John Spence PhD 503-871-4299 jdougspence@msn.com

- went through 5 years of hand written statistics and translated them onto a computer database

Native Artist- Owner- BlowMeGlass

- Glass and Graphic/Creative design
- worked with: DOJ, RAITO, Confederated Tribes of Warm Springs, Starbucks, Wilamette University, Masonic Lawn, Senator Brown of California, Wilton Rancheria

(b)(6)



[redacted]

project team

(b)(6)

[redacted]

(b)(6)

Sacramento Municipal Utility District Congressional Districts		
Applicant	CA-006	CA-007
Program/Project	CA-006	CA-007