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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:

UEI:

* Street1:

Street2:

* City: County:

* State:

Province:

* Country:

* ZIP / Postal Code: * Project/ Performance Site Congressional District:

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:

UEI:

* Street1:

Street2:

* City: County:

* State:

Province:

* Country:

* ZIP / Postal Code: * Project/ Performance Site Congressional District:

Additional Location(s)

Application for Federal Assistance SF-424		
* 1. Type of Submission: <input type="checkbox"/> Preapplication <input checked="" type="checkbox"/> Application <input type="checkbox"/> Changed/Corrected Application	* 2. Type of Application: <input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation <input type="checkbox"/> Revision	* If Revision, select appropriate letter(s): <input type="text"/> * Other (Specify): <input type="text"/>
* 3. Date Received: <input type="text" value="04/05/2023"/>	4. Applicant Identifier: <input type="text"/>	
5a. Federal Entity Identifier: <input type="text"/>	5b. Federal Award Identifier: <input type="text"/>	
State Use Only:		
6. Date Received by State: <input type="text"/>	7. State Application Identifier: <input type="text"/>	
8. APPLICANT INFORMATION:		
* a. Legal Name: <input type="text" value="Jamestown Board of Public Utilities"/>		
* b. Employer/Taxpayer Identification Number (EIN/TIN): <input type="text" value="16-6002545"/>	* c. UEI: <input type="text" value="DY2ETAMJQKV1"/>	
d. Address:		
* Street1: <input type="text" value="92 Steele Street"/>	Street2: <input type="text"/>	
* City: <input type="text" value="Jamestown"/>	County/Parish: <input type="text"/>	
* State: <input type="text" value="NY: New York"/>	Province: <input type="text"/>	
* Country: <input type="text" value="USA: UNITED STATES"/>	* Zip / Postal Code: <input type="text" value="14701-5433"/>	
e. Organizational Unit:		
Department Name: <input type="text" value="Power Plant"/>	Division Name: <input type="text" value="Power Plant"/>	
f. Name and contact information of person to be contacted on matters involving this application:		
Prefix: <input type="text"/>	* First Name: <input type="text" value="Cory"/>	
Middle Name: <input type="text"/>	* Last Name: <input type="text" value="Allen"/>	
Suffix: <input type="text"/>	Title: <input type="text" value="Power Plant Supervisor"/>	
Organizational Affiliation: <input type="text" value="Jamestown Board of Public Utilities"/>		
* Telephone Number: <input type="text" value="716-661-1682"/>	Fax Number: <input type="text"/>	
* Email: <input type="text" value="callen@jamestownbpu.com"/>		

Application for Federal Assistance SF-424

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

X: Other (specify)

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

Distribution Provider

*** 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:**

Jamestown Community Microgrid

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

* b. Program/Project

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

Add Attachment

Delete Attachment

View Attachment

17. Proposed Project:

* a. Start Date:

* b. End Date:

18. Estimated Funding (\$):

* a. Federal	<input type="text" value="17,377,945.00"/>
* b. Applicant	<input type="text" value="5,792,648.00"/>
* c. State	<input type="text" value="0.00"/>
* d. Local	<input type="text" value="0.00"/>
* e. Other	<input type="text" value="0.00"/>
* f. Program Income	<input type="text" value="0.00"/>
* g. TOTAL	<input type="text" value="23,170,593.00"/>

*** 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: * First Name:
Middle Name:
* Last Name:
Suffix:

* Title:

* Telephone Number: Fax Number:

* Email:

* Signature of Authorized Representative: * Date Signed:

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. Grid Infrastructure Deployment and Resilience	81.254	\$	\$	\$ 17,377,945.00	\$	\$ 17,377,945.00
2. Jamestown Board of Public Utilities					5,792,648.00	5,792,648.00
3.						
4.						
5. Totals		\$	\$	\$ 17,377,945.00	\$ 5,792,648.00	\$ 23,170,593.00

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1)	(2)	(3)	(4)	
	Grid Infrastructure Deployment and Resilience	Jamestown Board of Public Utilities			
a. Personnel	\$ 0.00	\$ 789,345.00	\$	\$	\$ 789,345.00
b. Fringe Benefits	0.00	224,174.00			224,174.00
c. Travel					
d. Equipment	12,243,870.00	4,779,130.00			17,023,000.00
e. Supplies	274,074.00				274,074.00
f. Contractual	4,835,000.00				4,835,000.00
g. Construction					
h. Other	25,000.00				25,000.00
i. Total Direct Charges (sum of 6a-6h)	17,377,944.00	5,792,649.00			\$ 23,170,593.00
j. Indirect Charges	0.00	0.00			\$ 0.00
k. TOTALS (sum of 6i and 6j)	\$ 17,377,944.00	\$ 5,792,649.00	\$	\$	\$ 23,170,593.00
7. Program Income	\$	\$	\$	\$	\$

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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.	Grid Infrastructure Deployment and Resilience	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
9.	Jamestown Board of Public Utilities	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
10.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
11.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
12. TOTAL (sum of lines 8-11)		\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>

SECTION D - FORECASTED CASH NEEDS

	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$ <input type="text" value="827,174.00"/>	\$ <input type="text" value="206,793.50"/>	\$ <input type="text" value="206,793.50"/>	\$ <input type="text" value="206,793.50"/>	\$ <input type="text" value="206,793.50"/>
14. Non-Federal	\$ <input type="text" value="1,158,529.60"/>	<input type="text" value="289,632.40"/>	<input type="text" value="289,632.40"/>	<input type="text" value="289,632.40"/>	<input type="text" value="289,632.40"/>
15. TOTAL (sum of lines 13 and 14)	\$ <input type="text" value="1,985,703.60"/>	\$ <input type="text" value="496,425.90"/>	\$ <input type="text" value="496,425.90"/>	\$ <input type="text" value="496,425.90"/>	\$ <input type="text" value="496,425.90"/>

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.	Grid Infrastructure Deployment and Resilience	\$ <input type="text" value="1,533,600.00"/>	\$ <input type="text" value="12,408,822.00"/>	\$ <input type="text" value="2,068,348.00"/>	\$ <input type="text" value="540,000.00"/>
17.	Jamestown Board of Public Utilities	<input type="text" value="1,158,529.60"/>	<input type="text" value="1,158,529.60"/>	<input type="text" value="1,158,529.60"/>	<input type="text" value="1,158,529.60"/>
18.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
19.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
20. TOTAL (sum of lines 16 - 19)		\$ <input type="text" value="2,692,129.60"/>	\$ <input type="text" value="13,567,351.60"/>	\$ <input type="text" value="3,226,877.60"/>	\$ <input type="text" value="1,698,529.60"/>

SECTION F - OTHER BUDGET INFORMATION

21. Direct Charges: <input type="text" value="\$23,170,596.00"/>	22. Indirect Charges: <input type="text" value="0"/>
23. Remarks: <input type="text"/>	

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: <input type="checkbox"/> a. contract <input checked="" type="checkbox"/> b. grant <input type="checkbox"/> c. cooperative agreement <input type="checkbox"/> d. loan <input type="checkbox"/> e. loan guarantee <input type="checkbox"/> f. loan insurance	2. * Status of Federal Action: <input type="checkbox"/> a. bid/offer/application <input checked="" type="checkbox"/> b. initial award <input type="checkbox"/> c. post-award	3. * Report Type: <input checked="" type="checkbox"/> a. initial filing <input type="checkbox"/> b. material change
--	--	--

4. Name and Address of Reporting Entity:

Prime SubAwardee

* Name:

* Street 1: Street 2:

* City: State: Zip:

Congressional District, if known:

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

6. * Federal Department/Agency: <input type="text" value="US Department of Energy"/>	7. * Federal Program Name/Description: <input type="text" value="Grid Infrastructure Deployment and Resilience"/> CFDA Number, if applicable: <input type="text" value="81.254"/>
--	--

8. Federal Action Number, if known: <input type="text" value="DE-FOA-0002740"/>	9. Award Amount, if known: \$ <input type="text"/>
---	--

10. a. Name and Address of Lobbying Registrant:

Prefix * First Name Middle Name

* Last Name Suffix

* Street 1: Street 2:

* City: State: Zip:

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

Prefix * First Name Middle Name

* Last Name Suffix

* Street 1: Street 2:

* City: 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:

* Name: Prefix * First Name Middle Name

* Last Name Suffix

Title: Telephone No.: Date:

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iv. Technical Volume

Cover Page – Jamestown Board of Public Utilities Community Microgrid

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

Technical Point of Contact: Cory Allen **Business Point of Contact:** Brad Bentley

Organizations: Jamestown Board of Public Utilities (Lead), City of Jamestown, Jamestown Public Schools. Leadership Team: Brad Bentley, Cory Allen, Ellen Ditonto, Mitch Simons, Amanda D’Aurora, Jarrett Devereaux, David Leathers, Kristofor Sellstrom

Total Project Costs: \$23,170,593 (Federal Request: \$17,377,945, Local Match: \$5,792,648)

Project Period: 60 months

Project Location: City of Jamestown, Chautauqua County, Western New York Region, New York State. The City of Jamestown is designated as a Disadvantaged Community using the Climate & Economic Justice Screening Tool (CEJST) as defined in the Justice40 Initiative. There are numerous federal agencies that consider the city to be disadvantaged because of significant poverty, high unemployment rates, potential environmental justice areas of concern, aging infrastructure, and old, inadequate housing stock.

City of Jamestown Census Tract	Area of Persistent Poverty ¹	Disadvantage Community – NYSERDA ²	Disadvantaged Community – NYS Climate Act ³	Opportunity Zone New York State ⁴	NYS DEC Potential Environmental Justice Area ⁵	FEMA Economically Disadvantaged Community ⁶
36013030100	X	X	X		X	X
36013030200	X	X	X		X	X
36013030300	X	X	X		X	X
36013030400					X	X
36013030500	X	X	X	X	X	X
36013030600	X	X			X	X
36013030700	X				X	X
36013030800	X				X	X

Statement Regarding Confidentiality: Reports and associated documents will be open to the public to enable other communities to learn from the results of this project.

¹ Areas of Persistent Poverty: <https://maps.dot.gov/BTS/GrantProjectLocationVerification/>

² NYSERDA Disadvantaged Communities: <https://www.nyserda.ny.gov/ny/disadvantaged-communities>

³ NYS Climate Act Disadvantaged Communities: <https://climate.ny.gov/Our-Climate-Act/Disadvantaged-Communities-Criteria/Disadvantaged-Communities-Map>

⁴ Opportunity Zone: <https://esd.ny.gov/opportunity-zones>

⁵ NYS DEC Environmental Just Areas: ArcGIS Web map of the Potential EJ Areas, as designated in the 2020 updates

⁶ FEMA Economically Disadvantaged: https://www.fema.gov/sites/default/files/documents/fema_equity-webinar-final_8-17-21.pdf

Project Overview

The Jamestown Board of Public Utilities, a small municipal utility⁷, will utilize DOE support to deploy a full substation microgrid system to enhance the resiliency of the electrical infrastructure serving a disadvantaged community and better adapt it for the future of electrification and decarbonization while minimizing cost and energy burden.

The Jamestown Board of Public Utilities (JBPU) is one of the largest municipally owned and operated utilities in New York State, and one of the few with its own generating capability. Governed by a nine-member board, the BPU provides electricity, water, wastewater, sanitation, and district heating services to the city of Jamestown, Falconer, Celoron, Lakewood, and parts of the Towns of Busti, Ellicott, North Harmony, and Kiantone. JBPU has been providing safe, reliable electric services for over 130 years. Throughout this period the JBPU has continuously evolved to stay current with technologies used to generate, transmit, and deliver electricity to a community of over 40,000 people.

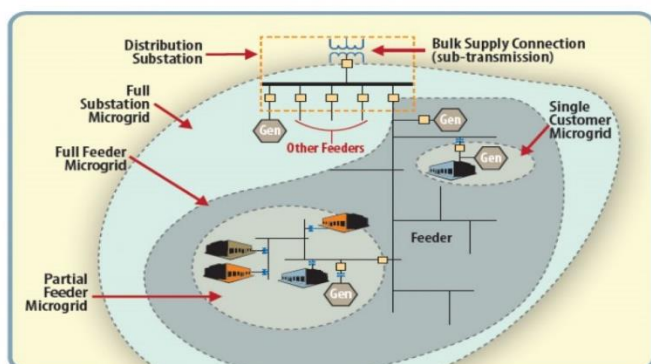


Figure 1 - Sandia National Labs: The Advanced Microgrid 2014

The JBPU has long recognized the importance of utility service reliability and is always striving to improve. A microgrid system, defined as “a group of interconnected loads and distributed energy resources within clearly defined electrical boundaries that act as a single controllable entity with respect to the grid” is a promising approach to improve system reliability. A microgrid can ensure reliability and resiliency for a community

by reducing risks that would normally be outside of its control (i.e., transmission risk, severe weather). Because of the unique presence of the JBPU’s generating capability and its direct intra-connection within the JBPU’s service area, the creation of a community microgrid is highly feasible and could be progressed rapidly.

Considering its geographical location, extreme weather events including heavy lake effect snowstorms that regularly occur, and the fact that the National Grid 115kV electrical transmission system in the region has had a history of causing outages that have significantly impacted all JBPU customers, the creation of an “island ready microgrid” within the JBPU service area is of societal value. Considering the unique characteristics of the JBPU infrastructure and the modest capital and operational costs needed to create such a system, the proposed microgrid represents a

⁷ Jamestown Board of Public Utilities is considered small as it serves less than 4,000,000MWH of electricity per year. In 2021, JBPU served 402,546 MWHs.

viable, practical, economic, and scalable solution to improve the resiliency of the energy infrastructure in the area.

JBPU 2015 Microgrid Study

In 2015, the JBPU partnered with the New York State Energy Research and Development Authority (NYSERDA) through the NY Prize program to do a microgrid evaluation for the JBPU⁸. The study was done by O'Brien & Gere (now part of Ramboll) and is available upon request. The JBPU has several characteristics which make it a great fit for a microgrid deployment compared to other locations and although the results of the 2015 study were very favorable from technical, reliability and resiliency perspectives, there were hurdles from a financial perspective that stalled the project. With the community struggling economically, JBPU decided not to pursue the microgrid in 2015 despite those favorable study outcomes. Ultimately, small, and disadvantaged communities like Jamestown have a harder time justifying investments in reliability and resiliency because the cost of those investments is paid upfront and generally the payback is only realized if an event occurs, and then only through a reduction in lost revenue or societal productivity and health which can be difficult to quantify.

Technology Changes

Since the 2015 study, the available technologies to facilitate a microgrid have improved. The development of new technologies along with advancements in large scale lithium-ion batteries, will enable a more robust solution. In the original study, one of the major hurdles for the JBPU was that the generator was not always online and JBPU had no black start capability. Therefore, it was more probable that the generation would be offline at the time of a random event and JBPU's microgrid would not function because it would have no way to turn on after that event occurred. Another technical challenge was maintaining system frequency after isolation as well as ride-through momentum during an isolating event. The existing gas turbine, although flexible does not have high inertia and may have been difficult to control during an event. This proposal solves those issues by including a 3MW lithium-ion battery storage system. The battery system will be sized to enable the startup of the gas turbine, so that if the gas turbine is not online the battery will have sufficient capacity and controls to black start the generator. The battery system is also expected to enhance frequency control and ride-through capability due to its inherently fast response times. Another constraint was the lack of software needed to evaluate current system loading and overall system modeling. JBPU has been investing in technology to lower this hurdle; it has invested in advanced metering infrastructure and is in the process of creating a digital twin of its distribution system. These advancements will enable better modeling and planning for an event, but additional control systems are still needed. Smaller scale battery storage has also progressed and coupled with JBPU's investments this will enable smaller distributed resources to be integrated with a broader microgrid. Also, since 2015, the drive

⁸ June 24, 2015, the City of Jamestown through its Board of Public Utilities ("JBPU") and the New York State Energy Research and Development Authority ("NYSERDA") entered into Agreement #65527 for a NY Prize RFP 3044 Stage 1 Feasibility.

toward electrification and especially electric vehicles has accelerated, increasing the need to ensure reliable and resilient infrastructure to serve these new and rapidly growing needs.

Alignment with State, Local, and Federal Policy

The political landscape continues to evolve and encourage microgrid formation. This proposal is in alignment with federal, state, and local goals. In 2014, the State of New York progressed Reforming the Energy Vision (REV)⁹. This legislation created a framework to progress distributed energy resources and microgrids. The study JBPU progressed in 2015 was enabled by that initiative and although JBPU did not move to a construction stage due to the hurdles mentioned above, the JBPU and this proposal are still aligned with the REV initiative.

In 2016, the state of New York passed the Clean Energy Standard¹⁰ (CES), which expanded goals of the 2004 Renewable Portfolio Standard. The Clean Energy Standard set mandates of procuring renewable energy for 70% of the state's energy needs by 2030.

Then, in 2019, the State of New York passed the Climate Leadership and Community Protection Act¹¹ (CLCPA) which adopts measures to put the state on a path to reduce statewide greenhouse gas emissions by eighty-five percent by 2050 and net zero emissions in all sectors of the economy. This legislation will drive electrification economy-wide.

These efforts by the state of New York to decarbonize the economy, while necessary, will have a direct impact on small communities like those that the JBPU serves. Although the motivation is clear and important, the side effects and consequences still need to be considered and planned for. The most significant issue the JPBU needs to consider is the impact these transitions will have on the grid's reliability and resiliency using the current infrastructure.

Today, the electric services, distribution system, transmission system, and generators are designed to serve a far less load than is envisioned by these laws and infrequent outages are tolerated because consumers can utilize other energy sources during those times. Reliability standards are based on combined risk of all energy sources and do not necessarily contemplate the impact of moving all heating and transportation loads to electricity.

In a fully electrified future, outages will not be tolerated, as they could reasonably lead to the loss of life of our most frail residents. When the coldest day of the year occurs and all the heating demand is electric, and all the vehicles are electric, the community needs to know that the power will be there. Most recently during the Blizzard of 2023, nine individuals died as a result of having no heat in their homes due to electrical outages.¹²

⁹ The New York State Reforming the Energy Vision (REV) is an initiative being undertaken by the PSC, NYSERDA, NYPA, and the Long Island Power Authority to modernize the electric grid in New York State and make it clean, resilient, and more affordable, while improving consumer choice. <https://rev.ny.gov/>

¹⁰ <https://www.nyscrda.ny.gov/All-Programs/Clean-Energy-Standard>

¹¹ <https://climate.ny.gov/>

¹² <https://www.wgrz.com/article/weather/severe-weather/winter-storm-related-deaths-confirmed-kathy-hochul-buffalo-wny/71-c1adbed1-51a0-4cec-894d-415e50bc6ce2>

The JBPU believes that these risks cannot be fully mitigated by transmission improvements or large-scale renewable developments. JBPU believes there needs to be significant investment in microgrids, software and hardware technology, energy storage, and distributed energy resources to achieve these important goals while ensuring and enhancing grid reliability and resiliency. The microgrid proposed herein is directly relevant to achieving the state's goals expressed in the REV, CES, and CLCPA and vital to ensuring the community has a reliable and resilient electrical system. In addition, the New York Independent System Operator expects to need significant dispatchable, emission free resources to meet the state of New York's decarbonization objectives¹³. This project will create some storage and load flexibility that can be utilized to assist the regional transmission system, overall state objectives, and create sufficient revenue for long term operation and maintenance of the system.

The City of Jamestown, JBPU's core service community, also has climate and resiliency goals and realizes the importance of the electrical system to achieve those goals. JBPU has provided fast electric vehicle charging infrastructure for its community, converted to all LED streetlights, and has enabled the city to become a clean energy community¹⁴. The JBPU also is assisting the city in its effort to become a Climate Smart Community¹⁵ with assistance from FEMA's BRIC Program¹⁶

The JBPU Microgrid proposal also aligns with Federal Policy and objectives. The proposal directly aligns with the Bipartisan Infrastructure Law, Justice40 Initiative¹⁷, Inflation Reduction Act¹⁸, Consolidated Appropriations Act, 2021 (P.L. 116-260), and The Build Back Better Act.

The project will directly achieve the strategic goals of this FOA including transforming community resilience, increasing clean energy deployment (controls proposed will enable integration of future distributed renewable energy resources and enable storage of renewable generation during regional over generation periods), leveraging of non-federal capital (Jamestown BPU's commitment to match federal investments and operate and maintain the system into the future), and advanced community benefits (through better resiliency and reliability). This proposal also directly supports meaningful community and labor engagement, investments in the American workforce, addresses diversity, equity, inclusion, and as a Justice40 Community, direct investment into disadvantaged communities.

This project will leverage tool kits, reports, and information from DOE's microgrid research and its R&D test sites.¹⁹ Electric Power Research Institute and The Smart Electric Power Alliance also

¹³ <https://www.nyiso.com/documents/20142/23494579/Power-Trends-2022-Datasheet.pdf/00bff147-bb47-ada2-9199-80182013be91>

¹⁴ <https://www.nyserda.ny.gov/All-Programs/Clean-Energy-Communities>

¹⁵ <https://climatesmart.ny.gov/>

¹⁶ <https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities>

¹⁷ <https://www.whitehouse.gov/environmentaljustice/justice40/>

¹⁸ <https://www.whitehouse.gov/briefing-room/statements-releases/2022/08/17/fact-sheet-inflation-reduction-act-advances-environmental-justice/>

¹⁹ <https://www.energy.gov/oe/microgrid-portfolio-activities>

have reports on test cases and document the need for microgrid deployments²⁰. These tools combined with the experiences of others will lower risk and enable a successful project.

With the combination of technical advancements, cost reductions, changes in political landscape, and investments by JBPU since 2015 and with the potential for federal support, the JBPU believes it is time to progress its microgrid plan.

Project Objectives

The Jamestown Community Microgrid Project will provide the Jamestown Board of Public Utilities (JBPU) with the tools and capacity to deliver reliable and resilient electrical and thermal services to the downtown corridor and broader community during a transmission or sub-transmission outage(s). The microgrid will enable potentially life-saving energy to be delivered to public and emergency services, schools, senior and assisted-living housing facilities, homeless shelters, small businesses, EV charging stations, and the regional hospital in the City of Jamestown. The microgrid will enable the community to provide essential services to both the disadvantaged local population and the region during an emergency when the power would otherwise be out for an extended period. As the country, state, and local community move toward electrification and the resulting decarbonization, the reliability and resiliency of the electrical grid will be critically important to not only maintain but to significantly enhance. It will also enable customers connected to JBPU's hot water network to pump water inside their facilities to heat to their buildings during an electrical outage.

The microgrid project will provide equitable access to well-paying union labor and prevailing wage jobs in the Justice40 community and will create additional temporary well-paying union and prevailing wage jobs during the construction phase. Jamestown will be safer, more resilient, more affordable, and a cleaner place to live which will hopefully enable Jamestown to take another step toward its goals of economic growth, health, and emerge from poverty.

The microgrid system will be designed to be expandable/maintainable to handle future electrification load growth and new distributed energy technologies. The construction of a microgrid will enable Jamestown to generate new revenue through ancillary services to keep community costs down, enable more rapid decarbonization, and maintain the microgrid system.

DOE Impact

Since the 2015 study, the JBPU has invested in the deployment of advanced metering infrastructure which is important to balancing the microgrid and JBPU has made other capital improvements to the distribution system and power plant, including:

- switchgear and transformer replacements,
- control system upgrades,
- overhauling the prime movers and generators,
- securing the natural gas pipeline, and

²⁰ <https://www.epri.com/research/products/00000003002008205>

- various upgrades to the distribution system (including relays, transformers, substation replacements).
- Digital twin of its electrical system to further enable integration of a microgrid and renewable distributed energy resources.

With no desire to increase the residents' energy burden by passing along infrastructure costs to a disadvantaged community, and no other public or private sector capital funding to create a microgrid, this project has not, and likely will not occur without support from the Department of Energy. The JBPU team believes the prior study clearly shows that it would add value for the community in terms of reliability and resiliency; however, assistance with the initial investment is required. JBPU has prepared, trained, and invested where it can, but DOE support is needed to launch this project off the starting line.

This project is designed to reduce likelihood and consequence of impacts to the electric grid due to extreme weather and natural disasters. The project is comprehensive and transformative for the community and is covers activities of interest in this FOA and the BIL²¹. As this microgrid covers a significant portion of the community, is in a great location for supporting the region, and JBPU is a small utility, JBPU believes that this project demonstrates the greatest community benefit and should be a priority project for this FOA.

Community Benefits

The City of Jamestown is designated as a Disadvantaged Community using the Climate & Economic Justice Screening Tool (CEJST) as defined in the Justice40 Initiative.

The proposed microgrid's core benefits include improving the resiliency of the electrical system and the supporting array of community services that provide critical services to the City of Jamestown and surrounding communities. These include resources such as emergency response services, healthcare services, public education programs, and numerous qualities of life services including housing, shelters, and social services.

Key benefits of deploying the microgrid are the improvement of system robustness, resiliency, and security during an emergency. JBPU is the load-serving entity (LSE) responsible to physically deliver electricity throughout the City of Jamestown and the surrounding communities of Celoron, Falconer, and the Town of Ellicott. Nearly half of the JBPU customers representing around 10,000 individuals will be directly connected to the proposed microgrid. Because the microgrid also serves many critical customers directly through resilient underground feeders, 100% of the JBPU service area, including all JBPU customers, will directly or indirectly benefit from the microgrid's operation.

The JBPU, as the owner and operator of the microgrid, will serve the widest array of possible customers in the proposed microgrid. In an extended emergency, it is feasible that, based on the availability of the overhead feeders and generation capacity, a very high percentage of JBPU

²¹ Topic Area 1, Technical approaches of interest: C, D, H(a), H(b), I, J, L & BIL SECT 40101(e)(1)(A)-(L)

customers will be served directly. Significant thermal energy will also be supplied to the microgrid's customers during islanded microgrid operation and charging for electric vehicles will be accessible to all.

This entire proposed project area is in Census Tract 305, a designated Opportunity Zone. This Opportunity Zone has a median household income of approximately \$17,000, which is 76% lower than the median household income for the state of New York of \$72,000. The poverty rate is 44%, which is 31% higher than the rate for New York State. The median home value is approximately \$53,000, which is 84% lower than the median home value for the state of New York of \$340,000.

The project also is within an approved and designated Brownfield Opportunity Area, Local Waterfront Revitalization Program area, and Environmental Justice Area. The City of Jamestown has a high overall poverty rate with 29.5% of people within the city at or below the poverty level in 2019. This is over double the NYS average of 13.0% and nearly triple the United States rate of 11.4%. Additionally, the median household income within the city in 2019 was only \$33,420, almost half of the NYS average of \$62,843. Numerous Census Tracts within the City qualify as Disadvantaged Communities, according to the HUD threshold. The proposed project is consistent with the Smart Growth principles outlined in the Western New York Economic Development Strategic Plan, State priorities that call for reinvestment in urban centers, placemaking, workforce development, and regional economic cluster plans.

As part of the western NY Snowbelt, Jamestown and the surrounding region get a fair share of cold and extreme weather. The coldest nighttime temperature occurs during the month of January, with an average of 14.4°F. As the Jamestown area serves as a central hub for the western NY region beyond Buffalo, it is essential that the JBPU community continues to provide vital public services such as police and fire department protection, emergency room medical treatment, health care, food distribution, and community shelters during a regional or widespread power outage.

With rising energy costs and the potential future strain on the grid because of the electrification of everything from building heating to transportation, the implementation of an alternative, reliable, low-cost, and emission-free solution has never been greater. The JBPU system is running at peak levels during the winter season. That time of year has significant electric heating demand and the BPU expects the winter peak to become even greater as electrification drives customers to install more heat pumps, electric water heating, EV charging, and other appliances. The community could potentially suffer from catastrophic consequences if electricity is lost for days as residents rely on electricity for heating, powering life-sustaining resources and equipment, and transportation.

JBPU believes in the future of electrification but feels solutions are needed to minimize this significant risk that could put many lives in danger. This proposal to create a microgrid is a starting point for that effort to ensure that the community will have warm shelters, food, transportation,

and ensure essential services can be rendered during emergency conditions. This resource would benefit the entire region and especially benefit this Justice40 community.

This microgrid proposal seeks to ensure that public services can move toward acquisition of electric vehicles knowing they can be reliably charged during a grid outage. Municipal EV charging will ensure that electric public service vehicles will have a place to charge during an emergency. Lack of secure charging is a concern for the police, fire, EMS, and schools during emergency conditions. These public services must be able to charge their vehicles during an outage condition to ensure lifesaving services and restoration efforts can be provided. Without such infrastructure, the public sector fleets will lag in conversion to electric vehicles which has negative consequences for public health and may hinder overall public adoption.

This project would utilize well-paid union and prevailing wage labor and would reduce hardship and the risk of business failure and associated job loss caused by outages. The included community benefit plan describes overall community benefits and goals in more detail.

Other Benefits

The proposed communication and control architecture of this project will enable the JBPU to demonstrate real-world solutions associated with synchronizing variable load to generated output in real-time dynamic conditions including impacts of renewables. This dynamic control is critical for microgrid operations and increasing penetration of renewable energy, especially where the inertia of a regional power grid is unavailable or unable to provide that stability. This knowledge and experience could be leveraged by other communities which need to improve resiliency to drive toward decarbonization.

In addition, as markets reform and change, the JBPU will be positioned to participate in economic activities during normal operations. The potential addition of distributed energy resources, such as solar, battery storage, and controllable load, could not only improve the number of customers served by the microgrid but could also create a potential to offset peak transmission congestion and capacity, and may enable other financial benefits to maintain or possibly lower the energy burden for JBPU customers. This may also improve JBPU's load factor which could result in renewable utilization improvements and lower costs.

Technical Description

The existing JBPU electric sub-transmission system consists of three major substations, one of which is co-located with JBPU's power plant (Carlson Station). At the transmission interconnection point to National Grid in Falconer, NY, JBPU's Dow Street Substation receives power at 115 kV via two National Grid feeders from the adjacent National Grid Falconer Substation. At Dow Street, power is stepped down to 13.8kV for distribution to a portion of the JBPU customer base and to 34.5 kV for sub-transmission to the Chadakoin Substation and Carlson Station. Carlson Station, which will be the core of the Jamestown Microgrid, is comprised of 13.8 kV generation facilities and a major distribution substation feeding customers and smaller distribution substations.

The targeted improvements include hardware and software, battery storage, black start, controls and systems, and chargers, to enable the JBPU to serve its core community during a local, regional, or national grid-related problem. The existing investments and network topology of the local system, and existing generation resources makes this project very viable in Jamestown. The JBPU’s existing skilled and unionized workforce consisting of electricians, mechanics, line workers, and power plant operators as well as its engineering and leadership team will ensure the system can be implemented, maintained, and utilized during an event.

The JBPU’s Carlson Station has long served the community with locally produced energy. Once a coal-fired facility with a capacity of approximately 48 Mw, Carlson Station was modified in 1984 to enable it to simultaneously generate hot water. In recent years the station has been converted to use natural gas as its exclusive fuel. At the heart of the facility is a General Electric LM6000 gas turbine generator which was commissioned in 2001 and is designated as “G7”. G7 is configured to allow it to operate with a simple cycle capacity of 43 Mw. Using a heat recovery steam generator (HRSG) and the older steam turbines located at the site, G7 can be operated in combined cycle configuration. The HRSG steam can also be supplemented with the output from two of the facility’s converted gas-fired steam boilers. With all units in operation, Carlson Station has an electrical capacity of approximately 78 MW and a thermal capacity of 80 million BTU/hr. It is also a critical combined heat and power (CHP) resource for 70 buildings in the immediate downtown area which are supplied with hot water for building and domestic hot water needs.

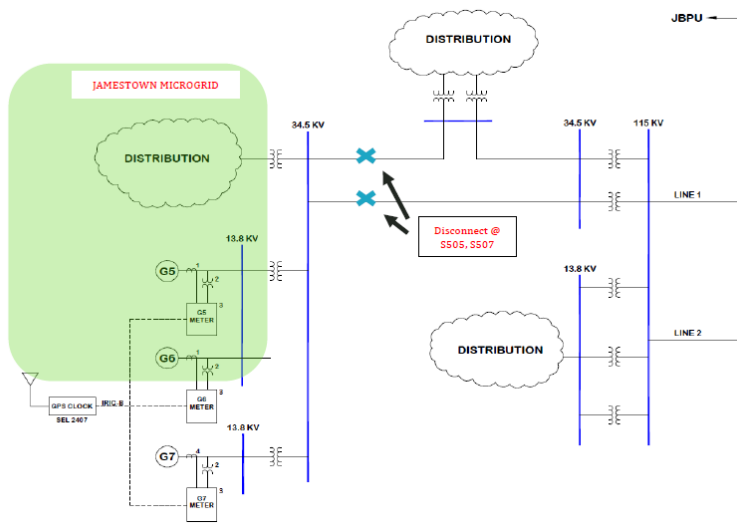


Figure 2 Substation Connection and Isolation

During any outage event when the JBPU’s electric system is disconnected from National Grid’s 115 kV system, the LM6000 gas turbine generator will be the primary source of the Jamestown Microgrid. The Jamestown Microgrid will utilize existing generator G7 at Carlson Station, along with the Station’s on-site electrical distribution substation, to power a resilient network of existing underground and overhead electrical feeders serving downtown Jamestown and the surrounding community to ensure a high level of utility service reliability independent

of the National Grid 115kV system. The electricity produced by G7 will also allow Carlson Station to operate the equipment located there needed to supply the thermal demand of the microgrid through the JBPU’s existing district heating system that supplies 70 buildings with thermal energy.

The distribution substation located within Carlson Station will be the main hub of the microgrid. Analysis of the historical load profile for distribution at Carlson Station confirms that existing generator G7 is sized appropriately for the overall load seen by that station for the majority of

the year. As demonstrated here, utilizing the power plant as the primary generation source for the proposed Jamestown Microgrid, along with the 34.5 kV infrastructure at Carlson Station, JBPU intends to island Carlson Station from the rest of JBPU’s electrical system at circuit breakers S505 & S507, and operate in microgrid mode through the generation of G7 and the existing electric distribution downstream.

This distribution system delivers power to many public services and critical facilities located in the central and western portions of the JBPU service area, including but not limited to a regional hospital and rehabilitation facility, public services including city hall, police, fire, and Department of Public Works (DPW), shelters/areas of refuge, schools, water and wastewater pumping stations, banks, gas stations, hotels, housing (elderly, low-income, and market residential), retail (Wegmans, Tops Markets, Home Depot, etc.), and public communications (cell tower backbone, telephone, TV, and radio).

The Carlson plant distribution substation supplies electricity to customers through eleven (11) separate feeders. Four of those circuits are highly resilient underground circuits that supply

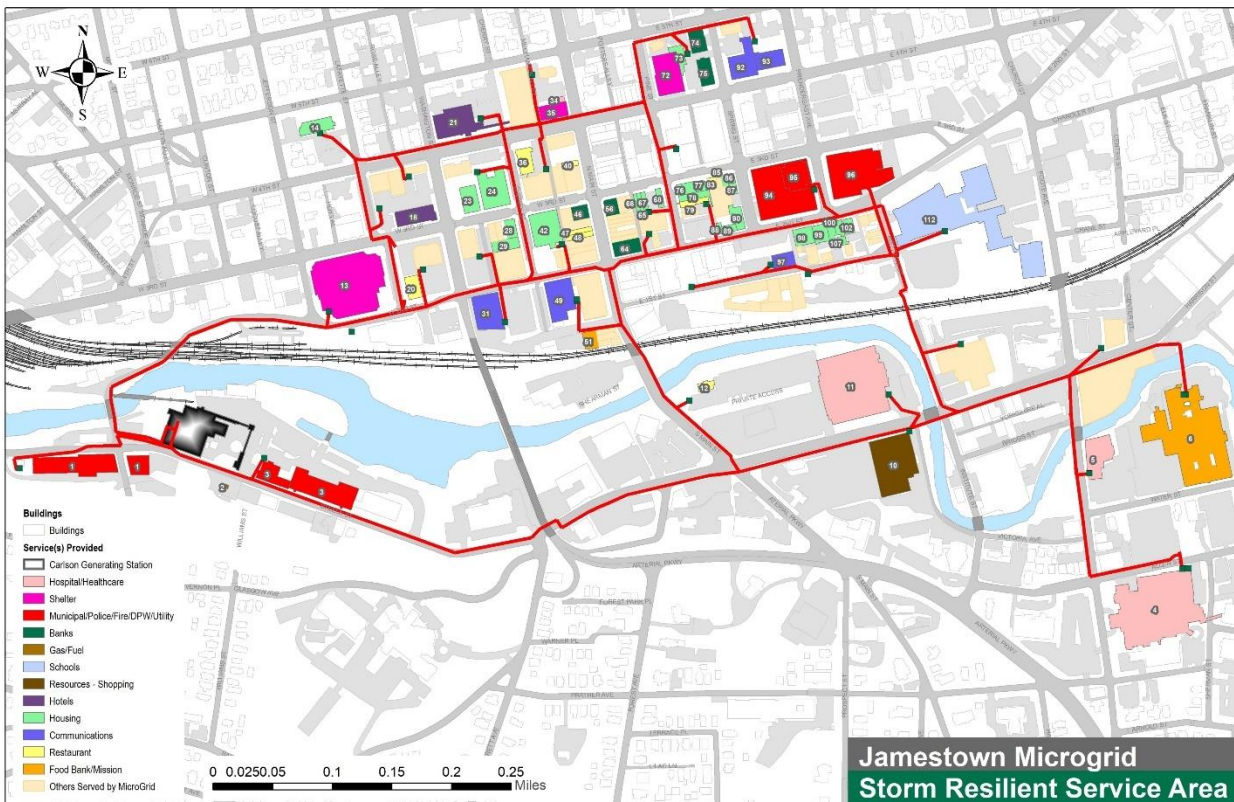


Figure 3 - Storm Resilient Area ([Link to higher resolution map](#))

Jamestown’s core downtown area. The resilient portion of the microgrid is completely within the disadvantaged area tracts 36013030500 and 36013030600 with the Carlson station located in the 36013030500.

The remaining seven (7) feeders, while available to be served by the microgrid, are less resilient circuits (fed overhead vs underground) but could be served depending on the nature of the outage and would serve adjacent disadvantaged tracts.

Technical Features

The Jamestown Microgrid will encompass characteristics/features as defined by the Department of Energy including:

- Geographically delimited or enclosed
- Connected to the main utility grid at one point of common coupling (PCC)
- Fed from a single substation
- Can automatically transition to/from and operate islanded
- Operates in a synchronized and/or current sourced mode when utility-interconnected
- Is compatible with system protection devices and coordination
- Can be electrically established from local/black start generation resources
- Includes Demand Response (DR)
- Renewables (inverter interfaced)
- Integrated energy storage
- Energy Management System (EMS) to balance real-time generation supply with distribution system demand
- Includes informational exchanges that can take place across the PCC in real-time.

The proposed microgrid architecture will support FERC's requirements in FERC orders 784 and 755. The Smart Power Infrastructure Demonstration for Energy Reliability and Security (SPIDERS) Joint Capability Technology Demonstration (JCTD) is another federal-level program initiated by the Department of Defense (DoD) and the Department of Energy (DoE) to protect task-critical assets from loss of power due to cyber-attack, integrate renewable and other distributed energy generation concepts to power task-critical assets in times of emergency, sustain critical operations during prolonged power outages and manage installed electrical power and consumption efficiency to reduce petroleum demand, carbon footprint and cost. There is also potential to select software for the microgrid controls that would enable local DER aggregation and control during a system event to further the resources available to the community to solve electrical constraints and support FERC Order 2222.

Electric Vehicles

In addition to the microgrid serving existing critical loads, this proposal will enable electric vehicle charging during normal and emergency scenarios. A significant hindrance to electric vehicle adoption for public sector vehicles is the need for an extremely reliable charging solution that is available through all emergencies, including electrical outages. During an emergency, public service vehicles cannot be out of commission because they are unable to be recharged. Today, the JBPU owns and operates a community gas/diesel fueling station that provides low-cost fuel for the fire, police, city government, utility, and school vehicles. JBPU proposes to replicate its successful public partnership fueling model to keep costs down for the public sector and to

ensure extremely reliable charging resources are available for these essential public service vehicles. JBPU would secure a site that is accessible during projected emergency conditions and feed the site facilities from a resilient supply through underground circuits fed from the proposed microgrid. This charging station would be set up for future expansion and designed to handle the larger vehicles and trailers that the current stations do not provide provisions for. In addition, two of the JBPU's four existing public facing HVDC fast chargers are fed from resilient underground circuits that would be powered by the proposed microgrid. JBPU proposes to also add more HVDC fast charging stations on resilient underground circuits fed by the microgrid for public use. JBPU has helped the local school system evaluate conversion of their fleet to electric busses but charging in an emergency is a real and growing concern. Reliable charging in emergency conditions is required for safe electric vehicle adoption both locally and regionally. JBPU has experience with installing and operating electric vehicle equipment, has partnerships with the public sector operators already through its existing fueling station, and has the desire to solve this issue for its community and the region (as there are no known stations in the region that have reliable and resilient power supplies).

Equipment and Upgrades

Upgrades to the existing electric infrastructure include the following additions:

- Voltage and current transformers
- Energy Management Systems
- Outage Management Systems
- Microgrid control systems
- Black start Li-Ion Battery System (3MW, 12MWh) and grid-forming inverters
- Relays and circuit breakers
- Phasor measurement units
- Synchrophasor vector processor
- Synchrophasor data concentrator
- Level 3 EV charging equipment fed by resilient supply circuits
- Power Plant Essential services inverter replacement and refeed to replace reliance on old diesel generator
 - Replacement of old underground conductors that will be part of the microgrid
 - Distributed battery storage and associated controls and components

The JBPU's microgrid will enable various capabilities, such as those identified in the overall program report created by Brookhaven National Laboratory for the New York Research and Development Authority, analyzing the results of the New York Prize Stage 1 Feasibility Assessments.²² These key capabilities include the ability to serve more than one physically separated critical facility, primary generation that is not diesel, onsite power in both grid-connected and islanded modes, enables seamless and automatic grid separation, capable of 24/7 operation, load following when running in parallel to grid and when islanded, diverse customer mix, resiliency to wind, ice, rain, snow, black start capability, cyber secure, smart grid technology

²² <https://www.nyserda.ny.gov/-/media/Project/Nyserda/files/Publications/Research/Electric-Power-Delivery/17-23-Evaluation-of-New-York-Prize.pdf>

integration, distribution automation, energy storage, demand response capabilities, clean power integration, storage and power cost optimization, coordination of protection settings, selling of energy and ancillary services, and data logging. Overall, the outcome of this project will be a reliable and resilient microgrid network capable of running as an isolated system during an emergency to provide shelter, resources, vehicle charging, and heat to the community and region.

Key Attributes and Risk Management

The proposed microgrid will provide the JBPU with the ability to prepare for, withstand, and recover rapidly from disruptive events, irrespective of source or cause, while adapting to the changing conditions of the electric loads required to supply the core area of downtown Jamestown for the safety of the residents. Overall, a community microgrid can help improve energy security, lower costs, increase reliability, and reduce greenhouse gas emissions, making it an asset for the community. All projects have risks; however, JBPU believes it is in a good position to manage risks and ensure a successful project. Some of the key components of this proposal include:

Access to facilities

The JBPU already possesses the generation facilities, the district heat facilities, and the energy distribution resources needed to make the microgrid viable, therefore access to infrastructure is not an issue. JBPU is the electrical interconnection point and the controlling party and can update its own protection schemes as needed to coordinate with the microgrid.

Regulatory

The 2015 study concluded that there were no regulatory or major technical concerns. JBPU already has the right of way access, customers, and would manage interconnections. A typical New York State Environmental Assessment Form is expected and not a major concern.

Labor

JBPU has a talented team of skilled union workforce and management that can ensure the project is successfully implemented. JBPU team has experience with significant capital projects and will ensure the project is managed well. The team also has experience with bidding engineering work to enable access to the niche design experts. JBPU's workforce compensation already exceeds prevailing wages, and the union/management relationship is positive and stable.

Centralized Services

The infrastructure needed for the distribution of both thermal and electrical systems originates and is controlled from the Carlson Generating Station (JBPU's central generation facility). Therefore, the capital cost of a microgrid distribution and communication system build-out will not be as significant compared to other systems as most of the infrastructure is already in place.

Existing Generation Assets

JBPU already possesses a natural gas-fired electric generator unit which can be utilized as the source of energy for a microgrid that could serve approximately 40 MW of customer load. No new interconnection process for that unit is required.

Supply Resiliency

The unit's natural gas fuel supply is provided from a natural gas engine-driven compressor station located in a rural area approximately 28 miles west of Jamestown. JBPU now owns and operates the compressor station and pipeline ensuring its reliability and long-term control. This facility's operation inherently creates a robust and resilient source of fuel for the 40 MW generator. JBPU has also made progress in decarbonizing its electricity and has been evaluating ways to further decarbonize generation, increase renewables and distributed energy resources, including budgeting for construction of a community solar project over the next few years that could enhance the microgrid.

Key Hardened Distribution Infrastructure

There are several underground resilient distribution feeders already in service within Jamestown's distribution system which provide electricity to numerous customers who provide vital services to the community and region that would be greatly needed in a regional electrical disruption. These underground circuits include the downtown area, regional hospital, city government, schools, police, fire emergency services, cell tower, two Internet Service Providers (ISPs), housing, hotels, and businesses in Jamestown's Justice40 community.

Thermal Infrastructure

JBPU provides District Heating service now (via existing natural gas-fired hot water boilers, waste heat exchangers, and underground distribution piping) to 70 buildings in the envisioned microgrid area. The JBPU is currently evaluating the potential to transition the gas-fired thermal supply to a geothermal supply to decarbonize the district heating system; however, a transition to geothermal would rely more on electricity to provide this thermal service, thereby increasing the importance of a microgrid, especially during winter months.

Community Utility Led

JBPU, as the project host entity and provider of other utility services for the community, including water and wastewater facilities, is well positioned to manage, coordinate, and solve constraints. The JBPU's involvement will significantly reduce microgrid implementation challenges as many areas of decision authority will be performed by the BPU in concert with the City of Jamestown. The BPU is integral to its community and is already highly respected.

Financial Capacity

JBPU has the financial capacity to provide the matching component for this proposal. Without DOE involvement, JBPU would use those funds to continue to progress reliability efforts, but it would not be able to pursue a microgrid or create the enhanced resiliency that a partnership with DOE would enable.

Public Entity

As the JBPU is a public utility, the information that is created and lessons learned can be shared with others without concern for intellectual property or competition. JBPU can also advocate for others to progress microgrids and share the results of the project with its peers through associations such as the American Public Power Association and the New York Association for Public Power. This may enable others to see the benefits, applicability in their situation, and prove the feasibility of such systems at a municipal or co-op level. Also, because the JBPU is a public utility, there are no external shareholders who have ulterior motives to progress a community microgrid or to collect extra revenue for their own profits. This is being led by the

community-owned utility whose customers are also the shareholders. The included deployment of resilient fast charging will directly encourage other public services to move toward electrification, by ensuring a long-term affordable charging solution that is resilient and available during a crisis, which are the most important concerns the public sector has that is delaying deployment of electric vehicles. Also, as a public entity, bidding processes for equipment and contracted labor (if additional help is necessary and always at or above prevailing wages) are standard practice for JBPU and ensure fair and competitive pricing and procurement for suppliers, contractors, and the community. These unique characteristics of JBPU make the installation process easier than cases where multiple stockholders and layers of regulatory approval are involved. All customers purchase power from JBPU, and all will benefit from the creation of an island-ready microgrid. The JBPU team is capable and prepared to quickly progress the project with DOE's support.

Innovation

Generally, microgrids have been progressed on a building or multiple building level. The JBPU, however, is proposing a microgrid that can power a significant portion of its community, thereby enabling widespread resiliency without end users having to come up with resources to provide resiliency on their own which is critically important as JBPU's disadvantaged community does not have those resources. This project will leverage modern battery technology and new grid-forming inverter technology. Grid forming inverters are critical to the success of the distributed energy model, but their deployment is not widespread. Grid-forming inverters may be the largest technical hurdle of the project; however, JBPU will leverage competitive solicitations for engineering, design, and equipment procurement to deliver a viable and cost-effective solution. JBPU's community-forward and community-centric approach enhances the microgrid's impact beyond just a few facilities.

Single Interconnection and Resiliency Risk

The JBPU system is the largest single point load on National Grid's (Niagara Mohawk) 115kV loop that serves most of Chautauqua and Cattaraugus Counties. The 23-square-mile service area has approximately 48,000 inhabitants and 19,800 customer locations. The JBPU is a preferred power customer of the New York Power Authority (NYPA). Hydropower generated at the Niagara Power Plant is transmitted to National Grid's (NGrid) Falconer Substation, from which two 115kV overhead lines connect directly to the JBPU's adjacent Dow Street Substation. There are plenty of examples of basic issues caused by maintenance, for example as recently as January 2023 a relay technician working on National Grid's system tripped off the entire JBPU system impacting every single customer. A microgrid could have compensated for this short duration event and kept industry and the community online while the error was corrected, and service restored.

Regional Value

The proposed microgrid will serve the center of the largest population in Chautauqua County. This population center includes the regional hospital, significant shelters, hotels, public services such as EMS, police and fire, grocery stores, and schools that serve the entire region. Ensuring this vital community has resources to weather a storm will help the region get through an emergency. In addition, the entire region relies on National Grid's 115kV loop and JBPU's entire system relies on a single substation interconnection (Dow/Falconer Substation). The next

nearest hospital is over 40 minutes away and fed from the same transmission network which could be impacted at the same time. If JBPU had a microgrid it could be the only system online in the entire county during an event that disrupts the regional 115kV loop, The microgrid would enable services and shelters to be powered for the entire region.

Extreme Weather and Resiliency

Not only do extreme weather events including heavy lake effect snow regularly occur, the regional 115kV electrical transmission system has a history of outages that have significantly impacted all JBPU customers including:

- August 14, 2003 - The NGrid 115 kV system was out for a time during a blackout in the Northeast. The JBPU used Carlson Station to self-generate most of the system load for the next approximately 2.5 days while other statewide restoration efforts were completed.
- October 29, 2007 – The JBPU system was tripped by low 115 kV system voltage
- June 2, 2010 - The JBPU system was tripped by low 115 kV system voltage

There are many smaller events that are not as closely tracked that cause disruptions to the JBPU system that would be avoidable were JBPU to implement a microgrid. Most, if not all of the above impacts caused outages due to reliance on a single point of interconnection to a 115kV rural transmission system; these could have been mitigated by a microgrid deployment. In addition, storm damage resulting from a changing climate continues to add new risk that may be mitigated by this project. Outages also cause significant financial impacts, when communities lose power. Losses are incurred through closures of restaurants, retail, entertainment, and manufacturing. For example, an outage occurring for a local manufacturer making refracted stone causes molten materials to freeze in their melting pots, resulting in days of work to jack hammer and remove the hardened materials, resulting in significant loss of productivity, waste, and loss of competitiveness. A failure during the community's largest event that the National Comedy Center was hosting resulted in economic loss, negativity, and disappointment for our community and a large number of tourists. All of the restaurants and shopping outlets had to close, events were cancelled, and guests were left to spend the evening in dark hotel rooms. The reliance on electricity today and expansion of reliance on electricity for the grid of the future is expected to drive significant correlation of electric reliability and economic prosperity. JBPU wants its community to become prosperous and emerge from sustained poverty and believes that a firm, reliable, clean, and reliable power system is a tool to help get there and that a microgrid is part of that solution.

JBPU has been working on investing in its reliability and resilience but does not have the resources to address the risk caused by the regional transmission system. As indicated in the Report on Resilience, the JBPU distribution team has been replacing relays (upgrading to modern electronic relays, a 10-year project that is near completion), replacing very old substations with modern equipment, standardizing voltages and equipment to enhance the ability to keep replacement inventory, replacing obsolete services, replacing old breakers, upgrading metering to advanced metering (AMI), and constantly performing tree trimming and replacing poles, wire, and cable. In addition, the JBPU staff has worked on optimizing the power plant's reliability to ensure that it is ready and capable of generating when called upon. The JBPU power plant team has performed generator overhauls on all of its generators and acquired the natural gas pipeline to ensure fuel delivery. JBPU will continue to chip away with investments in reliability and

resiliency but without DOE support, the microgrid is too costly for JBPU's local resources to manage on its own.

Lower costs

The microgrid may help reduce energy costs for the community by providing power using its battery system during peak events. It can also allow for more efficient use of renewable energy sources, which can lower costs even further.

Improved energy efficiency

The microgrid may help improve energy efficiency by allowing for the use of more efficient energy storage systems and the integration of distributed energy resources like solar panels and wind turbine, by charging and discharging some of its capacity to manage increased renewable energy.

Reduced greenhouse gas emissions

By using renewable energy sources like solar and wind, a microgrid can help reduce greenhouse gas emissions and improve air quality.

Workplan

This project will involve construction, alteration, maintenance, and/or repair of public infrastructure in the United States and is expected to comply with Buy America Requirements.

Milestones

Milestones align with tasks so associated tasks are provided in parenthesis. Example M1 is the SMART goal and output of Task 2.1 described in the SOPO.

M1 (T2.1) Selection of Engineering Contractor

A contractor has been selected and a contract with the engineering contractor is executed.

M2 (T3.1) Cable Replacement List and Materials Schedule

Detailed list identifying cable sections that are to be replaced. Maps, circuit identification, cable sizes, and conduit restrictions will be detailed, and an order of priority mapped. Total footage of each material sizes and quantities of associated parts will be detailed.

M3 (T3.2) Equipment Order for Cable Replacements

Purchase orders for underground cabling and associated hardware. Detailed material schedules from M3.1 will be utilized for quotes/bids which will be released, returned, and analyzed to facilitate this milestone.

Go/No-Go 1 (T2.5) – Permitting Approval

Permitting for siting battery storage and associated equipment will be complete.

M4 (T2.6) – Drawing Completion

The engineering drawings for the battery storage component will be completed including the three-line drawings, interconnection drawings, protection schemes, and overall site plan.

M5 (T2.9) – Equipment Schedule

A detailed equipment schedule will be complete for utilization in bidding stage.

M6 (T2.11) – Completed Bids

The documentation for bidding, including complete bid packages for equipment, software, and Construction, will be complete and ready for release.

Go/No-Go 2 (M2.13) – Award Bids

A thorough review of bid responses and updates to the financial analysis based on the actual bid results will enable a decision to award the bids for software, construction, and equipment. If financial analysis is positive, bids will be awarded, and the project will move forward.

M7 (T4.1) – Contract with engineering firm for EV station

An executed contract with an engineering firm to design the EV charging station

Go/No-Go 3 (M2.14) – Battery Storage Construction

The beginning of the construction stage has commenced, equipment and software is on order.

M9 (T3.7) – Completion of 50% of 15kV underground replacements

The completion of 50% of the underground cable replacements identified in earlier tasks.

M10 (T4.5) – Electrician Training

Certificates of course completion for electrician training on electric vehicle charging operation and maintenance.

Go/No-Go 4 (M2.14) – Foundations and general site construction complete

Foundations, conduit, and general site preparation is complete and ready for equipment delivery.

M11 (T4.6) – E.V. Construction

Site preparation for electric vehicle charging station has begun.

M12 (T3.7) – Completion of 100% of 15kV underground replacements

The remaining 50% of the underground cable replacements, as identified in earlier tasks, has been completed.

M13 (T4.8) – E.V. Chargers online

The electric vehicle chargers are online and operational for customer use.

M14 (T1.4) – Community Outreach

Video/animation production are complete and actively being distributed to community.

M15 (T2.15) – Training

Operators, maintenance personnel, engineers, and safety compliance training for operation and maintenance of the battery system and microgrid is complete.

M16 (T2.14) – Commissioning

The battery system and microgrid are tested and certified for operation.

Project Schedule

Task	1				2				3				4				5					
	Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
1.1 Project Management Plan (PMP)																						
1.2 National Environmental Policy Act (NEPA) Compliance																						
1.3 Continuation Briefing(s)	M1	M2	M3	GNG1	M4	M5	M6	GNG2	M7	GNG3	M9	M10	GNG4	M11	M12	M13	M14	M15	M16	Completion		
1.4 Community Outreach																						
2.1 Bid and Selection of Engineering Contractor	M1																					
2.2 Onsite meetings and initial conditions evaluation																						
2.3 Permitting and Code Evaluation																						
2.4 One lines, interconnection plan, and site plan																						
2.5 Permitting approval				GNG1																		
2.6 Three-line drawings, Protection Schemes and Diagrams					M4																	
2.7 Software Analysis																						
2.8 Equipment Specification						M5																
2.9 Short circuit study and ETAP modeling							M6															
2.10 Geotechnical Assessment																						
2.11 Final Equipment, Software, and Construction Bid																						
2.12 Financial and lifecycle analysis																						
2.13 Equipment, Software, and Construction Bid Analysis and Awards																						
2.14 Construction, Installation, Integration, and Commissioning																						
2.15 Training (operation, maintenance, safety)																						
3.1 Prioritize cables based on age and number of faults		M2																				
3.2 Order appropriate cable sizes, types, and connectors			M3																			
3.3 Switch to isolate sections for replacement																						
3.4 Remove old cable, pull in new cables, splice, and terminate																						
3.5 Install new duct banks and circuits (as applicable)																						
3.6 Hi-pot and test new cables																						
3.7 Restore circuits to normal operation																						
4.1 Secure site and engineering contractor										M7												
4.2 Develop site plan and permitting																						
4.3 Develop electrical one-line																						
4.4 Order equipment																						
4.5 Training for electricians on installation and servicing equipment												M10										
4.6 Construction																						
4.7 Install equipment and chargers																						
4.8 Commission equipment																						
4.9 Plantings, signage, site cleanup																						

End of Project Goals

- 1) The 3 MW/12MWH battery storage system will be online and operational. It will have the ability to discharge automatically or manually per operator preference during an event or per market operational needs.
- 2) The microgrid controls will be fully installed, tested, and prepared for emergency and economic response.
- 3) All underground cables installed pre-1990 in the microgrid area will be fully replaced with new cable.
- 4) The electric charging station will be online and available for vehicle use.
- 5) Distributed energy storage will be tested and operational and responsive to dispatch signals

Project Management

Brad Bentley will be the project lead. Brad has many years of experience in large utility project management, construction, and leading contracted engineering firms. He will ensure all components of the project are progressing according to the schedule/cost and will be primary interface with DOE. Cory Allen will be the project technical lead and will also manage all aspects of the battery storage portion of the project. Ellen Ditonto will manage all public relations, communications, and education components for the team. Mitch Simons will be a primary resource along with Cory during the design and construction phase of the systems. Mitch reports directly to Cory and Mitch supervises other electricians who can assist as needed. Amanda D’Aurora will be the lead on cable replacements. She has experience with GIS systems, the underground system, and can work with line workers as needed. Jarrett Devereaux will lead the electric vehicle charging station and the outside electricians report to him. Jarrett and Amanda report to Kristofor Sellstrom, who also oversees the line workers and can ensure they are available for the project. Brad, Cory, and Kristofor report directly to David Leathers, the General Manager, who is extremely supportive of the project and has significant technical project management experience and can advise and guide accordingly. The team has all worked together closely on various projects and are supportive of each other. The JBPU already utilizes detailed project tracking systems for financials, purchase orders, shipping and receiving, and “timecard” tracking and has information systems, policies, and financial controls in place to ensure smooth and detailed tracking and reporting. JBPU has unions in its workforce already and has solid and fair labor agreements in place. Communication among team members will be orchestrated by Brad Bentley who will set up meetings and communication channels as necessary. The project team is all geographically located in the same place so onsite coordination will not be an issue.

Technical Qualifications and Resources

The Jamestown Board of Public Utilities (JBPU) is the largest municipally owned and operated utility with electric generation capacity in New York state. Governed by a nine-member board, the JBPU provides electricity, water, wastewater, sanitation, and district heating services to the city of Jamestown, Villages of Falconer, Celoron, and Lakewood, and parts of the Towns of Busti, Ellicott, North Harmony & Kiantone, serving a combined population of just over 54,800.

As part of the Electric Division, the JBPU owns and operates the Samuel A. Carlson Electric Generating Station located on Steele Street. The City’s first power plant began generating electricity in 1891. In 1923, the Electric Division of the JBPU was officially granted a 23 square-mile franchise territory by the Public Service Commission (PSC) of the State of New York including the City of Jamestown, the Villages of Celoron and Falconer, and parts of the Town of Ellicott. The Electric Division currently serves 18,946 customers.

The Board of Directors of the JBPU employs a General Manager who oversees approximately 150 employees in all divisions including engineers, line workers, boiler operators, water department employees, laborers, sanitation workers, wastewater treatment operators, skilled trades, and

business and customer service representatives. As a municipal utility, the JBPU manages an annual operating budget of >\$60 million dollars.

Although no technical DOE/NNSA FFRDCs are required, DOE's experience in deploying microgrids including best practices, identification of risks and hurdles, and contacts for potential equipment vendors and service providers would be appreciated.

Capacity

Having been in operation since 1923, the JBPU has extensive experience in providing low-cost, reliable utilities, expanding services, managing funds, and growing its customer base. The JBPU provides utility services to just under 19,000 customers and employs around 150 employees. The JBPU Finance and Customer Accounts Manager Kevin Karr with the assistance of three support staff oversees a \$60 million operating budget. General Manager David L. Leathers has successfully administered numerous grant awards. The most recent awards include New York State Energy Research and Development Authority (NYSERDA) Accelerate the Southern Tier \$750,000; Empire State Development "Smart Cities Innovation Partnership Project" \$200,000; New York State Department of Health Lead Service Replacement \$567,000; Water Infrastructure Improvement Grants for water line replacement \$3,000,000, and Sanitary Sewer Slip lining \$375,000. All audits and budgets for our five utility divisions are posted online at www.jamestownbpu.com. As a provider of many utility services, JBPU can leverage its various divisions to assist in large projects by leveraging their expertise, equipment, and workforce while ensuring resources are compensated for their contributions.

Regional and National Participation

JBPU is highly active in the local, regional, and national community enabling information sharing. David Leathers is on the board of the American Public Power Association and Kristofor Sellstrom is the 2023 Chair of Customer Connections - Energy Innovation Planning Committee. David Leathers is also the president of the New York Association of Public Power and Kristofor participates on the New York Power Authority Technology and Innovation Task Force. The team is involved in board and advisory roles of various local organizations including Jamestown Renaissance Corporation, Chautauqua Partnership for Economic Growth, Chautauqua County Industrial Development Agency, Manufacturers Association of the Southern Tier, Jamestown Ice Arena, the Reg Lenna Center for the Arts, and the Chautauqua County Chamber of Commerce.

Qualifications of the Staff

The JBPU has experienced, skilled, trained, and committed staff. This is reflected with JBPU's 86% retention level, and in-house apprenticeship programs that mold and train current staff to grow within the company. JBPU has significant union employees who are excited about the project. JBPU has 15 Line workers, 6 Electricians, 4 Mechanics, and 11 Operators who are all highly skilled, capable, and well compensated.

Cory Allen

Cory is the JPBU's Associate Power Plant Supervisor. Mr. Allen is a decorated Navy Veteran with extensive training and experience in Energy Conversion, Linear Control Systems, Power Electronics, Circuit Design & Analysis, Signals and Systems, and Embedded Microcontrollers. A 2011 graduate of Pennsylvania State University with a Bachelor of Science in Electrical Engineering and a Minor in Computer Engineering, Mr. Allen has worked for the JBPU for over a decade, starting as a Junior Electrical Engineer. He has been the technical lead for multiple projects including, the LM6000 gas turbine controls replacement, conversion of two coal boilers to fire natural gas, and the replacement of the power plants 15kv and 480V switchgear and transformers.

Bradley Bentley

Brad is the newest member of this team having been hired in 2022 as the Energy and Gas Resources Manager in the Electric Division. Mr. Bentley brings significant experience and training to the project with a 30-year career in management, business, financial and technical areas for non-profit public sector entities in Chautauqua County and major utility companies throughout the United States. Mr. Bentley has 15 years of management experience leading and mentoring diverse groups, as well as experience testifying before various state public utility commissions and presenting budgets and projects to county legislative committees and public commissions. Mr. Bentley's work has resulted in the successful construction and operation of high voltage transmission lines and substations as well as numerous public works projects including roads, bridges, and sewer lines. Mr. Bentley graduated from the University of Connecticut with a Master of Business Administration, from The Ohio State University with a Master of Science, Electrical Engineering (MSEE), from Clarkson University with a Bachelor of Science, Electrical Engineering (BSEE) and has an Ohio Professional Engineering license since 1997.

Ellen Ditonto

Ellen serves as Community Engagement Lead for this project team. She has years of relevant management and business customer service experience with a regional telecommunications utility in New York state, as well as executive level management positions in local government and public higher education and affiliated student service businesses. She has served as business development coordinator for the Jamestown Board of Public Utilities for a year and has handled the execution of several initiatives that are part of a NYSERDA grant and works directly with business owners and executive management as well as government leaders at all levels. Her expertise includes the development and execution of a strategic plan for fiber-based connectivity to 23 government sites in a rural county when she served as Chief Information Officer (CIO) for the county government and the successful implementation of contracts for bookstore and food services at the local community college when she served as Executive Director of auxiliary services. She served as the technical lead and provided oversight for a federal Title III grant to automate library services at the community college. She holds a master's degree in business administration and a bachelor's degree in professional writing/English. She serves on a number

of boards of community organizations, reviews grants for a regional foundation, and has been the zoning board chairperson in the city of Jamestown for more than 15 years.

Mitchell Simons

Mitch is the Senior Power System Electrician for the JBPU power plant which is a NY State Civil Service working foreman position within the IBEW local 459. He spent 6 years in the US Navy reaching the rank of Electronic Technician 2nd class (surface warfare) ET2(SW). He proudly served aboard the USS Lawrence DDG-4 and the USS Briscoe DD-977 from 1987-1993. When he got out of the Navy he moved to Jamestown NY and began working for Sonic Star International, Blackstone Ultrasonics. There he built and tested ultrasonic cleaning machines from 1993-1994. Then in 1994, he was hired by MRC/SKF (UAW 338) working as an Inspector of bearings for the aerospace and specialty division within the union where he was awarded an electrician apprenticeship. While working toward his apprenticeship he went to night school and received a 2-year degree from Jamestown Community College (JCC) in Electrical Engineering Technology with honors. As an Electrician he worked on CNC machines, mills, spindle machines, heat treat systems, and building and grounds. In 2002 he took the Lineman Apprentice test for the JBPU and was offered the job. Within 2 weeks after he started, he was offered a provisional Electrician spot on the outside crew working in the BPU's substations. In 2004 he transferred to the power plant due to retiring personnel. As a Senior Power Systems Electrician, he has working knowledge of generating machines, boilers (coal and natural gas), pumps, motors, station battery systems, The power plants main computer system WDPD, PLC's, Substations, and their breakers (ABB, Siemens, and GE), GE LM 6000 gas turbine, Rosemount transmitters and various switches, thermocouples. Other duties are working with the supervisors and engineers to update schematics and wiring diagrams, ordering parts, keeping inventory, updating time slips, and directing a crew of Power System Electricians within the power plant. Mr. Simons also sits on the Jamestown City Electrical Board and is a member of the BPU Employee Awareness Team (EAT). In the community, he has been an Assistant Swim Coach for YMCA Jets Swim Team from 2005 to 2018 and an Assistant Coach for boys and girls swim teams for Jamestown High School from 2013-present.

Amanda D'Aurora

Amanda is a Junior Electrical Engineer and has been with the Jamestown Board of Public Utilities for seven years. She graduated from Penn State Behrend with a bachelor's degree in electrical engineering technology. She utilizes GIS to maintain an accurate model of the distribution system and run queries to help prepare maintenance jobs and assist in purchasing items for stock as well as uses EasyPower to run arcflash and coordination studies. She has also assisted with substation projects including design and construction of substation replacements. She is currently helping with the rollout of the advanced metering infrastructure and SCADA transition. Occasionally, she will step in when the distribution supervisor is unavailable to manage the line crews.

Jarrett Devereaux

Jarrett obtained an A.S. degree in Engineering Science from Jamestown Community College in 2011. He graduated with 85 credits and had a GPA of 3.9. He continued his education at the University of Buffalo where he graduated Summa Cum Laude with a B.S. degree in Electrical Engineering in 2013. After graduation, he was hired as an intern for the Jamestown Board of Public Utilities. Jarrett worked in the transmission/distribution department for a few months as well as in the generating power plant for a few months. He was offered a full-time position in 2014 and has been at the Jamestown BPU since. Jarrett spent his first few years working between the T&D department and the power plant and worked on a wide array of projects including work on steam turbines, steam boiler conversions, transformer design and installations, switchgear design and installations, building design, battery systems, electrical system modeling software, CAD, distribution systems design, relaying, SCADA, GIS, electrical systems' component testing and troubleshooting, metering, fiber optics, capacitors, PLC's, and so much more. Since 2015, he fully assimilated to the T&D department where he is responsible for JBPU's distribution substations and outside electricians. His focus is now maintaining substations (breakers/transformers/switchgear/ buildings) and much of this includes maintaining and updating our relaying systems (including modeling for coordination and arc-flash purposes).

Kristofor Sellstrom, PE

Kris received a Bachelor of Science in Electrical Engineering from the University of Vermont in May of 2011. He went on to the University of Pennsylvania where he graduated with a master's in business administration in 2016. Mr. Sellstrom has worked for the Jamestown Board of Public Utilities since 2011, moving up from Jr. Electrical Engineer to Electrical Engineer, to Energy and Gas Resources manager and ultimately to his current position of Transmission and Distribution Manager. Mr. Sellstrom has experience progressing large technical projects including substation replacements/upgrades as well as technical experience with distribution, relaying, controls, and SCADA. Mr. Sellstrom also has experience with the financials of the utility, grants (including responsibility for NYSERDA \$750k Accelerate the Southern Tier and \$200k ESD Smart Cities Innovation Partnership Project), and NYISO participation and related financial settlements. Mr. Sellstrom has been significantly involved in the community, including serving as a board member on multiple community organizations.

Qualification of Contractors

Qualified contractors, as needed, will be engaged through a competitive bid process that considers expertise and value. Therefore, sub-contractors have not been selected for this project at that time of application.

CORY P. ALLEN

(b) (6)

PROF. EXPERIENCE:

Jamestown Board of Public Utilities, Jamestown NY - May 2011 to Present

Associate Power Plant Supervisor – August 2017 to Present

- Overall responsibility for the operation and maintenance of the electric generating station. Plan, coordinate, assign, and supervise activities by scheduling operating and outage periods, setting priorities, and directing the work of subordinate employees. Maintain records and prepare reports. Make estimates of labor and materials for repair or new construction. Ensure compliance with all safety procedures and local, State and Federal Agency regulations.

Electrical Engineer IV – April 2014 – August 2017

- Responsible for engineering, planning and supervision of assigned projects within the power plant. Provide leadership and guidance to Power Plant subordinate operations and maintenance personnel. Assist Associate Power Plant Supervisor and Operations Supervisor in the overall day to day operation of the power plant. Supervise preventative maintenance of power plant equipment. Assist with Environmental compliance duties.

Junior Electrical Engineer – December 2011 – April 2014

- Responsible for instrumentation and control systems in the power plant, including programming and installation of PLCs. Implementation of utility wide Historian for collection of power plant operational data. Assist Associate Power Plant Supervisor and Operations Supervisor in the overall day to day operation of the power plant. Supervise preventative maintenance of power plant equipment. Assist with Environmental compliance duties.

Southland Publishing, August 2003 – June 2007

Operations Manager

- Worked directly with the CEO & CFO of the company daily
- Maintained clientele database to include files, directories and ongoing reports
- Reviewed and tracked all accounts assigned to sales department
- Coordinated ad designs and specifications with art department
- Compiled and analyzed financial information and prepared reports for senior management

U.S. Navy August 1995 – August 2003

Naval Security Group Activity, San Diego, Cryptologic Readiness Group October 1998 – August 2003

- Curriculum and Scenario Development Team instructor provided system-based instruction to E1-O4 students against real world threats using Navy C4I Lab.
- Revised and created Cryptologic Unified Build Curriculum, and Basic and Intermediate Cryptologic Afloat Training Curriculums.
- Installed and configured 3 UNIX servers and 25 GCCS-M clients for NSGA San Diego, creating the largest GCCS-M LAN in the Navy
- Experienced in GCCS-M/CUB software upgrades and segment installation
- Ordered, installed and configured the Advanced Electronic Classroom (AEC) consisting of 16 Windows NT workstations and one Windows NT server
- Information System Security Officer for 3 years
- Cryptologic Readiness Group Webmaster 2 years

DD990 USS Ingersoll July 1996 - 1998

- OUTBOARD System Operator
- JOTS, JMCIS and CCWS system operator

EDUCATION: Penn State Erie, The Behrend College
Bachelor of Science in Electrical Engineering
Minor in Computer Engineering

(b) (6)

ACADEMIC EXPERIENCE: Energy Conversion Linear Control Systems Power Electronics
Circuit Design & Analysis Signals & Systems Embedded Microcontrollers

TRAINING: Instructor Training Course 140 hours
Cryptologic Technician Collection Course 960 hours
Command and Control Tactical Analyst Course 320 hours
Direct Support Ships Signals Exploitation Equipment Operator 360 hours
OUTBOARD System Operator 400 hours

CLEARANCE: (b) (6)

AWARDS: (b) (6)

BRADLEY BENTLEY, P.E., MBA

(b) (6)

Summary

Thirty-year career in management, business, financial and technical areas for non-profit public sector entities in Chautauqua County and major utility companies throughout the United States. Fifteen years of management experience leading and mentoring diverse groups. Experience testifying before various state public utility commissions and presenting budgets and projects to county legislative committees and public commissions.

Professional Experience

Jamestown Board of Public Utilities (BPU), Jamestown, NY 2022 – Current **Energy and Gas Resources Manager, Electric Division**

- Responsible for daily management and procurement of energy and gas resources for the Jamestown BPU power plant and district heating division
- Daily operation and maintenance of the natural gas pipeline that feeds the power plant
- Project lead for capital projects for pipeline improvement projects
- Mitigation of risk through forward hedging contracts and firm delivery gas purchases
- Monthly calculation of the Fuel Adjustment Calculations

Chautauqua County, Falconer, NY 2018 - 2021 **Director of Public Facilities, Department of Public Facilities**

- Responsible for daily management, operation and safety of the Department of Public Facilities (DPF) for Chautauqua County with approximately 250 employees.
- The DPF includes Public Transportation, Jamestown Airport, Dunkirk Airport, County Highway Shops (Falconer, Sheridan, and Sherman), Buildings & Grounds (including cleaning staff), Division of Solid Waste, County Parks & Recreation, Engineering, and Administration.
- Developed and presented annual \$30 million budget to the County Executive and Legislative Committees for approval.
- Ensured division compliance with state and federal requirements for expenditure reimbursements for Public Transportation, Airports, and major road and bridge projects.
- Reviewed and managed DPF state and federal grants to ensure compliance with grant applications, updates and final compliance reports.
- Developed long range organizational structure goals, 5-year plan for capital equipment requests, optimization of personnel to maximize workflow and output.

Jamestown Urban Renewal Agency (JURA), Jamestown, NY 2017 - 2018

Financial Coordinator, Department of Development

- Responsible for daily payroll, accounts payable, accounts receivable of JURA and associated entities coordinating with HUD and Community Development Block Grants.
- Coordinated budget and ensured compliance with financial requirements for JURA's \$1.2 million budget.

Eversource Energy, Hartford, CT

2008 - 2016

Director Transmission System Planning, Transmission Department

- Responsible for directing the business, financial, and technical functions of the Transmission System Planning Group covering three states.
- Managed O&M and capital budgets for Transmission System Planning Group.
- Directed development and regional approval of major transmission plans and projects throughout the Eversource system totaling \$5 billion.
- Business development transmission planning lead responsible for creating, developing, and performing technical studies for major transmission projects for renewable energy.

San Diego Gas & Electric (SDG&E), San Diego, CA

2005 – 2008

Transmission Planning Manager, Transmission Planning Department

- Responsible for developing and managing Transmission Grid Assessment Team.
- Directed completion of SDG&E's Annual Grid Assessment including transmission and substation projects totaling approximately \$500 million over the next five years.
- Managed approval process for complex planning projects from internal technical, financial and executive approvals to external approval.
- Prepared testimony for SDG&E's \$1.3 billion 500 kV transmission project..

Team Lead, Transmission Planning Department

- Led technical studies coordinating transmission projects with neighboring utilities in the WECC.

GridAmerica LLC, Cleveland, OH

2003 – 2005

Transmission Planning Engineer, Investment Planning Department

Identified investment improvements for First Energy, Northern Indiana Public Service, and Ameren

- Completed transmission reliability and power transfer studies.
- Developed transmission investment and congestion analysis.

American Electric Power (AEP), Columbus, OH

1991 - 2002

Natural Gas Trader, AEP Energy Services

Energy Market Analyst, AEP Energy Services

Transmission Planning Engineer, System Planning Department

Instrumentation and Controls (I&C) Engineer, Nuclear Engineering Department

Electronic Support Intern Engineer, Systems Operations Division

Education & Licenses

University of Connecticut, Storrs, CT

Master of Business Administration (MBA)

The Ohio State University, Columbus, OH

Master of Science, Electrical Engineering (MSEE)

Clarkson University, Potsdam, NY

Bachelor of Science, Electrical Engineering (BSEE)

Professional Engineer, Ohio Professional Engineering license since 1997

Amanda D'Aurora

(b) (6)

[Redacted]

Education

Bachelor of Science in Electrical Engineering Technology

(b) (6)

(b) (6)

Penn State Erie - The Behrend College, Erie, PA

GPA: 3.26 out of 4.0

(b) (6)

[Redacted]

Work Experience

Electrical Engineering Tech/Jr. Electrical Engineer

2015-Present

Jamestown BPU, Jamestown, NY

- Edit GIS to maintain an accurate model of the distribution system
- Use CAD to update prints, layout relay upgrades, and design control circuits
- Assist in the roll out of the advanced metering infrastructure
- Assist in the transition from iFix to ETAP (electrical system SCADA and modeling)
- Prepare GIS for ETAP imports including running analysis and field calculations
- Manage line crews when department supervisor is unavailable
- Assist with substation design and construction projects

Cook/Cooks Assistant

2008-2015

Mount Saint Benedict's Monastery, Erie, PA

Aide

2010-2011

JEVS, Erie, PA

Skills

Experience with:

- Building and analyzing models of parts using Pro E
- Making detailed circuit drawings with DraftSight
- Creating detailed reports using Microsoft Office:
Word, Excel, Power Point
- Build Vis using LabView according to design specifications-Programming using C++
- PSPICE to simulate and analyze circuits
- Programming PLCs using LadderLogix 500 and 5000
- Able to edit and query information in a GIS system in Arcmap
- Able to edit and run reports in EasyPower

MITCHELL J SIMONS

(b) (6)

Professional Summary

Quality-driven Electrician with expertise in troubleshooting, calibrating, and maintaining electrical equipment in a generation and power distribution system. Proven proficiencies in maintaining the power plant in a desired state of readiness. Reputation for accuracy, safety, leadership, and overall efficiency.

Core Qualifications

- Calibration of various types of transmitters, switches, and thermo. devices (4-20ma and 0-10v)
- Troubleshooting, diagnosis, and repair of electrical and mechanical devices
- Knowledge of different voltage systems from 35kv to 24vac and 120vdc to 24vdc
- Power distribution and generation (Coal, steam, and gas systems), (Magnetic, open air and vacuum breakers)
- Ordering replacement parts and maintaining logs and journals using Microsoft Excel and Word.
- Schematic and blueprint interpretation and alterations (with engineering approval)
- Installation of new electrical equipment
- Understanding of PLC/SLC ladder logic I/O
- troubleshooting of CNC machines, Relay Logic, Mills, Heat treat equipment, and spindle machines.
- Use of air bore gauges, micrometers, calipers and CMM inspection devices.
- Have training on the NFPA 70E, NEC, (OSHA) safety standards and SDS.

Experience

Senior Power Systems Electrician 2011 – Present BPU Power Plant, Jamestown NY, 14701
Power System Electrician 2002 - 2011

- *Working Foreman* position within the IBEW Union Local 459 and within the NY State Civil Service classification.
- Foreman of an Electrician's crew in a power plant setting under the Plant Supervisor
- Ensure the power generation and distribution is reliable to our customers.

Maintenance Electrician 1999 - 2002 MRC/SKF Jamestown NY, 14701
Apprentice Maintenance Electrician 1995 - 1999
Inspector 1994 - 1995

- Member of the UAW Union Local 338
- Kept high standards and tolerances for the aerospace and specialty bearing division of SKF in the manufacturing process for roller and ball bearings.

Laborer 1993 - 1994 Sonic Star International / Blackstone Ultrasonics, Jamestown NY 14701

- Assembled and inspected ultrasonic cleaners.

US Navy 1987 – 1993

- Boot camp San Diego CA.
- Assigned to the USS Lawrence DDG 4 and USS Briscoe DD 977
- Final rate and rank - ET2(SW) Electronics Technician 2nd class (surface warfare)
- Work Center Supervisor
- Troubleshoot and maintained HF communication equipment, different crypto equipment, and navigational radar.
- Stood watches as rover and fire watch.
- Member of the ships self-defense force.
- Awards---Battle E ribbon, good conduct medal, national defense medal, armed forces expeditionary medal, southwestern Asia metal x 2, sea service ribbon x 2, pistol expert ribbon, surface warfare pin.
Navy commendation --for work center supervisor duties
Schools-Electronics Class A school - Great Lakes IL., Basic electronics and electricity - San Diego CA,
Various crypto schools- Mare Island CA., DD-963 HF Communication System maint. Course - San Diego CA, Ships self-defense course - Little Creek VA.

EDUCATION

- Harry Hill vocational center, Lansing MI (b) (6)
electronics – 1 year internship at GM fisher body plant during 2nd year
- JCC (Jamestown community College), Jamestown NY (b) (6)
(AAS) associate in electrical engineering technology—graduated with honors.
- Apprenticeships-Electrician
1995-1999 SKF/UAW maintenance electrician
2005-2008 Jamestown BPU / IBEW electrical / mechanical technician
**both certified by the state of NY
- NFPA 70E--CPR/First Aid/AED—industrial trucks—asbestos

REFERENCES

Available upon request.

Jarrett Devereaux

(b) (6)

EDUCATION

University at Buffalo, The State University of New York

Bachelor of Science in Electrical Engineering, (b) (6)
GPA: 3.56/4.0 Clubs: Tau Beta Pi, IEEE

Jamestown Community College, The State University of New York

Associates of Science in Engineering Science, (b) (6)
GPA 3.90/4.0 Group: National Science Foundation award recipient group member

PROFESSIONAL EXPERIENCE

Jamestown Board of Public Utilities – Power Plant/T&D Power Systems EE June 2013- Present

-Substation Engineer Transmission and Distribution Responsibilities: June 2013- Present

- Responsible for installations/design/maintenance/testing of indoor/outdoor equipment such as transformers, tap-changers, breakers, switches, switchers, buildings and grounds, relays, PLC's, capacitor banks, switchgear, cabling/conduit, control systems, PPE, remote racking systems, communication systems, batteries, and heating/cooling systems. Systems vary in voltage from low voltage control systems <100V up to transmission and distribution voltages up to 115kV.
- Involved with designing and documenting routine maintenance and testing plans for all stations' equipment. This includes supervision of a small team of substation electricians. Typical maintenance may include (but not limited to) breaker cleaning/timing tests/hipot/etc, transformer and tap-changer oil tests/hipot/winding resistance, instrumentation (CT's and PT's) excitation tests, and many other tests on cabling, battery systems, and switchgear bus work.
- Performed design work using EasyPower and Esri GIS software for electrical systems which includes routine system coordination, load flow studies, and arc-flash hazard analyses.
- SCADA/Historian system administrator. Created SCADA systems using GE iFix software. This includes designing HMI's, creating the system database, and setting up and testing all devices (relays, PLC's, RTU devices, etc) with DNP and MBE protocols.
- Involved with and lead the design/testing process of three new substations. This includes working on site location, site layout, structural design requirements, foundations, elevations, conduit pathing/layout, cable sizing/routing, switchgear design and testing, indoor and outdoor breaker specifications and all testing involved, instrumentation design/testing, manhole design, material lists, ground grid design and testing, transformer design and testing, communications equipment, drawing design and approvals (from electrical to mechanical), new transmission design, station batteries, AC/DC wiring and paneling, SCADA integration, energization and testing checklists and respective testing analyses, as well as creating and assembling and bid packages.
- Responsible for station CAD drawings and updates.
- In charge of the transmission systems' fiber optics. This includes maintenance and new installations. Part of my responsibility is managing and installing/testing dark fiber leases to outside entities.
- Actively "on call" for outage management and troubleshooting purposes for the entire electric system. I have gained experience pinpointing issues due to underground/overhead cable faults, relaying issues (including wiring issues), hardware failures (fuses/cutouts, arrestors, switches, loose connections, etc), transformer faults, storm damage, and even customer faults.
- Act as a technical lead for customer service field representatives where typical <480V services and revenue metering applications are concerned. This includes application design and customer/meter troubleshooting.

-Power Plant Engineer Responsibilities: November 2013- June 2015 (varied)

- Responsible for internal electrical system modernization. Involved with switchgear and MCC design and bidding/installation/testing processes similar to my above-mentioned substation projects. This includes PCB transformer removal/replacement, lighting updates, battery system updates, conduit routing and planning, SCADA upgrades, cabling and conductor updates, etc.
- Part of a team responsible for two coal to natural gas boiler system conversions. I worked with manufacturers to design and update/test two boiler unit's burner systems, control systems (wiring, PLC's, HMI), fan systems, exhaust/monitoring systems, and even a backup oil system for one of the units.
- Involved with generation maintenance and troubleshooting. The plant I've work in has a GE LM6000 natural gas turbine/generator, a HRSG system, district heating systems, two GE steam generators, and the two converted standalone boiler systems all with a combined peak capacity of around 85MW at 13.8kV. Most maintenance involved troubleshooting and finding low voltage controllers/equipment/relays/gauges/meters

using a variety of handheld meters/gauges by following certain analog and digital inputs/outputs as described by drawings and system logic schemes.

TRAINING/CERTIFICATIONS/SKILLS

- Infrared Thermography – Level 1 Certification
- Safety Related: LOTO, confined space rescue, substation PPE & guidelines (per NFPA 70E, NESC, OSHA), first aid/CPR
- Software/Technical: MS Office suite, GE iFix, GE Historian, VMWare, EasyPower (load flow, coordination, arc-flash), ESRI GIS, CAD software, Assembly language, Visual Basic, familiar with Python, PLC programming and ladder logic, SEL relays and program suite (acSELEerator, Synchronwave, RTAC, Compass, 5020, etc), ABB programs, Beckwith controllers/software, fiber optics, system networking, budgeting, Itron tools, Fluke, and Flir.

KRISTOFOR G. SELLSTROM, P.E.

(b) (6)

EDUCATION

Master of Business Administration (MBA), Pennsylvania State University - The Behrend College

(b) (6)

Bachelor of Science, Electrical Engineering, University of Vermont, Burlington, VT

(b) (6)

WORK EXPERIENCE

- Transmission and Distribution Manager**, Jamestown Board of Public Utilities 2023-present
- Motivate, lead, and support team of 5 supervisors, 2 electricians, 15 lineworkers
 - Responsible for line department operations, planning, strategic direction, risk management, regulatory compliance, financial management, policy development, interdepartmental and inter-governmental relations
- Energy & Gas Resources Manager, Sr. Electrical Engineer**, Jamestown Board of Public Utilities 2018-2023
- Responsible for electric and gas supply, power settlements, risk management, strategic planning, budgeting, engineering project management, contracts, board reporting, modeling, forecasting, electric and gas financial hedging, fuel and power cost recovery, representation with state organizations.
 - Supervise business development coordinator and natural gas pipeline
- Electrical Engineer**, Jamestown Board of Public Utilities 2014-2018
- Lead technical role for distribution substation upgrades and replacements
 - Manage engineers and electricians for capital projects
 - SCADA development and implementation (Proficy iFix, Fix32, Historian)
 - Relay upgrades and communications (SEL, ABB)
- Jr. Electrical Engineer**, Jamestown Board of Public Utilities 2011-2014
- Design work for high voltage AC power systems and controls
 - GIS mapping (ArcGIS), Arc Flash and load flow analysis (Easy Power)
- Engineering Intern**, ECHO, Burlington, VT 2011
- Create encounters and demonstrations for the Smart Grid intuitive
 - Educate patrons on Smart Grid research and latest developments
- Subject Area Tutor**, University of Vermont Learning Co-op 2011
- Engineering Intern**, Matric Group, Oil City, PA 2008, 2010

PROFESSIONAL CERTIFICATIONS

Professional Engineer in the State of New York and the State of Vermont

Outdoor Emergency Care Technician, National Ski Patroller, Advanced CPR/First Aid

LEADERSHIP EXPERIENCE

Board Member, Chautauqua County Chamber of Commerce

Chair, Customer Connections Energy Innovation Planning Committee, American Public Power Association

Co-Chair, Jamestown Renaissance Corporation

Co-Chair, Jamestown Young Professionals

President, Beta Upsilon Chapter of the International Fraternity of Phi Gamma Delta

HONORS

Jamestown Chamber of Commerce Young Community Leader of the Year

2016

Beta Gamma Sigma International Honor Society

2016

Eagle Scout of the Boy Scouts of America

DAVID L. LEATHERS

(b) (6)

EDUCATION

Master of Science, Manufacturing Management, June 1995
General Motors Institute, Flynt, MI

Bachelor of Science, Electrical Engineering, May 1985
State University of New York at Buffalo, Buffalo, NY

EXPERIENCE

Jamestown Board of Public Utilities, Jamestown, NY

GENERAL MANAGER, 3/08 – present

Complete P&L responsibility for >\$65M, 150 employee, municipal utility organization. Coordination of management team activities for five divisions: Electric, Water, Wastewater, Solid Waste, and District Heating. Responsibilities include Power Plant, Transmission & Distribution, Customer Service, Communications, Purchasing, Finance, I/T, and Human Resources (3 separate labor unions). Led successful transition of power plant generation from coal/natural gas to strictly natural gas through LM6000 turbine and conversion of two boilers to fire on natural gas; approximately 85 MW of generating capacity. Led negotiations and PSC approval process to purchase 28-mile natural gas pipeline assets (\$5.4M) as main fuel source for power plant.

Achievements include outstanding financial results for all five divisions for the eleven-year period 2008-2018; net income results positive and to budget, significant capital projects executed, rate control achieved, and overall consistent positive cash growth. Priorities of Safety, Customer Service, Economic/Business Development, Productivity, Organizational Development, Cost Control, and Communications progressed through strategic plans. G.M. position reports to 9-member Board of Directors.

INTERIM GENERAL MANAGER/DEPUTY GENERAL MANAGER, 12/05 – 3/08

Hired into the BPU as Deputy General Manager, Economic Development, Marketing, and Projects Management; led environmental permitting, engineering design, construction management planning for \$145M Clean Coal CFB Power Plant Project, which transitioned into a \$600M Federal Clean Coal Project. In May 2007, named Interim General Manager following the departure of General Manager. Performed all duties to lead entire 5-Division, >\$65M utility operation.

Valeo, Inc. – US Truck Division, Jamestown, NY

GENERAL MANAGER, 9/02 – 11/05

Complete P&L responsibility for all US Truck Division activities for \$110M, 450 employee, Heavy Duty truck engine cooling business. Reported to V.P., headquartered in Paris, France. Coordination of management team activities for Manufacturing, Finance, I/T, Human Resources, Quality, Sales, Engineering, Advanced Development and Purchasing functions for the Division. Helped to lead improved communication through development of the Division Communication Plan, focused business objectives with cross-functional involvement, effective labor/management interactions, and consistent financial results above budgeted targets (with improved year-over-year operating income results despite profitable product transfers to other sites).

PLANT MANAGER/SITE DIRECTOR, 9/01 – 9/02

Added responsibility included all US Truck Division activities. Operated as the General Manager's deputy while he spent extended time in Sweden and France. Helped to develop and achieve annual Division Objectives, Division Business Plan, and Division Budget.

PLANT MANAGER, 11/97 – 9/01

PRODUCTION MANAGER, 3/97 – 11/97

Managed 9 production supervisors and 220 IAM and UAW employees in Copper/Brass, Vacuum aluminum and C.A.B. aluminum departments.

Cummins Engine Company, Lakewood, NY

TEAM MANAGER – 11/95 – 3/97

FUNCTIONAL LEAD – GIEA (ERP) PILOT IMPLEMENTATION, 6/96 – 3/97

Team Manager in Shop Operations responsible for Team-Based Work System (TBWS) implementation on the Block, Miscellaneous Machining, and Assembly Line teams.

Shop Operations interface and functional lead for the GIEA/Oracle pilot ERP implementation at the Jamestown Engine Plant.

TEAM MANAGER, CRANKSHAFT LINE, 9/93 – 11/95

Responsible for 75 direct, 10 maintenance, and 5 salaried employees.

PROJECT MANAGER, CAMSHAFT CONSOLIDATION, 8/92 – 9/93

Responsible for successful, major multi-site manufacturing consolidation effort (\$12M) at the Jamestown Engine Plant.

SUPPLIER QUALITY ASSURANCE ENGINEER, 10/89 – 8/92

Naval Underwater Systems Center (NUSC), Newport, RI

PRODUCT ASSURANCE ENGINEER, 7/85 – 10/89

AFFILIATIONS

American Public Power Association (APPA) Board Member
APPA CEO Climate Change & New Generation Task Force Member
New York Association of Public Power (NYAPP) Board Director, Third Vice President, Secretary
NYAPP and New York Power Authority (NYPA) Implementation Task Force Member
Chautauqua (County) Leadership Network
Jamestown Center City Development Corporation (NW Arena) Board of Directors Co-President
Jamestown Strategic Planning and Partnership Commission Member

Received Chautauqua County “Person of the Year” Award in 2009
Named Jamestown Community College “Alumnus of the Year” in 2017
Honored by NYAPP as one of two primary leaders in long-term contract extension for NYPA hydropower on behalf of municipal and cooperative electric customers of New York State in 2020
Recipient of APPA Mark Crisson Leadership and Managerial Excellence Award in 2020

TRAINING

Principle-Centered Leadership (Covey)	CEDEP (Valeo) Management School
7-Habits of Highly Effective People (Covey)	Interpersonal Management Skills
Technical Leadership Series	Hoshin Workshops
Valeo 5 Core Strategies	Lean Manufacturing
Dynamic Leadership Training	Labor Negotiations
APPA Community Economic Development	APPA Public Power Business Development

Ellen M. Ditonto Business Development Coordinator

*Board of Public Utilities
Jamestown, New York*

(b) (6)

Pertinent Skills & Abilities:

- * Strategic Planning
- * Problem Solving
- * Human Resources
- * Excellent Oral & Written Communications Skills
- * Grants Administration
- * Supervisory/Management Skills
- * Budgeting
- * Contract Negotiations
- * Project Management

Professional Experience:

Business Development Coordinator
Board of Public Utilities
Jamestown, New York 14701
April 2022 – present

Spearhead new business development opportunities within the municipal utility territory; work with city, county and regional economic development partners to maximize resources available to developers within the BPU footprint; assist with procurement and administration of grants.

Serve on County Economic Development Business Development & Talent Attraction & Retention Committees

Executive Director
Faculty Student Association of Jamestown Community College, Inc.
January, 2015 – April, 2022
Jamestown Community College
525 Falconer Street
Jamestown, New York 14701

Not-for-profit 501 c3 LLC with over \$5 million annual budget/assets with overall responsibility for contracted housing, bookstore operations, food services, vending, public recreation, and all student activities.

Director, Sales & Business Development – October, 2011 – Dec. 2014
Director, Business Sales & Marketing – Jan., 2008 – Oct., 2011
Assistant Operations Manager, August, 2006 – January, 2008

DFT Communications, Inc.
40 Temple Street
Fredonia, New York 14063

**Ellen M. Ditonto
Resume, Page 2**

Responsible for regional business-to-business sales of fiber and broadband services, including new opportunities in southern Chautauqua County, with contracted partnership with the Jamestown Board of Public Utilities for fiber leasing. Built sales volume to over \$1 million per year exceeding targeted revenue.

Chief Information Officer/Deputy County Executive

July, 2002 – July, 2006

Director, Information Services, July, 1999 – July, 2002

Chautauqua County (NY) Government
3 North Erie Street
Mayville, New York 14757-1007

Director, Instructional Computing

Associate Professor

August, 1994 - July, 1999

Jamestown Community College
525 Falconer Street
Jamestown, New York 14701

Education:

Master of Business Administration (MBA)

Management/Marketing Concentration
St. Bonaventure University

Bachelor of Arts (BA), English

State University of New York
College at Fredonia

Community

Reg Lenna Center for the Arts (RLCA)

Board Member, 2018-present

Vice President (2022-present)

Treasurer (2018-2022)

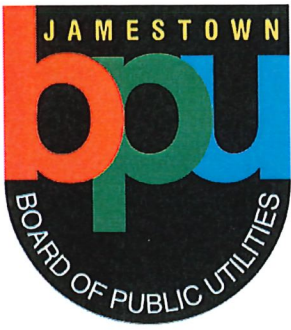
Zoning Board of Appeals, City of Jamestown (NY)

Chairperson, 2005-present

Chautauqua Region Community Foundation

General Grants Committee Member

2000-present



P.O. Box 700
Jamestown, NY 14702-0700
Phone (716) 661-1670
Fax (716) 661-1675

ELECTRIC
DISTRICT HEAT
WATER
WASTEWATER
SOLID WASTE

April 3, 2023

Department of Energy
Grid Deployment Office

RE: FOA #: DE-FOA-0002740

The Jamestown Board of Public Utilities is the expected prime recipient of this proposed grant request and as the General Manager and Authorized Organizational Representative, I understand the Jamestown Board of Public Utilities is solely responsible for the cost share obligation that is detailed in the budget document.

For each year of the five-year proposed grant award, the Jamestown Board of Public Utilities will use funds from its capital budget for the cost share obligation. The Jamestown Board of Public Utilities capital budget does not include any federal funds that would be put toward this proposed project.

I am providing written assurance that the Jamestown Board of Public Utilities will provide the \$5,792,648 total that is the proposed cost share for this grant proposal.

Thank you.

A handwritten signature in blue ink, appearing to read "David Leathers", is written over a blue circular stamp.

David Leathers
General Manager
Authorized Organizational Representative

March 14, 2023

David Leathers, General Manager
Jamestown Board of Public Utilities
92 Steele Street
Jamestown, New York 14701

RE: Community Microgrid Grant Support

Dear Mr. Leathers:


The City of Jamestown, New York, is fully supportive of the Jamestown Board of Public Utilities' application to the United States Department of Energy (DOE) for grant funding in support of strengthening the reliability and resilience of our electrical system by building a community microgrid, which will specifically service the downtown and medical corridors in cases of electrical outages outside of the utility's control.

The microgrid project would provide the highest level of reliability and resiliency for our first responders – Jamestown Police, Jamestown Firefighters, and EMS staff who are based at City Hall in the downtown corridor. The microgrid would lead to an increase in the overall safety of our community and our first responders.

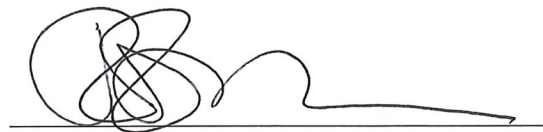
The effort to seek out funding for this innovative project speaks to the shared responsibility we have in making the city of Jamestown a safer and more secure community for all.

Very truly yours,
CITY OF JAMESTOWN


Edward Sundquist
Mayor


Timothy Jackson
Chief of Police


Matthew Coon
Deputy Fire Chief


Jeffrey Lehman
Director, Department of Public Works





March 9, 2023

Memorandum of Understanding to Maximize Community Benefits of Bipartisan Infrastructure Law's Smart Grid Investments through a Jamestown Board of Public Utilities (JBPU) Community Microgrid Project

WHEREAS the signatories are committed to maximizing the benefits of deploying high-impact smart grid infrastructure investments through the Jamestown Board of Public Utilities (JBPU) grant proposal to build a community microgrid to support the city of Jamestown, NY, during any unplanned power interruptions outside of the utility's control as well as to expand the JBPU's reliability and reliance in coming years;

WHEREAS the JBPU and the International Brotherhood of Electrical Workers Local 106 have an excellent working relationship and an agreement, and the Union provides critical positions in the JBPU's wastewater treatment plant, and both organizations are committed to working together on this federally funded infrastructure grant project for the betterment of our community;

WHEREAS the signatories are deeply invested in our underserved and disadvantaged community and believe affordable access to reliable and resilient electricity is critical to our future,

Now therefore, signatories enter this Memorandum of Understanding for their mutual benefit and agree to act as follows:

1. Support meaningful community and labor engagement to conduct the federally funded smart grid investment projects.
2. Ensure project benefits flow to the community.
3. Support strategies that develop a skilled and inclusive local workforce to build and maintain the country's energy infrastructure.

SIGNATURE: 

SIGNATURE: 

NAME: (PRINT) Kent Joersel

NAME: (PRINT) DAVID L. LEATHERS

TITLE: Business Manager

TITLE: GENERAL MANAGER

ORGANIZATION: IBEW 106

ORGANIZATION: JAMESTOWN BPU



March 9, 2023

Memorandum of Understanding to Maximize Community Benefits of Bipartisan Infrastructure Law's Smart Grid Investments through a Jamestown Board of Public Utilities (JBPU) Community Microgrid Project

WHEREAS the signatories are committed to maximizing the benefits of deploying high-impact smart grid infrastructure investments through the Jamestown Board of Public Utilities (JBPU) grant proposal to build a community microgrid to support the city of Jamestown, NY, during any unplanned power interruptions outside of the utility's control as well as to expand the JBPU's reliability and reliance in coming years;

WHEREAS the JBPU and the International Brotherhood of Electrical Workers Local 459 have an excellent working relationship and an agreement, and the Union provides critical positions in the JBPU's power-generating plant, and both organizations are committed to working together on this federally funded infrastructure grant project;

WHEREAS the signatories are deeply invested in our underserved and disadvantaged community and believe affordable access to reliable and resilient electricity is critical to our future,

Now therefore, signatories enter this Memorandum of Understanding for their mutual benefit and agree to act as follows:

1. Support meaningful community and labor engagement to conduct the federally funded smart grid investment projects.
2. Ensure project benefits flow to the community.
3. Support strategies that develop a skilled and inclusive local workforce to build and maintain the country's energy infrastructure.

SIGNATURE: _____

SIGNATURE: _____

NAME: (PRINT) _____

Barry Hixson

NAME: (PRINT) _____

DAVID L. LEATHERS

TITLE: _____

Business Manager / E.S.

TITLE: _____

GENERAL MANAGER

ORGANIZATION: _____

IBEW Local 459

ORGANIZATION: _____

JAMESTOWN BPU



UPMC Chautauqua
207 Foote Avenue
PO Box 840
Jamestown, NY 14702-0840
716-487-0141

UPMCChautauqua.org

March 28, 2023

Jamestown Board of Public Utilities
ATTN: David Leathers, General Manager
92 Steele Street
Jamestown, New York 14701

RE: UPMC Chautauqua Commitment Letter on Behalf of JBPU Federal Grant Request

Dear Mr. Leathers:

UPMC Chautauqua, a critical customer of the Jamestown Board of Public Utilities (JBPU), is pleased to show our commitment to the application to the United States Department of Energy for grant funding in support of strengthening the reliability and resilience of our electrical system by building a community microgrid.

This microgrid would directly support the area's only regional hospital and its ancillary buildings that house physicians' offices and diagnostic testing facilities. All of these buildings rely on consistent electrical services in order to provide optimal care for our patients and clients. During unplanned outages outside of the control of the JBPU, it will be reassuring to know that the microgrid could provide the electrical service that is needed to maintain our operations. In addition, the microgrid will assure that area emergency responders will have reliable electric service and be able to continue to provide critical healthcare transports.

Since our rehabilitation facility is connected to the JBPU's district heating thermal network, we are pleased to know that the application includes the placement of a small microgrid at that site to ensure that the fans supporting our heating system will continue to operate if a transmission interruption occurs during the heating months.

The JBPU's commitment to assessing electrical needs now and into the future through innovative projects like this community microgrid project is encouraging and helpful as we all work to address the many needs and priorities of our disadvantaged community.

UPMC Chautauqua values the partnership with our small municipal utility and looks forward to working with the JBPU to implement the microgrid project if the grant is funded.

Sincerely,

A handwritten signature in black ink, appearing to read "Cecil Miller III", written over a light blue horizontal line.

Cecil Miller III
VP of Operations

March 28, 2023

Jamestown Board of Public Utilities
ATTN: David Leathers, General Manager
92 Steele Street
Jamestown, New York 14701

RE: Community Microgrid Grant Support

Dear Mr. Leathers:

The Jamestown Public School System is fully supportive of the Jamestown BPU's application to the United States Department of Energy (DOE) for grant funding in support of strengthening the reliability and resilience of our electrical system by building a community microgrid.

This microgrid would directly support our district buildings, students, faculty and staff. Three of our buildings, the high school, tech academy, and one elementary school are connected through the BPU's underground circuits. During unplanned outages outside of the control of the BPU, it will be reassuring to know that the microgrid could provide the electrical service that is needed to maintain our operations and provide a safe place for our student body in these three locations. In addition, the microgrid will assure that area emergency responders will have reliable electric service and be able to continue to provide critical services and communications with our district staff.

The BPU's commitment to assessing electrical needs now and into the future through innovative projects like this community microgrid project is encouraging and helpful as we all work to address the many needs and priorities of our disadvantaged community.

Thank you,



Kevin Whitaker, Ed. D.
Superintendent of Schools



March 9th, 2023

Jamestown Board of Public Utilities
ATTN: David Leathers, General Manager
92 Steele Street
Jamestown, New York 14701

RE: Community Microgrid Grant Support

Dear Mr. Leathers:

Silvertree Seniors of Jamestown is fully supportive of the Jamestown BPU's application to the United States Department of Energy (DOE) for grant funding in support of strengthening the reliability and resilience of our electrical system by building a community microgrid.

This microgrid would directly support our housing units, which include 151 elderly residents across four buildings. All of our residents are low-income and many have specialized healthcare equipment, which requires consistent electrical connections.

In addition, the microgrid will assure that our emergency responders will have reliable electric service should there be an unplanned outage outside of the control of the Jamestown BPU. This is critical for the overall safety and health of our community.

The BPU's commitment to assessing electrical needs now and into the future through innovative projects like this community microgrid project is encouraging and helpful to our disadvantaged community.

We appreciate the BPU's efforts to advance a high-level of reliability for our residents through this grant opportunity.

Thank you.

Mel Mason

Director

145 Chandler Street | Jamestown, NY 14701
Phone: 716-489-2303 | Fax: 716-488-2520

"In response to the Gospel, we freely offer meals, fellowship, dignity and respect to all who come through our doors"



March 10, 2023

Board of Directors

Cindy Saxton
President
Kathy Nicastro
Vice President
Danielle Cederquist
Secretary
Beth Barnes
Treasurer
Sue Arrance
Patti Centi
Rose Marie Clarke
Jon DeAngelo
Charles Holder
Toni Indriolo
Robert Gould
Justin Gould
Jennifer Lundmark
Pamela Reese
Julie Wooten

Jamestown Board of Public Utilities
ATTN: David Leathers, General Manager
92 Steele Street
Jamestown, New York 14701

RE: Community Microgrid Grant Application

Dear Mr. Leathers:

St. Susan Center is happy to support the Jamestown BPU's application to the United States Department of Energy (DOE) for grant funding to strengthen the reliability and resilience of our electrical system by building a community microgrid.

St. Susan Center serves underprivileged members of our community by serving hot meals **313 days** every year excluding Sundays' and four holidays. We served **34,129 meals** in 2022. Our location at 31 Water Street is connected to the underground district heating system that would become part of the microgrid. The Center requires reliable electrical service to protect its inventory of food items that must be refrigerated or frozen. Also, the facility is often the only warm place that our underprivileged community members can go to for a meal and a supportive environment.

On behalf of the Board of Directors, staff, and guests of St. Susan Center, we wish you success with your application for this community microgrid project.

Sincerely,

Cherie Rowland
Executive Director
director@stsusancenter.org



Anne Greene, Executive Director - 509 Cherry Street, Jamestown, NY 14701-5098 - Phone 716-484-7135 - Fax 716-487-1148 - www.prendergastlibrary.org

March 3, 2023

Jamestown Board of Public Utilities
ATTN: David Leathers, General Manager
92 Steele Street
Jamestown, New York 14701

RE: Prendergast Library Commitment Letter on Behalf of JBPU Federal Grant Request

Dear Mr. Leathers:

The James Prendergast Library, a key customer of the Jamestown BPU, is pleased to show our commitment to the application to the United States Department of Energy (DOE) for grant funding in support of strengthening the reliability and resilience of our electrical system by building a community microgrid.

This microgrid would directly support our building's electrical needs should a transmission interruption occur. Our facility provides important programs and is a safe place for our community members to gather, particularly during the long winter months.

Because our library is connected to the JBPU's district heating thermal network, we are pleased to know that the application includes the placement of a small microgrid at our site to ensure that the fans supporting our heating system will continue to operate if a transmission interruption occurs during the heating months.

The BPU's commitment to assessing electrical needs now and into the future through innovative projects, like this community microgrid project, is encouraging and helpful as we all work to address the many needs and priorities of our community.

The James Prendergast Library believes this project would help maintain a stable and comfortable environment for our patrons. We appreciate the work of the JBPU in submitting this grant request.

Thank you,

Anne Greene
Executive Director



**FOR YOUTH DEVELOPMENT
FOR HEALTHY LIVING
FOR SOCIAL RESPONSIBILITY**

**Jamestown Area YMCA
Corporate Branch**
101 E. Fourth Street
Jamestown, New York 14701
P (716) 664 2802
F (716) 488 7680
www.jamestownymca.org

**Lakewood Paul Bush
Branch YMCA**
183 E. Fairmount Avenue
Lakewood, New York 14750
P (716) 763 0303
F (716) 763 4728
www.jamestownymca.org

YMCA Camp Onyahsa
101 E. Fourth Street
Jamestown, New York 14701
P (716) 753 5344
F (716) 487 1174
www.onyahsa.org

Eastside Family YMCA
727 E. Second Street
Jamestown, New York 14701
P (716) 484 3729
F (716) 484 6732
www.jamestownymca.org

**YMCA Heritage House
Child Care Center**
155 Prather Avenue
Jamestown, New York 14701
P (716) 338-3825
www.jamestownymca.org

**The Y: A charity that makes
a difference. Invest in our
youth; please consider a gift to
the Endowment Fund.**

March 23, 2023

Jamestown Board of Public Utilities
ATTN: David Leathers, General Manager
92 Steele Street
Jamestown, New York 14701

RE: Community Microgrid Grant Application

Dear Mr. Leathers:

The Jamestown YMCA is fully supportive of the Jamestown BPU's application to the United States Department of Energy (DOE) for grant funding in support of strengthening the reliability and resilience of our electrical system by building a community microgrid.

The YMCA building is in the city's downtown corridor and part of the area connected to the underground heating system that would become part of the microgrid. The YMCA offers a number of services and recreational opportunities to people of all ages and works closely with our community's disadvantaged youth. In addition, we have housing units that are rented by low-income, elderly, and disabled tenants. The reliability and resilience of BPU electrical services is of paramount importance to all of our constituencies.

We believe the BPU's commitment and innovative approach to assessing future electrical needs through this community microgrid project deserves the support of the DOE in this funding opportunity.

Thank you.

John Barber
Jamestown YMCA
V.P. of Operations



Northwest Arena

March 10, 2023

Jamestown Board of Public Utilities
ATTN: David Leathers, General Manager
92 Steele Street
Jamestown, New York 14701

RE: Community Microgrid Grant Application

Dear Mr. Leathers:

The Northwest Arena is fully supportive of the Jamestown BPU's application to the United States Department of Energy (DOE) for grant funding in support of strengthening the reliability and resilience of our electrical system by building a community microgrid.

The Northwest Arena is situated in the downtown corridor and is connected to the underground district heating system that would become part of the microgrid. The Arena depends on reliable electrical service to provide activities for all age groups from early morning until late at night, seven days a week. In case of a major regional outage if the Arena were connected to the microgrid, it could serve as a large-scale shelter.

We applaud the BPU's commitment to investigating innovative ways to provide for our future electrical needs through this community microgrid project.

Thank you,

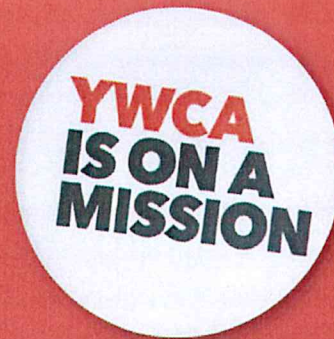
Keith Martin
Executive Director
Northwest Arena
Keith.martin@northwestarena.com
716-484-2624 Ext. 202

319 W Third St.
Jamestown, NY 14701
northwestarena.com
p: 716-484-2624
f: 716-484-8138

eliminating racism
empowering women
ywca

Jamestown, NY

YWCA Jamestown
401 North Main Street
Jamestown, NY 14701
T (716) 488-2237
F (716) 484-1752
info@ywcajamestown.com
www.ywcajamestown.com



March 15, 2023

Jamestown Board of Public Utilities
ATTN: David Leathers, General Manager
92 Steele Street
Jamestown, New York 14701
RE: Community Microgrid Grant Application

Dear Mr. Leathers:

The Jamestown YWCA is fully supportive of the Jamestown BPU's application to the United States Department of Energy (DOE) for grant funding in support of strengthening the reliability and resilience of our electrical system by building a community microgrid.

This microgrid would directly support the area's core business district that includes the YWCA building, where we offer a variety of critical services for the under-resourced community members. We provide childcare services for children 6 weeks to 5 years old, transitional housing for women and children, single women and pregnant women, and UPK educational programming at our downtown location.

Our organization relies on consistent electrical service to our building to ensure safety for all individuals we serve. During unplanned outages outside of the control of the BPU, it will be reassuring to know that the microgrid could provide the electrical service that is needed to maintain our operations ensuring the safety and security of our residents, staff and clients.

We are encouraged by the BPU's commitment and innovative approach to assessing future electrical needs through this community microgrid project. As an organization that provides critical support services for some of the most at risk individuals in our community, we hope that this project will be funded.

Thank you.

A handwritten signature in blue ink, appearing to read "Amanda Gesing".

Amanda Gesing
Executive Director
YWCA Jamestown

agesing@ywcajamestown.com

EQUAL

POWERFUL

UNSTOPPABLE

STATEMENT OF PROJECT OBJECTIVES (SOPO)**Jamestown Community Microgrid****A. OBJECTIVES**

Objective 1: The Jamestown Community Microgrid Project will provide the Jamestown Board of Public Utilities (JBPU) with the tools and capacity to deliver reliable and resilient electrical and thermal services to the downtown corridor and broader community during a transmission or sub-transmission outage(s). The microgrid will enable potentially life-saving energy to be delivered to public and emergency services, schools, senior and assisted living housing facilities, homeless shelters, small businesses, EV charging stations, and the regional hospital in the City of Jamestown. The microgrid will enable the community to provide essential services to both the disadvantaged local population and the region during an emergency when the power would otherwise be out for an extended period. As the country, state, and local community move toward electrification and the resulting decarbonization, the reliability and resiliency of the electrical grid will be critically important to not only maintain but to significantly enhance. It will also enable customers connected to JBPU's hot water network to pump water inside their facilities to heat their buildings during an electrical outage.

Objective 2: The microgrid project will provide equitable access to well-paying union labor and prevailing wage jobs in the Justice40 community and will create additional temporary well-paying union and prevailing wage jobs during the construction phase. Jamestown will be safer, more resilient, more affordable, and a cleaner place to live which will hopefully enable Jamestown to take another step toward its goals of economic growth, improved health, and emergence from poverty.

Objective 3: The microgrid system will be designed to be expandable/maintainable to handle future electrification load growth and new distributed energy resource (DER) technologies. The construction of a microgrid will enable Jamestown to generate new revenue through ancillary services to keep community costs down, enable more rapid decarbonization, and maintain the microgrid system.

B. SCOPE OF WORK

JBPU will bid for an engineering design firm to assist the JBPU with the design, procurement, installation, and commissioning of a microgrid system, including installing a 3MW 4Hr lithium-ion battery system capable of black start and grid control, distributed load control, and 3 MWH of distributed storage. The JBPU will work with engineering firms and procure additional software and hardware to integrate its SCADA (Supervisory Control and Data Acquisition), meter data management, metering, modeling, communication systems, and associated systems to enable microgrid operations.

The JBPU will utilize its union workforce and leadership team to analyze existing underground cabling, develop a replacement and expansion plan, and design, procure, and install replacements, expansions, and enhancements. The JBPU will work with engineering teams to build an electric vehicle charging station fed underground from the microgrid that can handle a wide variety of vehicles including those with trailers and larger vehicles that may be used for community emergency services.

C. TASKS TO BE PERFORMED

Task 1.0: Project Management and Planning**Subtask 1.1 – Project Management Plan (PMP)**

Within 30 days of award, the JBPU shall submit a Project Management Plan (PMP) to the designated Federal Project Officer (FPO). JBPU shall not proceed beyond Task 1.0 until the PMP has been accepted by the FPO. The PMP shall be revised and resubmitted as often as necessary, during the project, to capture any major/significant changes to the planned approach, budget, key personnel, major resources, etc. JBPU shall manage and direct the project in accordance with the accepted PMP to meet all technical, schedule and budget objectives and requirements. The JBPU will coordinate activities to effectively accomplish the work. JBPU will ensure that project plans, results, and decisions are appropriately documented, and that project reporting and briefing requirements are satisfied.

Subtask 1.2: National Environmental Policy Act (NEPA) Compliance

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

Subtask 1.3: Continuation Briefing(s)

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

Subtask 1.4: Community Outreach

JBPU will work with content creators to develop videos, infographics, and educational content for the community and workforce and distribute those through appropriate channels.

Task 2.0 – Microgrid

This task includes bidding and selecting an engineering firm to assist the JBPU with the microgrid project, final design, material and equipment specifications, site plans, permitting, construction, and commissioning. This task includes developing and deploying the communication network, control software and equipment, and distributed energy resources (load shedding and distributed storage).

Subtask 2.1 – Bid and Selection of Engineering Contractor

JBPU will develop an engineering contractor bid specification for the microgrid project and select a technical contractor from proposals to assist the JBPU.

Subtask 2.2 – Onsite meetings and initial conditions evaluation

JBPU will host an onsite kickoff meeting for data collection of the existing system and development of the engineering Project Schedule

Subtask 2.3 - Permitting and Code Evaluation

JBPU's subcontractor will create a report detailing required permits, applicable codes, and regulations

Subtask 2.4 – One lines, interconnection plan, and site plan

JBPU will assist subcontractor to create drawings for power plant storage and identify locations and plans for distributed battery storage and load controls.

Subtask 2.5 – Permitting approval

JBPU will assist subcontractor with permitting approvals, as necessary.

Subtask 2.6 - Three-line drawings, Protection Schemes and Diagrams

Sub-contractor with JBPU input will create drawings for all sites.

Subtask 2.7 – Software Analysis

Sub-contractor and JBPU will determine required associated components, capabilities needed, and identify software vendors for outage management, energy management, black start, data processing, battery controls, and communication and control plan/architecture.

Subtask 2.8 - Equipment Specification

Sub-contractor will develop an equipment specification list including but not limited to: Batteries, Battery Racks/Trays, Battery Containment Systems, AC-DC Inverters, Energy Storage Plant Controller, Isolation Transformers, Control System, Fire Suppression System, etc.

Subtask 2.9 - Short circuit study and ETAP modeling

JBPU, with assistance from Subcontractor, will model the new system in JBPU's existing ETAP model and ensure arc flash, equipment duty, stability, and coordination are compatible

Subtask 2.10 - Geotechnical Assessment

JBPU will bid for contractor to do geotechnical assessment as needed.

Subtask 2.11 – Final Equipment, Software, and Construction Bid Specifications

Sub-contractor and the JBPU will develop bids for equipment, software, and construction.

Subtask 2.12 – Financial and lifecycle analysis

Sub-contractor will develop a financial model detailing total costs and life cycle analysis and include environmental, labor, and reliability metrics.

Subtask 2.13 – Equipment, Software, and Construction Bid Analysis and awards

JBPU will work with sub-contractor to evaluate bid response and award winners.

Subtask 2.14 – Construction, Installation, Integration, and Commissioning

JBPU will work with sub-contractors to ensure timely and on budget construction, installation, and commissioning phase.

Subtask 2.15 – Training (operation, maintenance, safety)

JBPU will work with sub-contractors to train its union and management teams and local fire department on the safety, operation, and maintenance of the equipment.

Task 3.0 - Underground cable replacements

JBPU will lead all tasks in this section to install and replace underground distribution conductors and potential creation of new underground circuits.

Subtask 3.1 - Prioritize cables based on age and number of faults. Identify new underground circuit opportunities.

Subtask 3.2 - Order appropriate cable sizes, types, and connectors

Subtask 3.3 - Switch to isolate sections for replacement

Subtask 3.4 - Remove old cable, pull in new cables, splice, and terminate

Subtask 3.5 – Install new duct banks and circuits (as applicable)

Subtask 3.6 - Hi-pot and test new cables

Subtask 3.7 - Restore circuits to normal operation

Task 4 – Electric Vehicle Charging Station

Subtask 4.1 - Secure site and engineering contractor

JBPU will send an RFP for engineering contractors to assist with site development.

Subtask 4.2 - Develop site plan and permitting

JBPU to work with subcontractor, City of Jamestown, community partners, and Chautauqua County Soil and Water (to integrate site into watershed plan, if applicable). Secure all required permits. JBPU will work with construction contractor and local partners to create a community space for users to enjoy while utilizing vehicle charging.

Subtask 4.3 - Develop electrical one-line

Subcontractor to develop electrical one-line.

Subtask 4.4 - Order equipment

Subcontractor to develop materials list, JBPU will bid/procure equipment.

Subtask 4.5 - Training for electricians on installation and servicing equipment

JBPU to work with equipment manufacturers for specific training.

Subtask 4.6 – Construction

JBPU will work with its team and third-party contractor to build the parking facilities, including installing conduit, grading, curbing, blacktop, and associated features.

Subtask 4.7 - Install equipment and chargers

JBPU will install equipment and chargers.

Subtask 4.8 - Commission equipment

JBPU will work with equipment suppliers to commission equipment.

Subtask 4.9 - Plantings, signage, site cleanup

D. DELIVERABLES

- Subtask 1.1 - Project Management Plan
- Subtask 1.4 - Pre-Continuation Briefing Document(s)
- Subtask 2.2 – Kickoff meeting report
- Subtask 2.4 – Drawings
- Subtask 2.5 – Permits
- Subtask 2.8 – Equipment Specification
- Subtask 2.10 – Geotechnical Report
- Subtask 2.11 – Bid Documents
- Subtask 2.12 – Financial and life cycle analysis
- Subtask 2.13 – Subcontracts/bidding awards
- Subtask 2.14 – Commissioning Report
- Subtask 3.1 – Material List and Costs
- Subtask 3.2 – Invoices
- Subtask 3.5 – Test Report
- Subtask 4.2 – Site Plan and permits
- Subtask 4.3 – Electrical One-line
- Subtask 4.8 – Commissioning Report

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

E. BRIEFINGS/TECHNICAL PRESENTATIONS

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

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

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

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

Instructions and Summary

Award Number: TA1-057-E
Award Recipient: Jamestown Board of Public Utilities

Date of Submission: 4/5/2023
Form submitted by: Jamestown BPU
(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	Cost Match %
Budget Period 1		\$1,408,689	\$469,563			\$1,878,252	25.00%	1/1/2024-12/31/2024	33%
Budget Period 2		\$1,303,187	\$434,396			\$1,737,582	25.00%	1/1/2025-12/31/2025	33%
Budget Period 3		\$11,081,862	\$3,693,954			\$14,775,816	25.00%	1/1/2026-12/31/2026	33%
Budget Period 4		\$3,144,728	\$1,048,243			\$4,192,970	25.00%	1/1/2027-12/31/2027	33%
Budget Period 5		\$439,479	\$146,493			\$585,972	25.00%	1/1/2028-12/31/2028	33%
Total		\$17,377,945	\$5,792,648			\$23,170,593	25.00%		33%
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	\$74,184	\$158,865	\$354,627	\$165,865	\$35,804	\$789,345	3.41%		
b. Fringe Benefits	\$21,068	\$45,118	\$100,714	\$47,106	\$10,168	\$224,174	0.97%		
c. Travel	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
d. Equipment	\$1,503,000	\$0	\$12,790,000	\$2,730,000	\$0	\$17,023,000	73.47%		
e. Supplies	\$70,000	\$3,600	\$40,474	\$160,000	\$0	\$274,074	1.18%		
f. Contractual									
Sub-recipient	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
Contractor	\$185,000	\$1,530,000	\$1,490,000	\$1,090,000	\$540,000	\$4,835,000	20.87%		
FFRDC	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
Total Contractual	\$185,000	\$1,530,000	\$1,490,000	\$1,090,000	\$540,000	\$4,835,000	20.87%		
g. Construction	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
h. Other Direct Costs	\$25,000	\$0	\$0	\$0	\$0	\$25,000	0.11%		
Total Direct Costs	\$1,878,252	\$1,737,582	\$14,775,816	\$4,192,970	\$585,972	\$23,170,593	100.00%		
i. Indirect Charges	\$0	\$0	\$0	\$0	\$0	\$0	0.00%		
Total Costs	\$1,878,252	\$1,737,582	\$14,775,816	\$4,192,970	\$585,972	\$23,170,593	100.00%		

Additional Explanation (as needed): Note this project is a cost match, not a cost share. Cost match per FOA-0002740 is defined as "Formula D: Federal share (\$) multiplied by non-federal share (%) = Non-federal match (\$)". As a small utility, the cost match is 1/3 of the grant.

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	74,184	28.40%	\$21,068	158,865	28.40%	\$45,118	354,627	28.40%	\$100,714	165,865	28.40%	\$47,106	35,804	28.40%	\$10,168	\$224,174
			\$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:	\$74,184		\$21,068	\$158,865		\$45,118	\$354,627		\$100,714	\$165,865		\$47,106	\$35,804		\$10,168	\$224,174

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	
	International Travel										
										\$0	
	Budget Period 1 Total									\$0	
	Domestic Travel	Budget Period 2									
										\$0	
										\$0	
										\$0	
	International Travel										
										\$0	
	Budget Period 2 Total									\$0	
	Domestic Travel	Budget Period 3									
										\$0	
										\$0	
										\$0	
	International Travel										
										\$0	
	Budget Period 3 Total									\$0	
	Domestic Travel	Budget Period 4									
										\$0	
										\$0	
										\$0	
	International Travel										
										\$0	
	Budget Period 4 Total									\$0	
	Domestic Travel	Budget Period 5									
										\$0	
										\$0	
										\$0	
	International Travel										
										\$0	
	Budget Period 5 Total									\$0	
	PROJECT TOTAL									\$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
			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
1	To Bid	Contractor to create animation/video describing and explaining the project and benefits to the community	\$20,000	\$15,000				\$35,000
1	To Bid	Marketing and outreach for community microgrid to raise awareness	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$75,000
1	To Bid	Training and education for workforce, contractors, emergency services, and impacted community members		\$75,000	\$75,000	\$75,000	\$75,000	\$300,000
2	To Bid	Contractor for Microgrid and battery storage design and implementation,	\$150,000	\$350,000	\$250,000	\$150,000	\$100,000	\$1,000,000
2	To Bid	Geotechnical Assessment, Estimate		\$75,000				\$75,000
2	To Bid	Software Programming and Integrations, Estimate		\$500,000	\$500,000	\$350,000	\$350,000	\$1,700,000
4	To Bid	DCFC Engineering and Site Design			\$150,000			\$150,000
3	To Bid	Duct bank installation 2.5k'		\$500,000	\$500,000			\$1,000,000
4	To Bid	Blacktop, curbing, driving surface for charging station				\$500,000		\$500,000
		Sub-total	\$185,000	\$1,530,000	\$1,490,000	\$1,090,000	\$540,000	\$4,835,000

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

Total Contractual	\$185,000	\$1,530,000	\$1,490,000	\$1,090,000	\$540,000	\$4,835,000
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Additional Explanation (as needed): Preliminary budget for grant application, contractual services will be bid out per municipal bidding requirements if grant is awarded

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
4	DCFC Site Procurement	\$25,000	5 acres of land in central location @ 5k/acre	EV Charging Site
	Budget Period 1 Total	\$25,000		
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 OTHER DIRECT COSTS	\$25,000		

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 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 organization, 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	0.00%	0.00%	0.00%	0.00%	0.00%		<i>Example: Labor + Fringe</i>
General & Administrative (G&A)	0.00%	0.00%	0.00%	0.00%	0.00%		
FCCM Rate, if applicable	0.00%	0.00%	0.00%	0.00%	0.00%		
OTHER Indirect Rate	0.00%	0.00%	0.00%	0.00%	0.00%		
Indirect Costs (As Applicable):							
Overhead Costs						\$0	
G&A Costs						\$0	
FCCM Costs, if applicable						\$0	
OTHER Indirect Costs						\$0	
Total indirect costs requested:	\$0	\$0	\$0	\$0	\$0	\$0	

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

- An indirect rate has been approved or negotiated with a federal government agency. A copy of the latest rate agreement is included with this application and will be provided electronically to the Contracting Officer for this project.
- 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
JBPU	Cash	JBPU Labor	\$95,252	\$203,982	\$455,341	\$212,970	\$45,972	\$1,013,518
JBPU	Cash	Remaining Cost Match toward equipment and services	\$374,311	\$230,413	\$3,238,613	\$835,272	\$100,521	\$4,779,130
								\$0
								\$0
								\$0
								\$0
								\$0
								\$0
								\$0
								\$0
								\$0
								\$0
		TOTAL COST SHARE	\$469,563	\$434,396	\$3,693,954	\$1,048,243	\$146,493	\$5,792,648

Total Project Cost: \$23,170,593

Cost Share Percent of Award:

25.0%

Note: cost share is 25% because this is a cost matching project with a requirement of 1/3 of the federal share

Applicant Name: Jamestown Board of Public Utilities Award Number: TA1-057-E

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			Total (g)
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)		
1. Budget Period 1				\$1,408,689	\$469,563		\$1,878,252
2. Budget Period 2				\$1,303,187	\$434,396		\$1,737,582
3. Budget Period 3				\$11,081,862	\$3,693,954		\$14,775,816
4. Budget Period 4				\$3,144,728	\$1,048,243		\$4,192,970
5. Budget Period 5				\$439,479	\$146,493		\$585,972
6. Totals				\$17,377,945	\$5,792,648		\$23,170,592
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	\$74,184	\$158,865	\$354,627	\$165,865	\$35,804	\$789,345	
b. Fringe Benefits	\$21,068	\$45,118	\$100,714	\$47,106	\$10,168	\$224,174	
c. Travel	\$0	\$0	\$0	\$0	\$0	\$0	
d. Equipment	\$1,503,000	\$0	\$12,790,000	\$2,730,000	\$0	\$17,023,000	
e. Supplies	\$70,000	\$3,600	\$40,474	\$160,000	\$0	\$274,074	
f. Contractual	\$185,000	\$1,530,000	\$1,490,000	\$1,090,000	\$540,000	\$4,835,000	
g. Construction	\$0	\$0	\$0	\$0	\$0	\$0	
h. Other	\$25,000	\$0	\$0	\$0	\$0	\$25,000	
i. Total Direct Charges (sum of 6a-6h)	\$1,878,252	\$1,737,582	\$14,775,816	\$4,192,970	\$585,972	\$23,170,593	
j. Indirect Charges	\$0	\$0	\$0	\$0	\$0	\$0	
k. Totals (sum of 6i-6j)	\$1,878,252	\$1,737,582	\$14,775,816	\$4,192,970	\$585,972	\$23,170,593	
7. Program Income						\$0	

x. Summary/Abstract for Public Release**Project Applicant:** Jamestown (NY) Board of Public Utilities**Project Manager:** Cory Allen, Technical Lead; Bradley Bentley, Business Lead; Ellen Ditonto, Community Engagement Lead**Project Title:** Jamestown Community Microgrid

The Jamestown Community Microgrid Project will provide the Jamestown Board of Public Utilities (JBPU) with the capacity to deliver reliable and resilient energy services to the downtown corridor during a transmission or sub-transmission outage(s). The microgrid will enable potentially life-saving energy to be delivered to public and emergency services, schools, senior and assisted living housing facilities, homeless shelters, small businesses, EV charging stations, and the regional hospital in the City of Jamestown benefiting the local disadvantaged Justice40 community and the surrounding region.

The JBPU has long recognized the importance of utility service reliability and is always striving to improve. A microgrid system, defined as “a group of interconnected loads and distributed energy resources within clearly defined electrical boundaries that act as a single controllable entity with respect to the grid,” is a promising approach to improve system reliability and resiliency. A microgrid can ensure reliability and resiliency for a community by reducing risks that would normally be outside of its control (i.e., transmission outage or severe storm damage). Because of the unique presence of the JBPU’s generating capability and its direct intra-connection within the JBPU’s service area, the creation of a community microgrid is highly feasible and could be progressed rapidly.

The Jamestown Microgrid system involves utilizing existing power generation equipment to power a resilient network of existing underground electrical distribution circuitry in the core area of downtown Jamestown, a Justice40 Community, independently of the regional 115 kV system.

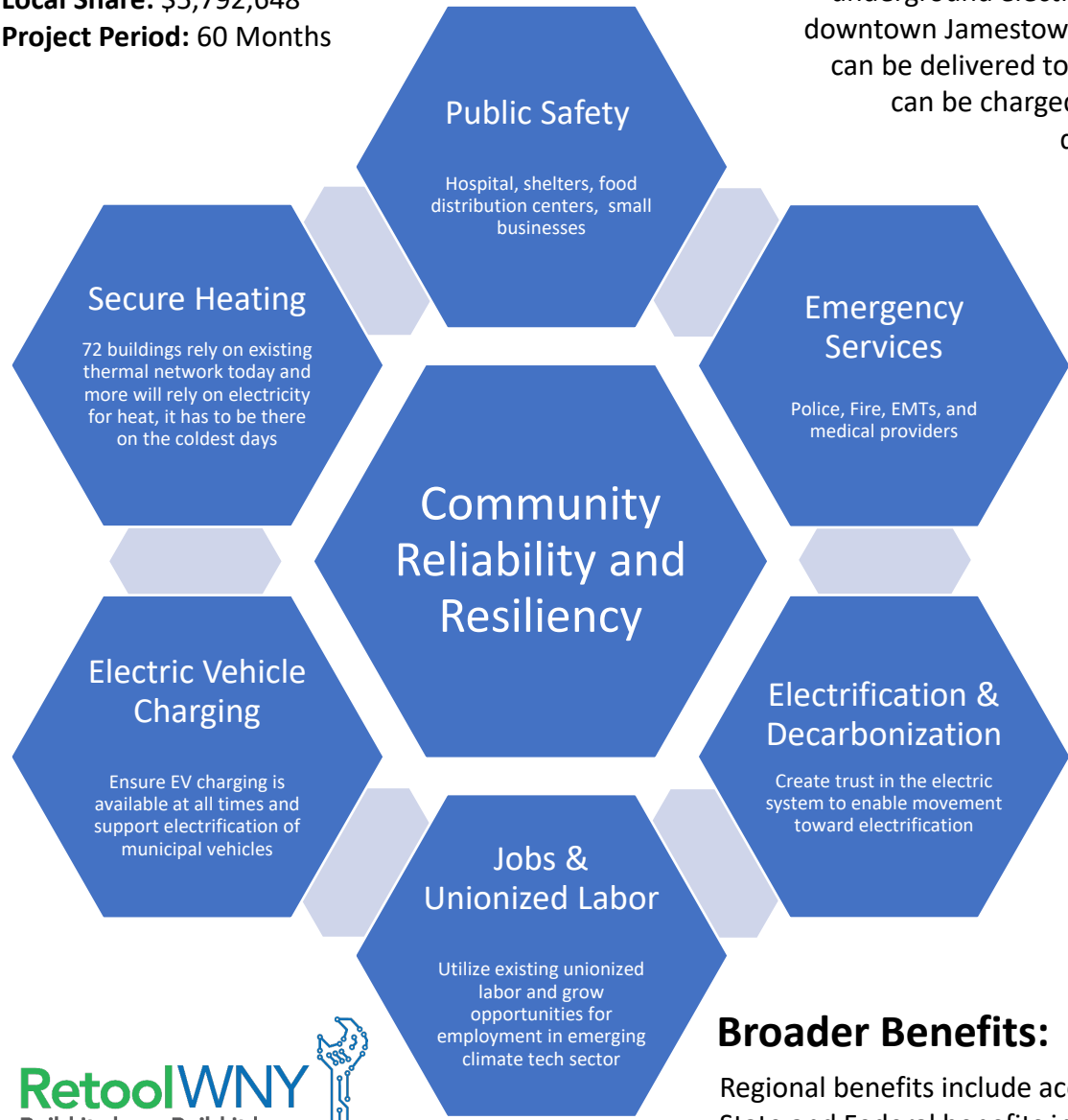
The targeted improvements include hardware, software, utility scale battery storage, black start, controls and systems, and electric vehicle chargers to enable the JBPU to serve its core community during a local, regional, or national grid-related problem. The JBPU’s existing skilled and unionized workforce consisting of electricians, mechanics, line workers, and power plant operators as well as its engineering and leadership team will ensure the system can be implemented, maintained, and utilized during an event.

The microgrid project will help the community become more resilient and makes investments to directly support the community and local union workforce. The ability to provide electricity during peak demand periods and during an outage will be critical as New York State and federal climate action drives further electrification and reliance on the electrical grid. This microgrid is a proactive step to address short-term and long-term needs of the Jamestown community and assist with local, state, and federal climate action goals, the Justice40 initiative, and investments in infrastructure reliability and resiliency.

TA1-057-E
 DE-FOA-002740, Topic Area 1: Grid Resilience Grants
Prime Recipient: Jamestown Board of Public Utilities
Federal Request: \$17,377,945
Local Share: \$5,792,648
Project Period: 60 Months

Jamestown Community Microgrid

The Jamestown Microgrid system will utilize existing community power generation equipment to energize a resilient network of underground electrical distribution circuitry ensuring a high level of utility service reliability and resiliency in the core area of downtown Jamestown, a Justice40 community, independently of the regional 115 kV system. The microgrid will ensure energy can be delivered to public services, the regional hospital, shelters, schools, and businesses as well as ensure electric vehicles can be charged during an emergency. The microgrid will also serve additional load if local overhead infrastructure is not damaged. The total customers directly supported by this proposal is 9,936, about half of the JBPU system.



Lead Personnel:



Brad Bentley
Energy and Gas Resources Manager
Business Lead



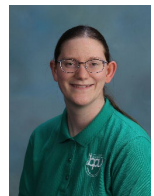
[Cory Allen](#)
Power Plant Supervisor
Technical Lead



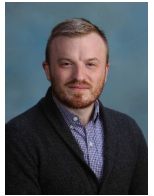
[Ellen Ditonto](#)
Business Development Coordinator
Community Engagement Lead



Mitch Simons
Senior Power System Electrician
IBEW459



Amanda D'Aurora
Jr. Electrical Engineer



[Jarrett Devereaux](#)
Electrical Engineer

Primary Technology/Equipment:

- Microgrid Controller(s)
- Voltage/Current transformers, relays, synchro-phasors, data concentrator
- Load management Software and significant programming
- 3MW, 4MWH Li-Ion Battery Storage with Black start and grid formation
- Underground-fed Level 3 Electric Vehicle Charging
- Upgrades/replacements of underground aging high voltage cabling
- Distributed storage and controls



[David Leathers](#)
General Manager



[Kristofor Sellstrom](#)
Transmission and Distribution Manager

Union team:

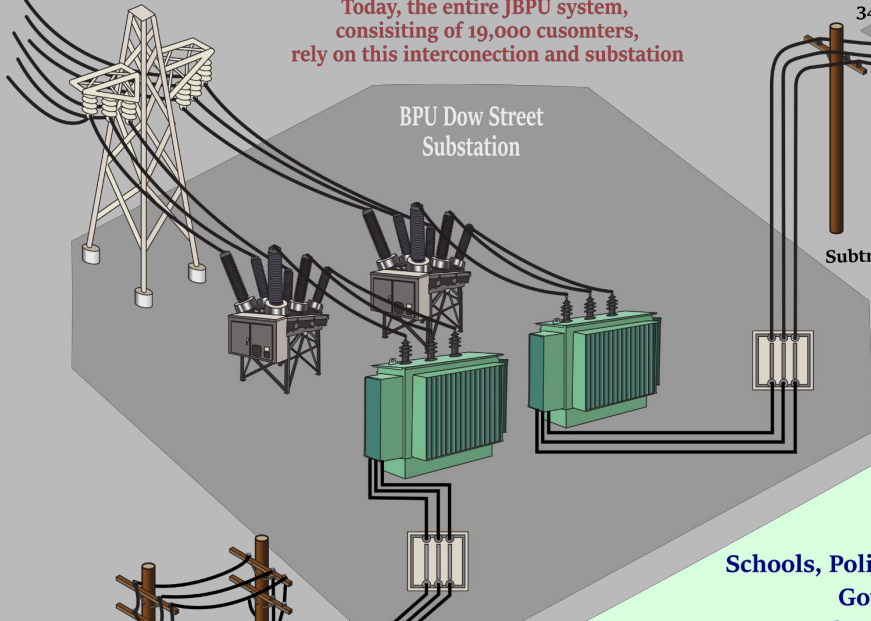
- 15 Lineworkers
- 6 Electricians
- 4 Mechanics
- 11 Operators

Broader Benefits:

Regional benefits include access to hospital, shelters, food, grocery & pharmacies, and EV charging during a regional event. State and Federal benefits include enabling more renewable generation, grid flexibility, and regional resiliency and revenue opportunities through grid ancillary services to support maintenance of microgrid long-term.

115kV Transmission Interconnection
From National Grid

Today, the entire JBPU system,
consisting of 19,000 customers,
rely on this interconnection and substation



BPU Dow Street
Substation

34,500v

Subtransmission

Jamestown BPU Carlson Station

Add Isolation Controls
Point of Common Coupling

Add communication, load
management, battery dispatch

GE LM6000
42 MW
Natural Gas Turbine

Natural Gas
(BPU Owned
pipeline)

Add advanced
controls and
black start

Carlson Station
Distribution
Substation

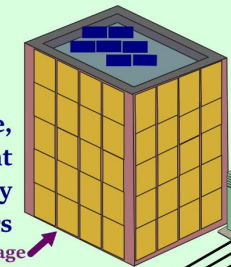
Add 3MW, Battery Storage

Add EV charging
fed by underground
circuits
Add Battery Storage

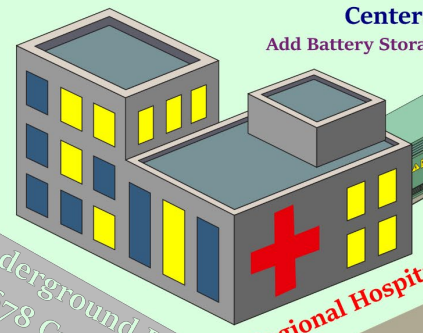
Subsidized Housing
Urban Residential

Schools, Police & Fire,
Government
and Community
Centers

Add Battery Storage



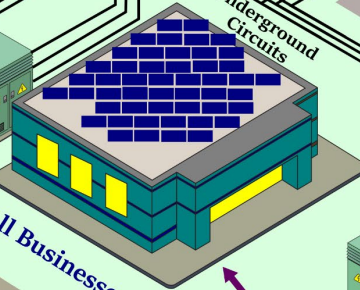
Underground Portion
678 Customers



Regional Hospital

Replace/upgrade
aged cables

Small Businesses

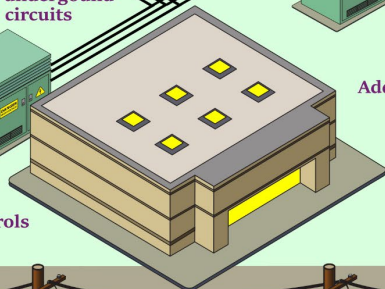


Add underground
circuits

Add Distributed
Generation
Controls

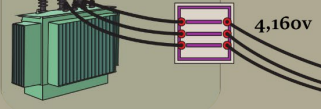
Add Load Controls

Grocery
Restaurants
Hotels



Add Battery Storage

Distribution
Substations



4,160v

Additional Microgrid Service Area
9,258 Customers



240/120 Volts for your home!



Jamestown Board of Public Utilities Proposed Microgrid

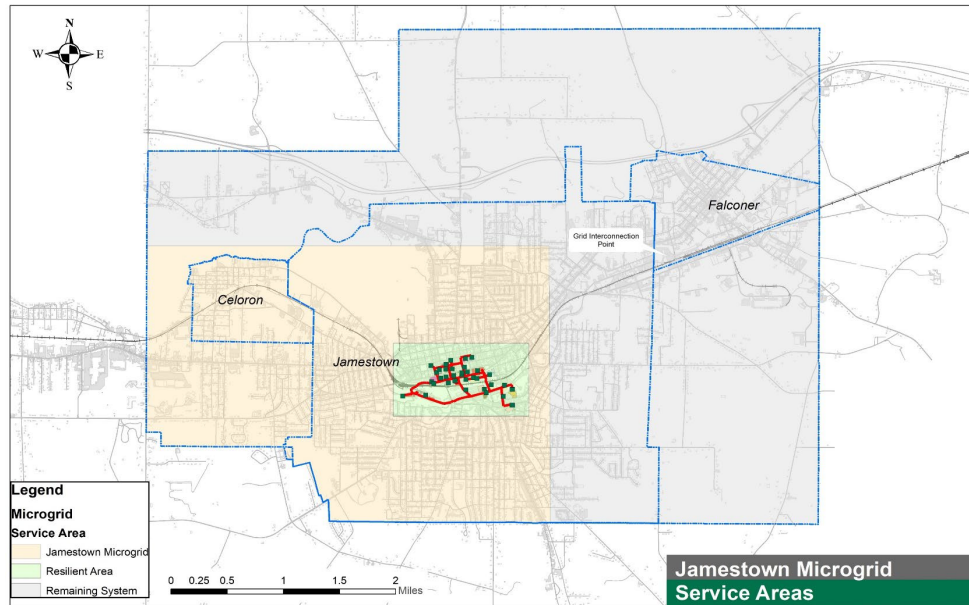
Fed by underground circuits, the storm resilient
portion will be generally immune to storm damage

Depending on outage and loading scenerio, additional load could be served

TA1-057-E

Jamestown Community Microgrid Service Areas

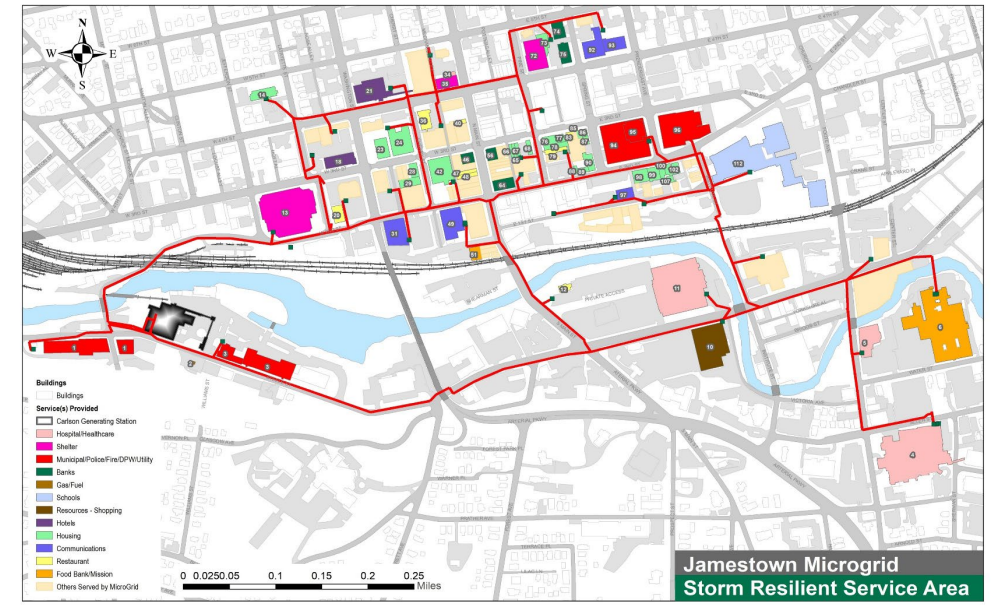
Microgrid - Coverage Area



9,866 Electric + 70 District Hot Water Customers
This area (tan & green colors) can be served if JBPU's overhead lines are not damaged by the event/outage (i.e. regional transmission, interconnection substation, or sub transmission outage)

[Link to high resolution maps](#)

Microgrid – Resilient Coverage Area



608 electric + 70 District Hot Water Customers
These customers can be served even if the JBPU's overhead network and/or the regional transmission network are damaged/offline because they are fed by underground circuits

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-002740 Proposer: Jamestown BPU
2. This Environmental Questionnaire pertains to a: Recipient or Prime Contractor Sub-recipient or Subcontractor
3. Principal Investigator: Bradley Bentley Telephone Number: 716-661-1620
4. Project Title: Jamestown BPU Microgrid
5. Expected Project Duration: 60 months
6. Location of Activities covered by **this** Environmental Questionnaire: (City/Township, County, State):
City of Jamestown, NY
7. List the full scope of activities planned (only for the location that is the subject of this Environmental Questionnaire).
 Installation of a Microgrid system utilizing the Carlson Power Plant and Jamestown BPU distribution system. Equipment such as battery storage, controls, relaying, Electric Vehicle charging, and software will be installed at the Carlson station, public surface lot, and associated substations.
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
To be selected after bidding process	Carlson Station and Associated Substations
To be selected after bidding process	Surface lot, location to be determined

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.

C. PROJECT LOCATION

1. Provide a brief description of the project location (physical location, surrounding area, adjacent structures).
The Microgrid is to be constructed within the Carlson Power Plant and substation boundaries with adjacent new structure(s) and within existing buildings and a parking lot
2. Attach a project site location map of the project work area.
Include a power plant site map - Attachment XXXXX

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.

- | | | | |
|-----------------------------------|--|--|--|
| <input type="checkbox"/> Urban | <input type="checkbox"/> Industrial | <input type="checkbox"/> Commercial | <input type="checkbox"/> Agricultural |
| <input type="checkbox"/> Suburban | <input type="checkbox"/> Rural | <input type="checkbox"/> Residential | <input type="checkbox"/> Research Facilities |
| <input type="checkbox"/> Forest | <input type="checkbox"/> University Campus | <input checked="" type="checkbox"/> Other: <u>Municipal property</u> | |

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

It is anticipated that the Microgrid project would fit within the existing footprint of the power plant, substations, and associated municipal property for Electric Vehicle Charging components.

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.

Construction would include new building(s) on existing power plant/substation and reuse of existing power infrastructure to interconnect the microgrid

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

No land areas would be affected.

Land use would have similar type operational activities as they have today

- 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)

The power plant site sits adjacent to the Chadakoin River which is used for recreational activities during the summertime.

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

The project is expected to affect building structures in the power plant site and substations, and minor underground equipment for electric vehicle charging stations

- 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)

New construction would likely change runoff patterns that would be designed accommodate these changes

- 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)
Key facilities within the City of Jamestown would continue to have power in the event of loss of the primary interconnection with the main power grid

- b. Would the proposed project generate increased traffic use of roads through local neighborhoods, urban or rural areas? No Yes (describe)
Temporary construction activities could increase traffic during these activities. Afterward, traffic would revert to prior levels

- 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

Various sites historical sites are located in the community however none will be impacted by construction of the project.

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)

There will be no construction that will be close enough to disturb any historical, archaeological, or cultural sites. Most work occur at the existing power plant.

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	<input checked="" type="checkbox"/>	<input type="checkbox"/>
O ₃ - 8 Hour	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SO _x	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PM - 2.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PM - 10	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CO	<input checked="" type="checkbox"/>	<input type="checkbox"/>
NO ₂	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lead	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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.

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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
<input type="checkbox"/> SO _x		
<input type="checkbox"/> NO _x		
<input type="checkbox"/> PM - 2.5		
<input type="checkbox"/> PM - 10		
<input type="checkbox"/> CO		
<input type="checkbox"/> CO ₂		
<input type="checkbox"/> Lead		
<input type="checkbox"/> H ₂ S		
<input type="checkbox"/> Organic solvent vapors or other volatile organic compounds--List:		
<input type="checkbox"/> Hazardous air pollutants -- List:		
<input type="checkbox"/> Other -- List:		
<input checked="" type="checkbox"/> 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.
 Chadakoin River is adjacent to the power plant site

b. What sources would supply potable and process water for the proposed project?
 City of Jamestown, Water Division

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ENVIRONMENTAL QUESTIONNAIRE

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

	Gallons/day	Gallons/year
<input type="checkbox"/> Non-contact cooling water		
<input type="checkbox"/> Process water		
<input type="checkbox"/> Sanitary		
<input type="checkbox"/> Other -- describe:		
<input checked="" type="checkbox"/> 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)

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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
<input type="checkbox"/> Municipal solid waste (e.g., paper, plastic, etc.)	
<input type="checkbox"/> Coal or coal by-products	
<input type="checkbox"/> Other -- Identify:	
<input type="checkbox"/> Hazardous waste -- Identify:	
<input checked="" type="checkbox"/> 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)

d. How would wastes for disposal be transported?

N/A after construction. City of Jamestown, Solid Waste Division would handle any construction related disposal

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

Lithium Ion Batteries will be recycled at the end of their useful life

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

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- 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)
The City of Jamestown, BPU has a worker safety program and follows all applicable safety rules and regulations.
- e. Would additional safety training be necessary for any new laboratory, equipment, or processes involved with the project?
 No Yes (describe)
Additional operator training will be required to switch from the primary transmission power source to the microgrid and for maintenance of Li-ion batteries
- f. Describe any increases in ambient noise levels to the public from construction and operational activities.
 None Increase in ambient noise level (describe)
There may be a temporary increase in ambient noise levels during construction. Noise levels will return to prior levels after construction.
- 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)
Depending upon location and activities being performed, hearing protection may be required

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)

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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:

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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.
No other environmental laws or regulations would be required for 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)

No significant impacts are expected however the community would benefit from increased power reliability.

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ENVIRONMENTAL QUESTIONNAIRE

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

The microgrid project would likely be decommissioned in a similar manner to the power plant with the appropriate disposition and/or recycling of equipment and materials.

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: 

Date (mm/dd/yyyy): 04/04/2023

Typed Name: Bradley Bentley

Title: Energy & Gas Resources Manager

Organization: JBPU

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: 



Re: Foreign Entity Waiver Requests and Foreign Worker Waiver Requests

Project Title: Jamestown Board of Public Utilities Community Microgrid

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

Technical Point of Contact: Cory Allen

Business Point of Contact: Brad Bentley

Team Members / Organizations: City of Jamestown, Jamestown Public Schools, potentially the American Red Cross and other storm/disaster services

The applicant is NOT requesting the above waiver for this project.



Re: Buy America Requirements for Infrastructure Projects Waiver Requests

Project Title: Jamestown Board of Public Utilities Community Microgrid

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

Technical Point of Contact: Cory Allen

Business Point of Contact: Brad Bentley

Team Members / Organizations: City of Jamestown, Jamestown Public Schools, potentially the American Red Cross and other storm/disaster services

The applicant is NOT requesting the above waiver for this project.

xvi. Community Benefits Plan

Community and Labor Engagement

The Jamestown Board of Public Utilities' (JBPU) actions of engaging labor unions, local governments, local stakeholders, and community-based organizations within the city of Jamestown have been long and extensive. As a municipally owned and operated utility, the JBPU's entire operation is focused on serving its community and its customers at the lowest cost. The JBPU staff work together with the city of Jamestown's unions to ensure public safety. The JBPU staff responds to requests from police, firefighters, and public works employees (Kendall Club PBA, Professional Firefighters Local 137, ASCME Local 418) on a regular basis when they are handling emergencies, fires, road closures, or other issues. The level of cooperation and teamwork is unparalleled in our region, and it is the result of the knowledge that all employees of these organizations are members of one team.

The JBPU is governed by a nine-member politically appointed board, all of whom are city residents, who use their role on the board to communicate the energy needs of all the citizens in the planning and direction of the JBPU. The JBPU has three unions representing its workers in various divisions. As part of the municipal government structure, the JBPU has been a strategic partner in numerous local government initiatives, particularly those that affect the economic prosperity and overall quality of life of the residents. For this proposed project the JBPU has implemented and planned several community engagement strategies for input and feedback on the project.

Microgrid Project: On March 9th, 2023, the local newspaper, the Jamestown Post Journal¹ published a large article on the microgrid project and provided the community with avenues to participate in the project planning, through community meetings scheduled for March 23rd (virtual public meeting) and March 27th (in person). The paper provided the community with information on how the public could provide comments on the project up until March 28th via email as well. This news article was shared on the JBPU website² in the Spotlights section. The JBPU's social media channels (Facebook, Twitter, LinkedIn) also were used to promote the community meetings and encouraged public comments.

Information on the community meetings was shared via email with the 72 customers on the JBPU thermal network. These customers were urged to attend one of the information meetings, learn more about the project, and ask questions that they had.

On March 14th, 2023, the JBPU General Manager David Leathers met with local officials to discuss the microgrid project. This included:

1. City of Jamestown's Mayor Edward Sundquist

¹ <https://www.post-journal.com/news/community/2023/03/two-opportunities-for-public-comment-on-jamestown-bpu/>

² <https://www.jamestownbpu.com/CivicAlerts.aspx?AID=407>

2. Jamestown Police Department Chief Timothy Jackson
3. Jamestown Fire Department Deputy Fire Chief Matthew Coon
4. City of Jamestown Clerk Jennifer Williams
5. City of Jamestown's Department of Development Crystal Surdyk
6. City of Jamestown's Public Works Director Jeffery Lehman
7. City of Jamestown's Corporate Counsel Elliot Raimondo

These city officials were presented with an outline of the proposed microgrid project and provided with an opportunity to discuss their concerns and provide comments and questions on the grant application. The project was discussed in detail, and all attendees approved of the project, verbally committed to it, and then followed up with a formal letter of partnership signed by the mayor and department heads directly responsible for public safety.

Additionally, the microgrid project was also discussed during two public meetings held on March 23rd and March 27th, 2023. The virtual public meeting featured a brief overview of the project, introduction of project leads, and information on the proposed location of the microgrid within the JBPU system. There were 30 community participants, many representing organizations that are serviced by the JBPU's underground circuitry and thermal network and would be positively impacted by this project. Questions included a concern about the long-term viability of natural gas as the source for the power generation in the microgrid scenario, particularly because New York State has determined through its Climate Leadership and Community Protection Act (CLCPA) that by 2050, natural gas should not be used for power generation. JBPU staff indicated that this grant application does not preclude a different source of electric generation to replace natural gas in the next 12-15 years and the JBPU is investigating a number of different options for power generation in the future. The microgrid would support the ability to start up power generation from a variety of sources.

Valuable feedback from community meetings resulted in a modification to the JBPU's original plan to include additional smaller microgrids to be located at critical sites that are on the utility's thermal network. This would allow the location's fans/pumps to operate during a power interruption, which would ensure that heat could be distributed throughout the skilled nursing facility, subsidized apartments, medical rehabilitation facility, and the library, to name a few.

The proposed project would utilize highly skilled architectural and engineering firms as well as contractors who are part of our region's unionized labor force for the construction of the microgrid system. This project implementation would lead to reduced hardship and reduced risk of business failure and associated job loss caused by power outages, or the risks associated with potentially unreliable electric service caused by grid interruptions. The project will specifically require the expertise of two electrical unions, IBEW Local 459 employees, including those working at the JBPU Carlson Generating Station, and IBEW Local 106 union members who work throughout the community and who make sure that electric services are in working order at commercial and residential buildings in the area covered by the planned microgrid. In addition,

the Jamestown Professional Firefighters Union Local 137 will be involved in training for overall safety, response, and accident prevention related to fires caused by lithium-ion batteries.

The support for this microgrid project by both IBEW Local 459 and IBEW Local 106 is demonstrated in memorandums of understanding (MOUs) from both organizations, signed by their business managers. In addition, a Sr. Power Systems Electrician, who is part of the IBEW Local 459, is part of the project leadership team. The knowledge and skill levels of their members will be enhanced by a project of this magnitude.

The JBPU Procurement Policy includes specific language on Contracts for Public Work. Competitive bidding is required for Contracts for Public Work in excess of \$35,000 and must follow procedures for competitive bidding outlined in Section 103 of New York State General Municipal Law. Public Work contracts are covered in Article 8 of the New York State Labor Law which requires projects done on behalf of public agencies to pay prevailing wages and supplements on public construction projects. Exceptions to bidding are allowable for certified MWBE contractors on projects up to \$200,000 in accordance with New York Municipal Law.

If there are purchases below \$25,000 or Contracts for Public Work that fall below the \$35,000 level, they must be secured through written requests for proposals (RFPs), written quotations, verbal quotations, or any other method that assures that goods will be purchased at the lowest price and without benefit to any one vendor or supplier, except for the MWBE exemption provided in New York law. All competitive bid awards must be approved by the JBPU’s Board in the form of a resolution.

Community Engagement				
All meetings are to be held during different day parts (morning, afternoon, evening), and in several locations to ensure equitable access to engage and maximize participation. Individuals who are experiencing mobility barriers will be provided with access to participate via Zoom or Teams, phone, or an in-person meeting at the individual’s residence. Adaptive language resources will be made available upon request.				
Milestones Year One	Milestones Year Two	Milestones Year Three	Milestones Year Four	Milestones Year Five
The JBPU will hold three community information meetings, the first will be within the first four months, introduce the project, and review goals and timeframe to the community and stakeholders.	JBPU will hold two community updates and information meetings. These meetings will be held semi-annually, 6 months from the last meeting in year one and then six months from that meeting date. Agenda: Project Status, annual goals, timeframe, and status of construction.	JBPU will hold two community updates and information meetings. These meetings will be held semi-annually, 6 months from the last meeting in year one and then six months from that meeting date. Agenda: Project Status, annual goals, timeframe, and status of construction.	JBPU will hold two community updates and information meetings. These meetings will be held semi-annually, 6 months from the last meeting in year one and then six months from that meeting date. Agenda: Project Status, annual goals, timeframe, and status of construction.	JBPU will hold two community updates and information meetings. These meetings will be held semi-annually, 6 months from the last meeting in year one and then six months from that meeting date. Agenda: Project Implementation activities

Labor Engagement				
Milestones Year One	Milestones Year Two	Milestones Year Three	Milestones Year Four	Milestones Year Five
JBPU will assure that 100% of contracted employees working on construction activities will be paid at or above prevailing wage rates and that JBPU will pursue unionized labor/trades for construction activities as much as possible.				
JBPU will meet quarterly with all construction/ labor entities to discuss needs, concerns, obstacles, and issues with the construction of the microgrid.				

Investing in the American Workforce
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The JBPU will ensure that a well-qualified, skilled, and trained workforce will be hired for all construction activities and ongoing labor will be provided by the JBPU which also has a highly skilled and trained workforce. The proposed microgrid project will rely on engineering firms and contractual workers with specific skills in the design and implementation of microgrids. The depth of experience of the current JBPU employees will be complemented by contractual employees, unionized whenever possible, all paid at or above prevailing wage rates, during the various stages of design and implementation.

The JBPU is a top 20 employer in the city of Jamestown and has set a high standard for attracting and retaining a highly skilled workforce.³ This is reflected in their 86% employee retention rate and the fact that more than half of their labor force resides in the communities that they serve. The high standard is further demonstrated by the fact that there have not been any violations under the National Labor Relations Act, Fair Labor Standards Act, Occupational Safety and Health Act, Service Contract Act, Davis-Bacon Act, or Title VII of the Civil Rights Act for the past two years. JBPU has achieved this success through a number of avenues, i.e., providing educational and training opportunities, paying livable/unionized wages, providing employee benefits, and health and wellness initiatives.

The JBPU employs 76 highly skilled members of IBEW Local 459 in positions at the Carlson Generating Station and in the electrical division, including the following titles: apprentice line worker, line crew chief, line worker, power plant lab technician, power plant mechanic, senior power plant mechanic, power plant shift crew chief, power system electrician, senior power system electrician, and turbine operator. This workforce participates in annual training on topics related to safety, basic electricity, hoisting, substation design, operation, equipment and theory, and security of assets. Included in the required training for this project will be sessions on grid-sized lithium-ion batteries and associated risks and safety protocols.

JBPU Local 459 employees have significant seniority in their positions, thus the creation of senior titles for both the power plant mechanic and the power system electrician. There is a high level of retention of JBPU employees over time. This has been a significant factor in the success of the JBPU’s power-generating capability and its excellent safety and system reliability record.

³ <https://www.zippia.com/company/best-biggest-companies-in-jamestown-ny/>

As a municipal utility that is subject to the NYS Civil Service Law, JBPU has limitations in its ability to modify salary ranges. However, there are significant benefits associated with positions that help make it more competitive in comparison to private-sector jobs in this rural community. JBPU has an excellent record of providing increases to wages on an annual basis, to remain competitive in recruitment efforts for a very limited labor pool. A generous benefits package is available that includes health insurance, state retirement system contributions, a health and wellness benefits program, longevity payments, as well as reimbursement for educational and training opportunities. Employees participate in regular on-site and virtual training that encompasses a variety of topics.

JBPU has a strong commitment to support training, educational opportunities, and professional conferences and seminars that provide networking opportunities for its staff. JBPU encourages its employees to maintain professional certifications and to progress their educational training opportunities to improve and advance job-related skills and/or to improve readiness for potential advancement in future openings at the JBPU. The JBPU staff includes two apprentice line workers who are members of Local 459. This hands-on training is critical to the organization's commitment to internal promotions and proper succession planning.

JBPU employees who have completed at least 90 days of service are eligible for educational assistance or tuition reimbursement for educational activities which are approved in advance by management. The reimbursement can be up to \$5000 per calendar year if there is satisfactory completion documented for the coursework.

JBPU has an award-winning health and wellness program for its employees that supports healthier lifestyle choices through education and initiatives that encourage physical and mental well-being and foster a healthy work environment. The program provides ways for employees to track progress on key indicators and provides an annual financial reward for those completing the program's requirements. In addition, JBPU provides a private gym facility where employees have access to equipment and free weights. Other non-safety training, professional development, leadership training, and process certifications are maintained and completed by employees and managed through their direct supervisors.

Employees are encouraged to track industry issues and trends and to attend appropriate conferences and seminars relative to current issues in the utility industry. JBPU is actively engaged with other energy professionals through participation and leadership positions in the New York Association of Public Power (NYAPP) and the American Public Power Association (APPA). Prior approval for travel and conference/seminar costs is required in order to be reimbursed 100%.

JBPU follows best practices in its safety training programs with an active Safety Steering Committee and ongoing communications with union partners. Monthly department employee safety meetings are held in each division to discuss updates on safety trends, issues, and training. Scheduled in-person and virtual training modules are assigned and tracked for all employees.

Topics such as driving safety, globally harmonized system (GHS), Cold Stress, Heat Stress, Fire Extinguishers, Bloodborne Pathogens, PPE, and ergonomics are provided through an online training provider. JBPU conducts in-person training on topics such as Work Zone and Flagging safety, Dig Safety, American Red Cross First Aid/CPR/AED, NFPA 70E, Asbestos, and T&D safety training through the Northeast Public Power Association (NEPPA). The utility achieved a record number of days (730 and counting) for all 149 employees without a lost time incident in January 2023. All employees are trained and certified in CPR and AED use. JBPU has one employee with a Certified Utility Safety Professional (CUSP) designation.

The JBPU is also fully committed to building a clean energy workforce with their community partners. Partnerships with the local community college's workforce development program has been very beneficial to the JBPU, the college, and the community.

The JBPU has supported Jamestown Community College's Building Automation Systems (BAS) workforce development program that was launched in early 2023 through grant dollars provided by the New York State Research and Development Authority (NYSERDA). This certificate program will provide workers who can help support integrated HVAC systems and controls, including those in the BPU district heating customers' locations.

According to the Association of Control Professionals (ACP), the BAS program is the first step in an ecosystem that includes several technical and engineering titles and salary ranges from \$40,000 - \$100,000 or more. This program is particularly important in the JBPU service area because it addresses a number of community benefit goals: a) entry to the program is open to high school graduates who have an interest in programming and HVAC systems; b) the program is an intense 8-week program that provides a fast-track to employability in positions that have starting salaries in the \$40,000+ range; c) there are opportunities to continue with coursework that can lead to an associate's degree and a bachelor's degree, and d) there are available positions in the JBPU service area for BAS technicians, especially due to the integration of building controls and the future of electrification of HVAC.

JBPU's Business Development Coordinator is responsible for outreach to potential employers who are looking to locate in JBPU territory, particularly those who are part of the supply chain for clean energy/clean tech companies. JBPU has invested in direct marketing to attract these businesses to our service area and has used funds from a NYSERDA grant to enhance these marketing efforts. A recent announcement of a Canadian lithium-ion battery cell manufacturer locating in the Jamestown (NY) area provides greater opportunity to attract other clean energy suppliers to our community.

As this proposed project moves forward, the JBPU will rely on engineering firms, construction companies, and contractual workers with specific skills in the design and implementation of microgrids. The depth of experience of the current JBPU employees will be complemented by contractual employees, all paid at or above prevailing wage rates, during the various stages of design and implementation.

Investing in the American Workforce				
Milestones Year One	Milestones Year Two	Milestones Year Three	Milestones Year Four	Milestones Year Five
For all five years, JBPU will aspire to hire 100% unionized labor/trade and will assure that all labor/trade contractors pay prevailing wage rates or higher and are provided with current safety training and demonstrate safety behaviors for all construction-related activities.				
For all five years, JBPU will negotiate in good faith with all in-house workforce contracts, for prevailing wages and benefits.				
Coordinate and develop workforce training certification/program appropriate to maintain a microgrid system with Jamestown Community College Workforce Development Program or an alternative on-line training provider		Provide, if necessary, Microgrid workforce training programs with JBPU will be developed to meet the workforce needs.		
JBPU’s Training Coordinator will develop a comprehensive safety program/manual for grid-sized lithium-ion battery packs for Engineering Level, Supervisory Level; maintenance/electrical workers who maintain the battery packs, control room personnel, in collaboration with Jamestown firefighters’ union		JPBU will conduct microgrid safety training quarterly.	JPBU will conduct microgrid safety training quarterly.	JPBU will conduct microgrid safety training quarterly.
JBPU’s Training Coordinator will develop a training program specifically for the Microgrid: microgrid operation, maintenance of the microgrid system, and/or exposure to the microgrid as part of their workplace responsibilities		JPBU will conduct two intensive training programs on microgrid operation, maintenance of the microgrid system.	JPBU will conduct two annual refresher courses on microgrid operation, maintenance of the microgrid system.	JPBU will conduct two annual refresher courses on microgrid operation, maintenance of the microgrid system.

Diversity, Equity, Inclusion, and Accessibility (DEIA)

New York Municipal Laws related to bidding public work jobs have provisions to allow for certified MWBE businesses to be given preference in the bidding process, including a waiver on bidding requirements for procurements under \$200,000. All New York funding requires that the awardee complies with at least 30% of the funds going to MWBE; the JBPU will continue to seek out and encourage those companies to bid for the construction jobs and be identified as preferred suppliers.

The National Center for Construction Education and Research reports that between 2003 and 2020, the construction industry was largely male dominated; only 10% of the nearly 11 million construction workers were female. Race also has limited representation in the construction field. According to the Bureau of Labor Statistics, 60.9% of construction workers identified as non-Hispanic white in 2020. Hispanic individuals represent another 30% of the construction workforce, almost double the 17.6% they represent among the general workforce. Non-Hispanic Black individuals make up only 5% of the construction industry.

As a municipal organization in New York state, JBPU job titles are regulated by New York State Civil Service regulations. Section 55-a of the Civil Service Law provides for the employment of

persons with disabilities by municipalities who meet minimum qualifications for the position but may need accommodation. There also are bonus points awarded to applicants who are veterans that can help them place higher on the eligibility list.

The microgrid will be constructed and operated in census tract 305 in the City of Jamestown. This is the poorest census tract in the entire city. The Jamestown Microgrid project will increase the opportunity for minority workers to have access to good jobs, helping to close the large and persistent racial wage inequity. The Hispanic population in Jamestown is nearly 10% of the total population compared to 4% African American.

The JBPU will conduct targeted employment outreach to under-represented and disadvantaged community members in Jamestown. The outreach will outline ways to access assistance to prospective under-represented qualified individuals on how to request a waiver of Civil Service examination fees. The New York State Civil Service regulations allow applicants for positions to request a waiver for the examination fee, which can be helpful to disadvantaged applicants. This waiver is applicable for those eligible for Medicaid, recipients of SSI, TANF, or other safety net assistance, or those who are in a certified job training partnership program through New York State or a local social service agency. Applicants who are veterans or are on active duty are eligible for veteran credits, which can provide bonus points on examinations.

The outreach will also provide resources regarding training and apprentice programs in the vicinity of the microgrid. Direct referrals will be made, when possible, to partnering entities for training and wraparound services when appropriate. The JBPU does collaborate with Jamestown Community College and other nearby higher education institutions to conduct workforce development training, place interns and provide appropriate job shadowing for certain career areas. Apprenticeship programs are available in the Jamestown community through the IBEW unions, and the JBPU has two apprentice line worker positions at the present time that are members of Local 459.

Assistance for mental health support as well as mentoring and guidance to under-represented and disadvantaged workers is done through the Workforce Investment Board (WIB), funded through a state allocation of federal dollars. Wraparound services for disadvantaged community members also are available and provided by several organizations such as childcare and transportation, but families often lack knowledge about these services. The WIB provides services for young adults, veterans, and special populations. For current JBPU employees, the JBPU has an Employee Assistance Program (EAP) that provides similar services upon request or recommendation.

Diversity, Equity, Inclusion, and Accessibility (DEIA)				
Milestones Year One	Milestones Year Two	Milestones Year Three	Milestones Year Four	Milestones Year Five
For all five years, JBPU will implement a preferred bidder process to target architectural, engineering, and construction contractors that maintain at least 3% of their labor workforce be made up of under-represented				

demographics for the construction trade (Female, Black, Native American and/or Asian all constitute underrepresented demographics). The bid must be within 25% of the lowest bid to receive the contract.				
For all five years, JBPU contractors that meet the MWBE requirement can access contract work opportunities up to \$200,000 without bidding. This option will be advertised in all bid documents for design and implementation contracts.				
For all five years, all hired contractors will strive to maintain a 3% under-represented labor workforce while on the job.				
For all five years, all federal infrastructure funds will be used to benefit a Justice40, NYS Opportunity zone, high poverty census tract.				
JBPU in partnership with community partners will develop an outreach campaign specifically outlining the Civil Service Waiver process, Wraparound services, and training providers in the community.	JBPU will conduct 3 culturally responsive, inclusive outreach opportunities for employment, civil service waiver, wraparound supportive services, and workforce development training opportunities.	JBPU will conduct 3 culturally responsive, inclusive outreach opportunities for employment, civil service waiver, wraparound supportive services, and workforce development training opportunities.	JBPU will conduct 3 culturally responsive, inclusive outreach opportunities for employment, civil service waiver, wraparound supportive services, and workforce development training opportunities.	JBPU will conduct 3 culturally responsive, inclusive outreach opportunities for employment, civil service waiver, wraparound supportive services, and workforce development training opportunities.

Justice 40 Initiative

The City of Jamestown is designated as a Disadvantaged Community using the Climate & Economic Justice Screening Tool (CEJST) as defined in the Justice40 Initiative. The proposed infrastructure investment will benefit the City of Jamestown, New York which is designated as an Area of Persistent Poverty, a Justice40 Community, and numerous other economic, health, and environmental designations.

City of Jamestown Census Tract	Area of Persistent Poverty ⁴	Disadvantaged Community – NYSERDA ⁵	Disadvantaged Community – NYS Climate Act ⁶	Opportunity Zone New York State ⁷	NYS DEC Potential Environmental Justice Area ⁸	FEMA Economically Disadvantaged Community ⁹
36013030100	X	X	X		X	X
36013030200	X	X	X		X	X
36013030300	X	X	X		X	X
36013030400					X	X
36013030500	X	X	X	X	X	X

⁴ Areas of Persistent Poverty: <https://maps.dot.gov/BTS/GrantProjectLocationVerification/>
⁵ NYSERDA Disadvantaged Communities: <https://www.nyserda.ny.gov/ny/disadvantaged-communities>
⁶ NYS Climate Act Disadvantaged Communities: <https://climate.ny.gov/Our-Climate-Act/Disadvantaged-Communities-Criteria/Disadvantaged-Communities-Map>
⁷ Opportunity Zone: <https://esd.ny.gov/opportunity-zones>
⁸ NYS DEC Environmental Just Areas: ArcGIS Web map of the Potential EJ Areas, as designated in the 2020 updates
⁹ FEMA Economically Disadvantaged: https://www.fema.gov/sites/default/files/documents/fema_equity-webinar-final_8-17-21.pdf

City of Jamestown Census Tract	Area of Persistent Poverty ⁴	Disadvantaged Community – NYSEDA ⁵	Disadvantaged Community – NYS Climate Act ⁶	Opportunity Zone New York State ⁷	NYS DEC Potential Environmental Justice Area ⁸	FEMA Economically Disadvantaged Community ⁹
36013030600	X	X			X	X
36013030700	X				X	X
36013030800	X				X	X

The city also has a high number of individuals living in poverty. A total of 29.5% of people within the City of Jamestown were at or below the poverty level in 2019; this is over double the NYS average of 13.0% and nearly triple the United States rate of 11.4%. Additionally, the median household income within the city in 2019 was only \$33,420, almost half of the NYS average of \$62,843. The COVID pandemic did little to improve the level of poverty in the community.

Census Tract 305 in the City of Jamestown has a poverty rate of 44% and is classified as an Opportunity Zone. The City of Jamestown has had a 44% increase in unemployment since 2018. The highest unemployment year was 2020 when the rate was 13.5%.

The proposed microgrid’s core benefits include improving the resiliency of the core electrical distribution system and the supporting array of community services that will leverage this resource such as emergency responder support, healthcare service support, public safety, vehicle fueling, and community shelter support. There are many other ancillary benefits as well. The proposed communication and control architecture of this project will enable the JBPU to demonstrate real-world solutions associated with synchronizing variable loads to generated output in real-time dynamic conditions. In addition, as markets reform, the JBPU will be positioned to participate in activities even when the system is in normal condition. The potential addition of distributed energy resources, such as solar, battery storage, and controllable load, could not only improve the number of customers served by the microgrid but could also improve JBPU’s load factor, resulting in utilization efficiency improvements, a potential to offset transmission congestion, and may also allow for cost recovery through other mechanisms and save money for the JBPU customers.

The key benefits of deploying the microgrid are a significant improvement in system robustness, reliability, resiliency, and security during emergency situations. JBPU is the load-serving entity (LSE) responsible for physically delivering electricity throughout the City of Jamestown and the surrounding communities of Celoron, Falconer, and the Town of Ellicott. Nearly half of the JBPU customers, representing more than 10,000 individuals, will be directly connected to the proposed microgrid. Because the microgrid would also serve many critical customers directly through resilient underground feeders, 100% of the JBPU service area, including all JBPU customers, will directly or indirectly benefit from the microgrid’s operation. JBPU, as the owner and operator of the microgrid, will serve the widest array of possible customers in the proposed microgrid. In an extended emergency, it is feasible that, based on the availability of the overhead feeders and generation capacity, a very high percentage of JBPU customers will be served. Significant thermal

energy also will be supplied to the microgrid's customers during islanded microgrid operation. The grant proposal includes funding for small microgrids at customer sites that are on the JBPU thermal network, ensuring that if there is a power interruption during the heating season the small microgrids can be used to power the fan/pumps that are used to distribute heat at subsidized and assisted housing locations, schools, and shelter sites.

The two primary corridors that will be serviced by the microgrid in cases of emergency are the medical and downtown areas, both of which have significant populations of low-income and elderly residents, and support services for our homeless population. In order to protect the health and welfare of these populations, it is imperative that electricity be available to service the only regional hospital within a 35-mile radius, plus critical medical and emergency communications equipment used to connect these populations with emergency medical providers and police and fire dispatchers.

The downtown corridor has a mix of small businesses and not-for-profit agencies, all of which need reliable power to maintain customer service and support. As the need for more electricity to power HVAC systems continues to increase and equipment in support of businesses and manufacturers requires more electricity, the microgrid could provide resources in both normal operating and emergency conditions. The businesses and organizations which are stakeholders in the downtown corridor understand the importance of this microgrid project and have participated in both virtual and in-person meetings and some have sent commitment and support letters that are included in this application.

The project also is within an approved and designated Brownfield Opportunity Area, Local Waterfront Revitalization Program area, and Environmental Justice Area.

As part of the western NY Snowbelt, Jamestown and the surrounding region get their fair share of cold weather. The coldest nighttime temperature occurs during the month of January, an average of 14.4°F. As the Jamestown area serves as a central hub for the western NY region beyond Buffalo, it is essential that the JBPU community continues to provide vital services such as police and fire protection, emergency room medical treatment, health care, food distribution, community shelters, vehicle fueling, snow plowing, and other essential needs during a regional or widespread outage. Considering its geographical location, extreme weather events including heavy lake effect snows that regularly occur, and the fact that the NGrid 115kV electrical transmission system in the region has had a history of causing outages that have significantly impacted all JBPU customers, the creation of an "island ready microgrid" within the JBPU service area is of societal value. Considering the unique characteristics of the JBPU infrastructure and the modest capital and operational costs needed to create such a system, the proposed microgrid represents a viable, practical, economic, and scalable solution to improve the resiliency of the energy infrastructure in the area.

With rising energy costs and the potential future strain on the grid because of the electrification of everything from building heating to transportation, the implementation of alternative,

reliable, low-cost, and emission-free solutions are needed now more than ever. The JBPU system is running at peak levels during the winter season. That time of year has significant electric heating demand and the JBPU expects the winter peak to become even more significant as electrification drives customers to install more heat pumps, electric water heating, EV chargers, clothes dryers, and other appliances. The community could potentially suffer from catastrophic consequences if electricity is lost for days as residents rely on it for heating, powering life-sustaining resources and equipment, and transportation. JBPU believes in the future of electrification but feels solutions are needed to minimize this significant risk. This proposal to create a microgrid is a starting point for that effort to ensure that the community will have warm shelters, food, transportation, and ensure essential services can be rendered during emergency conditions. This resource would benefit the entire region and especially benefit the Justice40 community.

This microgrid proposal seeks to ensure that public emergency services can move forward with the acquisition of electric vehicles knowing that these vehicles used to support critical services can be reliably charged during a grid outage. Lack of access to EV chargers that would be available during an emergency continues to be a concern for police, fire, EMS, public works, and schools. Without such infrastructure, the public sector fleets will lag in conversion to electric vehicles which has negative consequences for public health and may hinder overall public adoption. In addition, access to community electric vehicle chargers will be critical for the community wide adoption of electric vehicles, especially for those that do not have off-street parking, those that live in apartments, or those that cannot afford electric service upgrades to their homes.

Justice40 Initiative				
Milestones Year One	Milestones Year Two	Milestones Year Three	Milestones Year Four	Milestones Year Five
Collect baseline data of disadvantaged businesses in Census Tract 305 utilizing DER (small microgrids)	Detail 10% disadvantaged businesses in Census Tract 305 that would benefit from improved reliability utilizing DER (small microgrids)		Increase of 10% from year three of disadvantaged businesses in Census Tract 305 that would benefit from improved reliability utilizing DER (small microgrids)	
Gather baseline outage user data for emergency services, medical facilities, downtown businesses, schools, and social services.	Collect comparison data of outages after installation.	Reduce outages experienced by 10% after installation	Reduce outages experienced by 10% after installation	



Re: Requirement to Report Potentially Duplicative Funding

Project Title: Jamestown Board of Public Utilities Community Microgrid

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

Technical Point of Contact: Cory Allen

Business Point of Contact: Brad Bentley

Team Members / Organizations: City of Jamestown, Jamestown Public Schools, potentially the American Red Cross and other storm/disaster services

Neither the applicant or any of the team members/organizations have any other active and/or pending federal funding awards for the Jamestown Board of Public Utilities Community Microgrid Project.

Sincerely,

A handwritten signature in blue ink, appearing to read "Brad Bentley".

Brad Bentley
Authorized Representative
Jamestown Board of Public Utilities

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

Jamestown Board of Public Utilities –Community Microgrid

Addendum B - Report on Resilience Investments**Investments related to resiliency and reliability for 1/1/2020-12/13/2022**

Relays	\$350k
Substations	\$2 Million
Breakers	\$270k
Overhead and Underground Distribution	\$3.4 Million
Tree Trimming	\$1 Million
AMI/SCADA	\$2.1 Million
Generator Overhauls	\$5.6 Million
Pipeline*	\$6.9 Million/\$1.3 Million
Total:	\$21.6 Million/\$16 Million

* Please see details on pipeline investment

Overall, JBPU continuously invests in its systems to ensure reliability. It is a core part of its mission which is to provide environmentally sound, efficient, cost effective electric, water, solid waste, wastewater and district heating utility services while actively encouraging the economic growth and development of its community. Although JBPU does an excellent job, there is always room for improvement, and this microgrid project is an investment in reliability that would protect JBPU's community from issues that would otherwise be out of its control to manage (transmission and regional problems).

Relays - Over the past decade the BPU has been reasonably aggressive when it comes to updating/modernizing circuit protection schemes. Within the last 3 years alone, approximately 50 relays have been installed to update either obsolete models or to add more resilient “smart” protection schemes to our arsenal. JBPU is now able to collect and monitor a myriad of circuit/relay data in real time. This provides operators and supervisors instant information and enabling faster reactions; JBPU outage times have been further reduced as a result. The JBPU has invested nearly \$350,000 in the last three years into relay upgrades and testing services and has performed the vast majority of engineering and installation in house. The JBPU roughly budgets \$120,000 a year for relay related upgrades and will continue to do so for the foreseeable future based on our current grid system.

Substations - The JBPU has been routinely modernizing its electric substation in recent years through complete station overhauls and even brand-new location builds; all with resiliency in mind. Through modernization efforts the JBPU has been able to scale down its substations whilst also adding more resiliency; there are currently around 10 substations in the system. One site in the last 3 years has been completely dismantled and built new from the ground up. This project was roughly a \$2 million investment from the JBPU. There are no immediate 3-year plans for all-

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

Jamestown Board of Public Utilities –Community Microgrid

encompassing substation projects, but the JBPU does budget \$100k or so per year for smaller capital substation projects and a replacement of two substation transformers (preventative due to life risk but we will upsize as well as to enable load growth for electrification) is budgeted at \$1.2 Million.

Breakers - The JBPU is always looking for cost effective updates to every part of our electric system. In the past two years, the JBPU has replaced older style switchgear circuit breakers for modern style retrofitted models. These new models allow us to re-use existing switchgear equipment, and they also provide many new benefits. These benefits include significantly lower maintenance, faster tripping times during a fault event, greater reliability, and cost-effectiveness. The JBPU has invested roughly \$270k for two substations so far. JBPU plans to do significant maintenance on its 115kV circuit breakers in 2023 including preemptive seal replacements (to prevent SF6 leaks) and hydraulic system rebuilds.

Overhead and Underground distribution – The JBPU constantly upgrades and replaces distribution equipment, both overhead and underground. Equipment is generally replaced due to age vs. expected life, outcomes of annual inspections (all equipment is tested for stray voltage annually and every asset undergoes a full inspection every 5 years, so we do detail inspect about 20% of our entire system each year), and outage metrics.

Tree trimming - JBPU continually works to maintain overhead lines through a tree trimming program. As trees are a continuous reliability concern, JBPU employs a third-party contractor who works year-round to maintain the utility right of way to protect its distribution assets and minimize outages resulting from trees. This program is a significant investment for the JBPU and has totaled over \$1 million over the last three years and JBPU has plans to continue this program over the next three years with a budget of \$400k/year.

AMI/SCADA - JBPU has committed to a significant investment in advanced metering infrastructure (AMI) and is currently most of the way through a multi-year plan to deploy advanced metering to each customer it serves. The AMI has already identified overloaded transformers, high temperature meter sockets, low voltage and high voltage concerns and other issues. JBPU is utilizing this information to guide work to ensure the system is safe and reliable. The AMI also reports outages enabling crews to be deployed to the correct location quickly to remedy any issues. The JBPU has also invested in a new SCADA system that will combine real time reporting as well as system modeling to enable JBPU to run scenarios before switching, installing, or changing equipment to reduce the chance that operations and maintenance cause a problem, enable operators to see issues as they occur and deploy appropriate resources, and enable better system planning. The JBPU has ordered the last batch of AMI meters in the project, which will ensure all electric meters are able to communicate with the JBPU systems. The JBPU is working on the SCADA conversion, digital twin, and meter data management system upgrades which is taking place now and is expected to be complete in the next 2 years.

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

Jamestown Board of Public Utilities –Community Microgrid

Pipeline – The JBPU purchased a natural gas pipeline and compressor station (which was procured to ensure reliability since the prior owner was not properly maintaining the system and JBPU was concerned its reliability would not be sufficient to protect its community). As this was a very large investment and not one JBPU could make every three years JBPU hopes it will get consideration even though it was just over 3 years ago (JBPU took ownership 1/1/2019 for \$5.4 Million) and it was unclear what the 3-year reporting period should be. JBPU in collecting initial data choose 1/1/2019-1/1/2023, however had it chosen 1/1/2019-1/1/2022 (JBPU's last audited financial years) this would have been included while the other numbers in this report would change, but not significantly. This investment secures the natural gas transportation system that would be used for this proposed microgrid project. JBPU also has spent money on this pipeline since taking ownership to ensure continued reliability including an annual contract to maintain the pipeline and right of way (\$231k/year), reburying an exposed section (\$169k), installation of monitoring equipment (\$55k), repainting of the line (ensure coating protects pipe from corrosion and to make it stand out less to decrease risk of 3rd party vandalism/sabotage as well, \$90k), installed a bypass valve (to enable gas to flow if compressor were to fail to increase reliability of fuel supply and lower emissions, \$109k), compressor overhaul (to ensure reliable compressor operations, \$47k), provisions for onsite inventory (\$10k). Overall, we have made a significant investment of over \$6.5 Million since 2019 to ensure the reliable supply of natural gas for our electric and thermal operations (note that we do not distribute natural gas to end users, the electric and district heating divisions use this asset exclusively).

Generator overhauls – The JBPU believes turbines and generators are vital pieces of equipment that require upgrades and overhauls to provide reliable generation which is key to reliable electric service. As such JBPU invests regularly in overhauls of its turbines and generators and over the last three years has invested over \$5.6 million in overhauls of its steam turbines and its gas turbine. These overhauls included new investments to ensure even more reliable operations including a steam separator (to remove potential debris that had caused issues in the past), new vibration monitoring systems, new combustor, and improved blades. Through investments like these, the power plant operates with a high reliability and boasts excellent derating factors (0% for the steam plant for Winter '23 and 0.55% for the gas turbine for the same period). JBPU has budgeted additional overhaul work for its generation during the next three years of over \$4.7 Million. Additional projects in the power plant are also budgeted for the next three years, one of which is an energy storage project budgeted at \$2Million, which would go toward JBPU match if awarded (if not awarded, JBPU would still progress a much smaller but less impactful storage system without microgrid functionality)

SCHEDULE 1. IDENTIFICATION

SURVEY CONTACTS: Persons to contact with question about this form

RESPONSE DUE DATE: Please submit by April 30th following the close of calendar year

Contact Brad Bentley
 Title: Energy and Gas Resources Manager

REPORT FOR: Jamestown Board of Public Util 9645

REPORTING PERIOD: 2021

Phone: (716) 661-1620 FAX: Email: bbentley@jamestownbpu.com

Logged By / Date:

Supervisor David Leathers
 Title: General Manager

Logged In: Receipt Date (mm/dd/yyyy):

Phone: (716) 661-1670 FAX: (716) 661-1675 Email: dleathers@jamestownbpu.com

1	Legal Name of Industry Participant	Jamestown Board of Public Util	Submission Status/Date:	<input type="text" value="Submitted"/>	<input type="text" value="03/23/2022"/>
2	Current Address of Principal Business Office	PO Box 70092 Steele Street Jamestown NY 14702			
3	Preparer's Legal Name Operator (if different than line 1)				
4	Current Address of Preparer's Office (if different than line 2)				
5	Respondent Type (Check One)	<input type="checkbox"/> Federal <input type="checkbox"/> Political Subdivision <input type="checkbox"/> Municipal Marketing Authority <input type="checkbox"/> Cooperative <input type="checkbox"/> Independent Power Producer or Qualifying Facility <input type="checkbox"/> State <input checked="" type="checkbox"/> Municipal <input type="checkbox"/> Investor-Owned <input type="checkbox"/> Retail Power Marketer (or Energy Service Provider) <input type="checkbox"/> Community Choice Aggregator <input type="checkbox"/> Transmission <input type="checkbox"/> Behind the Meter <input type="checkbox"/> Wholesale Power Marketer <input type="checkbox"/> DSM Administrator			

For questions or additional information about the Form EIA-861 contact the Survey Manager: Fax: (202) 287 - 1938 Email: EIA-861@eia.gov
Stephen Scott Phone: (202) 586-5140 Email: stephen.scott@eia.gov

REPORT FOR: Jamestown Board of Public Util 9645
REPORT PERIOD ENDING: 2021

SCHEDULE 2. PART A. GENERAL INFORMATION

LINE NO.				
1	Regional North American Electric Reliability Council (Not applicable for power marketers)	<input type="checkbox"/> TRE (formerly ERCOT) <input type="checkbox"/> FRCC <input type="checkbox"/> MRO	<input checked="" type="checkbox"/> NPCC <input type="checkbox"/> RFC (formerly ECAR, MAIN. MAAC) <input type="checkbox"/> SERC	<input type="checkbox"/> SPP <input type="checkbox"/> WECC
2	Name of RTO or ISO	<input type="checkbox"/> California ISO <input type="checkbox"/> Electric Reliability Council of Texas <input type="checkbox"/> PJM Interconnection <input checked="" type="checkbox"/> New York ISO	<input type="checkbox"/> Southwest Power Pool <input type="checkbox"/> Midwest ISO <input type="checkbox"/> ISO New England <input type="checkbox"/> None	
3	(For EIA Use Only) Identify the North American Electric Reliability Council where you are physically located	NPCC		
4	Did Your Company Operate Generating Plants(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
5	Identify The Activities Your Company Was Engaged In During The Year (Check appropriate activities)	<input checked="" type="checkbox"/> Generation from company owned plant <input type="checkbox"/> Transmission <input checked="" type="checkbox"/> Buying transmission services on other electrical system <input checked="" type="checkbox"/> Distribution using owned/leased electric wires	<input type="checkbox"/> Buying distribution on other electrical system <input type="checkbox"/> Wholesale power marketing <input type="checkbox"/> Retail power marketing <input checked="" type="checkbox"/> Bundled Services (electricity plus other services such as gas, water, etc. in addition to electric service))	
6	Highest Hourly Electrical Peak System Demand	Summer (Megawatts) Winter (Megawatts)	74.7 76.2	Prior Year Prior Year 80.7 77.5
7	Did Your Company Operate Alternative-Fueled Vehicles During the Year? Does Your Company Plan to Operate Such Vehicles During the Coming Year?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
	If "Yes", Please Provide Additional Contact Information	Name: Dan Reynolds Title: Energy Efficiency Coordinator Telephone: 716 - 661 - 1646 Fax: - - Email: dreynolds@jamestownbpu.com		

REPORT FOR: Jamestown Board of Public Util

9645

REPORT PERIOD ENDING: 2021

SCHEDULE 2. PART B. ENERGY SOURCES AND DISPOSITION

	SOURCE OF ENERGY	MEGAWATTHOURS		DISPOSITION OF ENERGY	MEGAWATTHOURS
1	Net Generation	60,215	11	Sales to Ultimate Consumers	402,546
2	Purchases from Electricity Suppliers	469,042	12	Sales For Resale	102,332
3	Exchanged Received (In)		13	Energy Furnished Without Charge	
4	Exchanged Delivered (Out)		14	Energy Consumed By Respondent Without Charge	1,219
5	Exchanged Net				
6	Wheeled Received (In)				
7	Wheeled Delivered (Out)		15	Total Energy Losses (positive number)	18,635
8	Wheeled Net				
9	Transmission by Others Losses (Negative Number)	-4,525			
10	Total Sources (sum of lines 1, 2, 5, 8 & 9)	524,732	16	Total Disposition (sum of lines 11, 12, 13, 14, & 15)	524,732

REPORT FOR: Jamestown Board of Public Util

9645

REPORT PERIOD ENDING: 2021

SCHEDULE 2. PART C. ELECTRIC OPERATING REVENUE

LINE NO.	TYPE OF OPERATING REVENUE	(THOUSAND DOLLARS to the nearest 0.1)
1	Electrical Operating Revenue From Sales to Ultimate Customers (Schedule 4: Parts A, B, and D) \$	34,531.5
2	Revenue From Unbundled (Delivery) Customers (Schedule 4: Part C) \$.0
3	Electric Operating Revenue from Sales for Resale \$	3,600.6
4	Electric Credits/Other Adjustments \$.0
5	Revenue from Transmission \$.0
6	Other Electric Operating Revenue \$	2,398.0
7	Total Electric Operating Revenue (sum of lines 1, 2, 3, 4, 5 and 6) \$	40,530.1

REPORT FOR: Jamestown Board of Public Util

9645

REPORT PERIOD ENDING: 2021

**SCHEDULE 3. PART A.
 DISTRIBUTION SYSTEM RELIABILITY DATA**

INSTRUCTIONS: For the purpose of this schedule, a distribution circuit is any circuit with a voltage of 34kV or below that emanate from a substation and that serves end use customers.

State/Territory NY

1	Total Number of Distribution Circuits	51.0
2	Number of Distribution Circuits that employ voltage/VAR optimization (VVO)	51.0

REPORT FOR: Jamestown Board of Public Util

REPORT PERIOD ENDING:

**SCHEDULE 3. PART B.
 DISTRIBUTION SYSTEM RELIABILITY DATA**

Who is required to complete this schedule?

This schedule collects System Average Interruption Frequency Index (SAIFI) and System Average Interruption Duration Index (SAIDI) statistics. If your organization does not compute these indexes, answer 'no' to Question 1 and then skip to Schedule 4A. You do not have to complete any other part of this schedule 3B or 3C.

Should you complete Part B or Part C?

If your organization computes the SAIFI and SAIDI indexes and determines Major Event Days using the IEEE 1366-2003 or the IEEE 1366-2012 standard, answer 'YES' to Questions 1 and 2, and complete Part B. Then skip to Schedule 4A. (You do not complete Schedule 3, Part C.)

If your organization does not use the IEEE 1366-2003 or the IEEE 1366-2012 standard but calculates SAIDI and SAIFI indexes via other method, answer 'yes' to question 1 and 'no' to question 2 and complete Part C. Then go to Schedule 4A.

- 1 Do you calculate SAIDI and SAIFI by any method? If Yes, go to Question 2. If No, go to Schedule 4, Part A. Yes No
- 2 Do you calculate SAIDI and SAIFI and determine Major Event Days using the IEEE1366-2003 standard or IEEE-2012 standard? If Yes, complete Part B. If No, go to complete Part C. Yes No

Part B: SAIDI and SAIFI in accordance with IEEE 1366-2003 standard or IEEE 1366-2012 standard

State

3a. SAIDI value including Major Event days

3b. SAIDI value excluding Major Event days

4 SAIDI value including Major Event days minus loss of supply

5a. SAIFI value including Major Event days

5b. SAIFI value excluding Major Event days

6. SAIFI value including Major Event days minus loss of supply

7. Total number of customers used in these calculations

8. What is the highest voltage that you consider part of the distribution system, as opposed to the supply system? (kV)

9. Do you receive information about a customer outage in advance of a customer reporting it? Yes No

Thank You for completing this part. Skip Part C and go directly to Schedule 4 Part A.

REPORT FOR: Jamestown Board of Public Util

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REPORT PERIOD ENDING: 2021

Part C: SAIDI and SAIFI calculated by other methods

State

10a. SAIDI value including Major Events

10b. SAIDI value excluding Major Events

11a. SAIFI value including Major Events

11b. SAIFI value excluding Major Events

12. Total number of customers used in these calculations

13. Do you include inactive accounts?

Yes

No

14. How do you define momentary interruptions

Less than 1 min.

Less than 5 min.

Other

15. What is the highest voltage that you consider part of the distribution system, as opposed to the supply system?

kv

16. Is information about customer outages recorded automatically?

Yes

No

REPORT FOR: Jamestown Board of Public Util

9645

REPORT PERIOD ENDING: 2021

SCHEDULE 4. PART A. SALES TO ULTIMATE CUSTOMERS. FULL SERVICE - ENERGY AND DELIVERY SERVICE (BUNDLED)

	RESIDENTIAL (a)	COMMERCIAL (b)	INDUSTRIAL (c)	TRANSPORTATION (d)	TOTAL (e)
State NY Balancing Authority	13501				
Revenue (thousand dollars)	13,864.3	13,718.5	6,948.7	0.0	34,531.5
Megawatthours	159,248	152,420	90,878	0	402,546
Number of Customers	16,146	2,221	133	0	18,500
Are your rates decoupled?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
If the answer is YES, is the revenue adjustment automatic or does it require a rate-making proceeding?	<input type="checkbox"/> N automatic	<input type="checkbox"/> N automatic	<input type="checkbox"/> N automatic	<input type="checkbox"/> N automatic	
	<input type="checkbox"/> N proceeding	<input type="checkbox"/> N proceeding	<input type="checkbox"/> N proceeding	<input type="checkbox"/> N proceeding	
Cents/Kwh	8.706	9.000	7.646		8.578

State

Revenue (thousand dollars)					
Megawatthours					
Number of Customers					
Are your rates decoupled?					
If the answer is YES, is the revenue adjustment automatic or does it require a rate-making proceeding?					
Cents/Kwh					

Total

Revenue (thousand dollars)	13,864.3	13,718.5	6,948.7	0.0	34,531.5
Megawatthours	159,248	152,420	90,878	0	402,546
Number of Customers	16,146	2,221	133	0	18,500

REPORT FOR: Jamestown Board of Public Util 9645

REPORT PERIOD ENDING: 2021

SCHEDULE 4. PART B. SALES TO ULTIMATE CUSTOMERS. ENERGY -- ONLY SERVICE (WITHOUT DELIVERY SERVICE)

	RESIDENTIAL (a)	COMMERCIAL (b)	INDUSTRIAL (c)	TRANSPORTATION (d)	TOTAL (e)
State	Balancing Authority				
Revenue (thousand dollars)					
Megawatthours					
Number of Customers					
Cents/Kwh					
State					
Revenue (thousand dollars)					
Megawatthours					
Number of Customers					
Cents/Kwh					

Total
Revenue (thousand dollars)
Megawatthours
Number of Customers

REPORT FOR: Jamestown Board of Public Util

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REPORT PERIOD ENDING: 2021

SCHEDULE 4. PART C. SALES TO ULTIMATE CUSTOMERS. DELIVERY -- ONLY SERVICE (AND OTHER RELATED CHARGES)

	RESIDENTIAL (a)	COMMERCIAL (b)	INDUSTRIAL (c)	TRANSPORTATION (d)	TOTAL (e)
State	Balancing Authority				
Revenue (thousand dollars)					
Megawatthours					
Number of Customers					
Cents/Kwh					
State					
Revenue (thousand dollars)					
Megawatthours					
Number of Customers					
Cents/Kwh					

Total

Revenue (thousand dollars)

Megawatthours

Number of Customers

REPORT FOR: Jamestown Board of Public Util

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REPORT PERIOD ENDING: 2021

SCHEDULE 4. PART D. BUNDLED SERVICE BY RETAIL ENERGY PROVIDERS AND POWER MARKETERS

	RESIDENTIAL (a)	COMMERCIAL (b)	INDUSTRIAL (c)	TRANSPORTATION (d)	TOTAL (e)
State	Balancing Authority				
Revenue (thousand dollars)					
Megawatthours					
Number of Customers					
Cents/Kwh					
State					
Revenue (thousand dollars)					
Megawatthours					
Number of Customers					
Cents/Kwh					

Total
Revenue (thousand dollars)
Megawatthours
Number of Customers

REPORT FOR: Jamestown Board of Public Util 9645

REPORTING PERIOD ENDING: 2021

SCHEDULE 5. MERGERS and/or ACQUISITIONS

Mergers and/or acquisitions during the reporting month

If Yes, Provide:

Date of Merger or Acquisition

Company merged with or acquired

Name of new parent company

Address

City

State, Zip

New Contact Name

Telephone No.

Email address

REPORT FOR: Jamestown Board of Public Util

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REPORT PERIOD ENDING: 2021

SCHEDULE 6. PART A. ENERGY EFFICIENCY PROGRAMS
Adjusted Gross Energy and Demand Savings -- Energy Efficiency

If you have a non utility DSM administrator that reports your DSM activity for you please select them from the list

State/Territory	NY	Balancing Authority				Total
		RESIDENTIAL	COMMERCIAL	INDUSTRIAL	TRANS	
		(a)	(b)	(c)	(d)	(e)
Reporting Year Incremental Annual Savings						
1	Energy Savings (MWh)	94.272				94.272
2	Peak Demand Savings (MW)	0.001				0.001
Increment Life Cycle Savings						
3	Energy Savings (MWh)	9942.720				9,942.720
4	Peake Demand Savings (MW)	0.001				0.001
Reporting Year Incremental Costs						
5	Customer Incentives	56.511				56.511
6	All other costs	5.705				5.705
Incremental Life Cycle Costs						
7	Customer Incentives	56.511				56.511
8	All other costs	5.705				5.705
Weighted Average Life for Portfolio (Years) - Use Spreadsheet to Calculate						
9	Weighted Average Life	10.000				10.000

Please provide website address to your energy efficiency program reports:

www.jamestownbpu.com/167/Rebate-Energy-Efficienc

REPORT FOR: Jamestown Board of Public Util

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REPORT PERIOD ENDING: 2021

SCHEDULE 6. PART A. ENERGY EFFICIENCY PROGRAMS

DMS Administration only. List all utilities that you provide service for.

State

Utility Name

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Schedule 6. Part B. Yearly Energy and Demand Savings - Demand Response

Reporting Year Savings

State/Territory	Balancing Authority	(a)	(b)	(c)	(d)	(e)
		Residential	Commercial	Industrial	Transportation	Total
1	Number of Customers Enrolled					
2	Energy Savings (Mwh)					
3	Potential Peak Demand Savings (MW)					
4	Actual Peak Demand Savings (MW)					

Schedule 6. Part B. Program Cost -- Demand Response (Thousand Dollars)

Reporting Year Costs

5	Customer Incentives	
6	All other costs	
7	If you have a demand side management (DMS) program for grid-interactive water heaters (as defined by DOE), how many grid interactive water heaters were added to your program this year?	

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SCHEDULE 6. PART C. DYNAMIC PRICING PROGRAMS

Number of Customers

INSTRUCTIONS: Report the number of customers participating in dynamic pricing programs, e.g. Time-of-Use-Pricing, Real-Time-Pricing, Variable Peak Pricing, Critical Peak Pricing Programs.

State/Territory

Balancing Authority

Residential
(a)

Commercial
(b)

Industrial
(c)

Transportatio
(d)

Total
(e)

1 Number of Customers enrolled in dynamic pricing programs, by customer class

Types of Dynamic Pricing Programs

INSTRUCTIONS: For each customer class, mark the types of dynamic pricing programs in which the customers are participating.

Residential
(a)

Commercial
(b)

Industrial
(c)

Transportatio
(d)

2 Time-of-Use Pricing

Yes No

Yes No

Yes No

Yes No

3 Real-Time Pricing

Yes No

Yes No

Yes No

Yes No

4 Variable Peak Pricing

Yes No

Yes No

Yes No

Yes No

5 Critical Peak Pricing

Yes No

Yes No

Yes No

Yes No

6 Critical Peak Rebate

Yes No

Yes No

Yes No

Yes No

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 REPORT PERIOD ENDING: 2021

SCHEDULE 6. PART D. ADVANCED METERING

Only customers from schedule 4A and 4C need to be reported on this schedule.
 AMR- data transmitted one-way, to the utility.
 AMI- data transmitted in both directions, to the utility and customer

State	NY	Balancing Authority	13501				Total
			Residential (a)	Commercial (b)	Industrial (c)	Transportation (d)	(e)
1		Number of AMR Meters	9,365	730	23	0	10,118
2		Number of AMI Meters	6,782	1,475	109	0	8,366
3		Number of AMI Meters with home area network (HAN) gateway enabled	0	0	0	0	0
4		Number of non AMR/AMI Meters	56	16	1	0	73
5		Total Number of Meters (All Types), line 1+2+4	16,203	2,221	133	0	18,557
6		Energy Served Through AMI	35,371	26,092	80,627	0	142,090
7		Number of Customers able to access daily energy usage through a webportal or other electronic means	0	0	0	0	0
8		Number of customers with direct load control	0	0	0	0	0

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SCHEDULE 7. PART A. NET METERING

Net Metering programs allow customers to sell excess power they generated back to the electrical grid to offset consumption. Provide the information about programs by State balancing authority, customer class, and technology for all net metering applications.

State	Balancing Authority	Residential (a)	Commercial (b)	Industrial (c)	Transportation (d)	Total (e)
	Net Metering Installed Capacity (MW)					
	Net Metering Installations					
	Storage Installed Capacity (MW)					
	Storage Installations					
Photovoltaic	Virtual NM Installed Capacity (1 MW and greater)					
	Virtual NM Customers (1 MW and greater)					
	Virtual NM Installed Capacity (less than 1MW)					
	Virtual NM Customers (less than 1MW)					
	If Available, Enter the Electric Energy Sold Back to the Utility (MWh)					
	Installed Net Metering Capacity (MW)					
Wind	Number of Net Metering Customers					
	If Available, Enter the Electric Energy Sold Back to the Utility (MWh)					
	Installed Net Metering Capacity (MW)					
Other	Number of Net Metering Customers					
	If Available, Enter the Electric Energy Sold Back to the Utility (MWh)					
	Installed Net Metering Capacity (MW)					
Total	Number of Net Metering Customers					
	If Available, Enter the Electric Energy Sold Back to the Utility (MWh)					
Grand Total All States	Net Metering Installed Capacity (MW)					
	Net Metering Installations/customers					
	If Available, Enter the Electric Energy Sold Back to the Utility (MWh)					

REPORT FOR Jamestown Board of Public Util

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SCHEDULE 7. PART B. NON NET-METERED DISTRIBUTED GENERATORS

If your company owns and/or operates a distribution system, please report information on known distributed generation (grid connected/synchronized) capacity on the system. Such capacity must be utility or customer-owned

NUMBER AND CAPACITY

State	Balancing Authority	< 1MW
-------	---------------------	-------

- | | |
|---------------------------------|--|
| 1. Number of generators | 3. Capacity that consists of backup-only units |
| 2. Total combined capacity (MW) | 4. Capacity owned by respondent |

Capacity by Technology and Sector (MW)

	Residential	Commercial	Industrial	Transportation	Direct Connected	Total
5. Internal combustion						
6. Combustion turbine(s)						
7. Steam turbine(s)						
8. Fuel Cell(s)						
9. Hydroelectric						
10. Photovoltaic						
11. Storage						
12. Wind turbine(s)						
13. Other						
14. Total						

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SCHEDULE 8. DISTRIBUTION SYSTEM INFORMATION

If your company owns a distribution system, please identify the names of the counties (parish, etc.) by State in which the electric wire/equipment are located.

LINE NO.	STATE (US Postal Abbreviation) (a)	COUNTY (Parish, Etc.) (b)	LINE NO.	STATE (US Postal Abbreviation) (a)	COUNTY (Parish, Etc.) (b)
1	NY - Chautauqua				

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SCHEDULE 9. COMMENTS

SCHEDULE	PART	LINE NO.	COLUMN	NOTES
(a)	(b)	(c)	(d)	(e)

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EIA861 ERROR LOG

Part	State	BA ID	Error No.	Error Description/Override Comment	Type	Override
6	A	NY	13501	611 Commercial Reporting Year Incremental Annual Savings (lines 1 and 2) were reported last year but not this year. If there are no Energy Savings this year, please provide a brief explanation. No commerical incentives were offered in 2021	W	

APPENDIX F – PROJECT DESCRIPTION AND ASSURANCES DOCUMENT TEMPLATE (PDAD)

Project title: Jamestown Community Microgrid

Applicant Name: Jamestown Board of Public Utilities

Applicant Address: 92 Steele St, Jamestown, NY 14701

Names of all team member organizations (if applicable): Jamestown Board of Public Utilities

Principal Investigator (Name, Address if different than Applicant's, Phone Number, E-mail):

Cory Allen, 716-661-1682, callen@jamestownbpu.com

Business Point of Contact (Name, Address if different than Applicant's, Phone Number, E-mail):

Brad Bentley, 716-661-1620, bbentley@jamestownbpu.com

Include any statements regarding confidentiality.

N/A

Federal Share: \$17,377,945

Cost Share: \$5,792,648

Total Estimated Project Cost: \$23,170,593

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))

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:

Jamestown Board of Public Utilities is a municipal electric utility who owns and operates distribution and generation

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: \$21.6 Million

Time Period for Resilience Investments: 1/1/2020-12/13/2022

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 IJIA 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: David Leathers

Address: 92 Steele St Jamestown NY 14701

Phone: 716-661-1660

E-mail: dleathers@jamestownbpu.com

Item 8: Signature of Authorized Organizational Representative (AOR)

A handwritten signature in black ink, appearing to read "David Leathers", is written over a solid black horizontal line. A small black square is positioned to the right of the signature.