

A. Cover Page

Railbelt Innovative Resiliency Project (RIR)

Topic Area 3: Grid Innovation

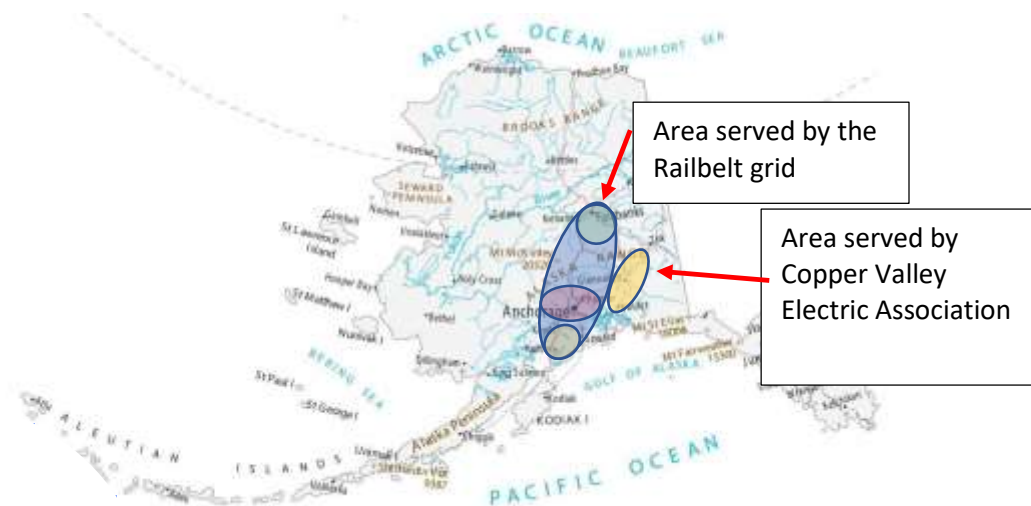
Applicant: The Alaska Energy Authority representing the State of Alaska

Technical and Business Point of Contact: Curtis Thayer, Executive Director, Alaska Energy Authority

The Alaska Energy Authority and Railbelt utilities are partners in this project as collaborative decision makers representing all the primary transmission owners and operators of Alaska's largest electrical grid (the Railbelt). The project partners (the Team) are:

1. The Alaska Energy Authority (AEA)
2. Chugach Electric Association Inc, a Central Region Cooperative (CEA)
3. Golden Valley Electric Association Inc., a Northern Region Cooperative (GVEA)
4. Homer Electric Association Inc., a Southern Region Cooperative (HEA)
5. Matanuska Electric Association Inc., a Central Region Cooperative (MEA)
6. The City of Seward, Alaska, dba Seward Electric System, a Southern Region Municipal Utility (SES)
7. The Regulatory Commission of Alaska (RCA) is participating as a team member, in an advisory and regulatory role, as permitted by their statutory authority and restrictions.

Project Location: All three regions (Northern, Central, and Southern) of the Alaska Railbelt electrical grid and the Eastern Region¹.



¹ Copper Valley Electric Association serves the Eastern Region and is a stakeholder knowledgeable about this application but is not a project team member.

B. Project overview

B.1 Background

Vision and Opportunity

Alaska and the nation are at a critical transition point with a once-in-a-generation opportunity to build resiliency and develop a fuel-diverse, low-carbon economy, by investing in essential electrical infrastructure. The state's largest, but electrically islanded, grid serves over 75% of the state's population including diverse and underserved communities, primary commerce and shipping centers, strategic military bases, and access areas for key mineral deposits. However, due to the relatively low population to share in costs, the electric system does not meet the minimum standards of the Lower 48 states. This deficiency limits the grid's resiliency and undermines the ability to usher in a clean energy future.

At this intersection, the collective mission of the State of Alaska, and the interconnected Railbelt electric utilities, is to build a resilient, clean, smart, and low-cost electrical grid. This grid must support a fuel-diverse energy landscape that drives sustainable economic development in Alaska and ensures a cost-effective delivery of energy to Railbelt consumers and beyond. The Railbelt utilities and State share a vision: a collaborative future in the Railbelt in which our communities come together and share resources to strengthen and build a smart, clean electrical grid that promises our residents, our national defense infrastructure, and communities adjacent to the Railbelt access to clean, low-cost energy from any source.

An innovative team has been assembled to manage the project consisting of relevant decision makers in the region: Alaska Energy Authority (AEA) representing the State of Alaska, Regulatory Commission of Alaska (RCA), and five electric utilities that make up the Railbelt electric grid. The team will work under a structure like the Bradley Lake Project Management Committee (BPMC), an organization with a 32-year history of successful project development and management.

The Railbelt Innovative Resiliency Project (RIR) will construct new transmission lines parallel to the existing single regional ties and provide a looped transmission feed to the DOD ground-based missile defense facility at Fort Greeley and interconnect the currently islanded Copper Valley Electric Association with the Railbelt grid. The Project will incorporate a High Voltage Direct Current (HVDC) submarine cable installed in a challenging marine environment. This cable circuit will require significant innovation which is more fully described later in this document.

Alaskans are enthusiastic about funding opportunities to rise to their unique energy challenges. A recent Op-Ed in the Anchorage Daily News, co-written by Alaska Governor Mike Dunleavy and Doug Tansy, business manager for International Brotherhood of Electrical Workers No. 1547, highlights this intent: "Right now, we have historic alignment of the players involved. Utilities, the state of Alaska, and labor are working together in a way that has not been seen in our lifetimes to build a reliable, resilient, and efficient grid for future families and business owners. Now is the time for all the players to combine efforts and secure this investment for Alaskans."

The total estimated cost for the construction of the line segments and associated station facilities proposed in this funding cycle is approximately \$822.7M. In this application we are requesting a federal grant of \$411.4M. We anticipate an eight-year project timeframe. The State of Alaska, and the Railbelt utilities are committed to upgrading the Railbelt transmission grid. On December 2, 2022, the BPMC, through AEA, closed on a bond package for \$166M, 65% of which will be dedicated to match federal aid for transmission reconstruction and 35% to three-regional grid

stabilization battery energy storage systems (BESS), one of which is currently in service and two of which are included in this grant application. This funding will begin work on the Grid Modernization and Resiliency Plan (GMRP), but without Federal and State assistance it cannot be completed in a reasonable time frame. We are seeking State funding assistance² to help close the gap between utility funding and federal assistance.^{3 4}

History

The Railbelt electric grid is unique in North America as it is technically a fully functioning long-distance electrical grid on a very small scale. The Railbelt is characterized by three load-generation regions with four load-balancing areas. These load-generation concentrations, known as the Northern Region (Fairbanks-Delta Junction), the Central Region (Anchorage-MatSu), and Southern Region (the Kenai Peninsula), are tied together with two long transmission lines operating at 115kV and 138KV.

The grid provides electricity to approximately 75% of the state's residents and generates 80% of the electricity in Alaska. It extends over 700 miles from the Bradley Lake Project, located at the

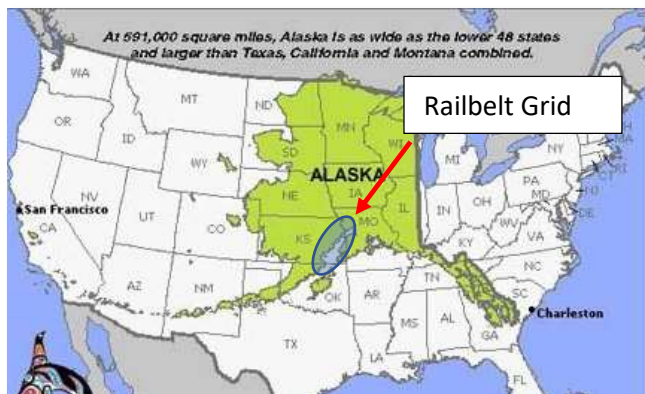


Figure 1: Alaska's Relative Size

head of Kachemak Bay near Homer, Alaska, in the Southern Region, to Delta Junction in Interior Alaska, roughly the distance from Washington, DC to Atlanta, GA, as depicted in figure 1. The grid transverses inhospitable subarctic mountainous terrain and the Cook Inlet with its tremendous tides and currents.

The region is laced with highly active seismic zones and is subject to volcanic eruptions, forest fires, flooding, and fierce annual winter storms. The grid's assets vary

from high voltage (138 kV and 230 kV) submarine cable crossings in Cook Inlet⁵ to remote "helicopter/riverboat-access-only" river crossings and numerous transmission structures well above 2000 feet (sub-arctic).

Unlike numerous areas in the contiguous lower forty-eight states, the Railbelt has received minimal federal investment in grid development. The Eklutna Hydroelectric Project, initially constructed in the 1950s, was the *last* major federal project in the Railbelt that included a transmission line component. This project was rebuilt by the Bureau of Reclamation's Alaska Power Administration after the 1964 "Good Friday" Earthquake and sold by the Federal government to Central Region utilities in the early 1990s.

² The Governor has submitted legislation to establish a funding agency for the purpose of energy related projects.

³ State matching funding is subject to Executive branch and Legislative approval. Utility funding is subject to Cooperative and Municipal governing Board approval.

⁴ Given the duration of this project, and if selected for award, during the grant negotiation process the Team will seek an inflation adjustment clause, based on actual inflation.

⁵ Cook Inlet is a silt laden 180-mile inlet reaching from Knik Arm to the Gulf of Alaska. The Inlet has the fourth highest tidal range in the world at 35 feet and contains an endangered subspecies of the Beluga Whale.

Due to the high cost of transmission lines, the regions are moderately interconnected, primarily at 69kV, 115kV, 138KV, 230kV. A tight power pool operates in the Central region, and an active economy energy market exists between regions but is severely limited by transmission constraints. There is no formal interconnection queue. A reserve-sharing pool exists between all three regions. Historically, due to weak interconnections the regions have planned for capacity separately. The Railbelt grid is technically characterized as "transient stability limited," with machines under dynamic stress swinging against other machines within the region; and with regions swinging against each other across the light interregional interconnections. The grid is susceptible to and has experienced large-scale⁶ small-signal instability oscillations. Voltage stability, which varies from marginal to good depending on the specific area, has been improved with the addition of six static VAR compensators at critical locations. The Railbelt grid operates under a subset of North American Electric Reliability Corporation (NERC) standards modified to account for the scale and nature of the interconnection (the grid's system bias is variable and ranges from 3-10 MW/.1 hertz). The grid has a sophisticated under-frequency load shed scheme which sheds load to match generation in four stages with varying time delays and, in some cases, considering frequency rate-of-change. Traditional day-ahead and real-time security constrained economic dispatch are run in each LBA with net interchange, and frequency monitored and managed to NERC CPS 1 and 2. Dynamic events on the grid occur and resolve very quickly (2-10 seconds) when compared with the much larger North American grids which resolve in tens of minutes. The grid's peak demand is roughly 750 MW compared to ERCOT's peak demand of 85,000 MW. The grid's annual energy consumption is approximately 4,500 GWH compared to ERCOT at 339,000 GWH.

The Railbelt's Grid Modernization Resiliency Plan (GMRP)

Today, the broader energy landscape in Alaska and across the world is being reshaped by multiple change drivers. Geopolitical shifts are dramatically altering global energy markets. Decarbonization policies and technological advancements, shaped by increasingly dramatic climate change, are both the result of and contributor to a shift in focus on energy and the environment. Regionally, uncertainty around Cook Inlet natural gas and broader fuel supply issues for utility companies is a critical – *and shared* – challenge looming on the near-term horizon. The Railbelt's weakly interconnected grid is inadequate to meet the challenges of a sustainable, fuel diverse, decarbonized future.

In response to this shared challenge, the Team has come together to develop a broad-based, long-term plan to ensure the future energy viability of the Railbelt from a social, economic, and technical perspective. The technical aspect of that Plan is the GMRP, of which the RIR is a component. The Team will propose that the GMRP be incorporated into Alaska's broader State Energy Plan as that document is developed in the coming months.

⁶ Oscillations have been measured with a peak of 220 MW, a 1.1 second period and sustained for over 90 seconds on a grid with a summer valley peak load of approximately 500MW.

Figure Two is a graphic representation of the Southern, Central, and Northern regions of the Railbelt grid with the current system and the proposed Southern and Central Region GMRP components overlaid. The components of the GMRP in these regions that make up the 22-23 funding cycle RIR are highlighted in yellow. A more detailed listing of the Plan's component projects (transmission line segments and substations), and estimated costs is outlined in the workplan. Figure Three is a graphic representation of the entire Railbelt with the full GMRP overlaid on the existing system. On this diagram, yellow highlights indicate GRIP Topic 3 Railbelt Innovative Resiliency (RIR) projects; rust and red highlights indicate Topic 1 (RBR) projects; and the blue "C" indicates GRIP Topic 2 Smart Grid projects. This Plan is highly innovative and transformational in that it will reshape the Railbelt in a way that will usher in a sustainable fuel diverse low carbon future.



Figure 2: RIR Components in current funding

As we describe below, the totality of this transformation is innovative technically and financially from both a teaming and regulatory perspective. Given the operational nature of the Railbelt and the disparate socioeconomic status and vast diversity of its communities, valuable lessons from this undertaking will be broadly applicable to the larger grids of the contiguous lower forty-eight states and North America.

Our estimated total cost for the GMRP is \$2.87B over fifteen years. Without significant Federal and State investment, the GMRP and this Project are beyond the financial capabilities of the Railbelt utilities.

The priority for diversifying the Railbelt fuel supply and decarbonizing the Railbelt grid must be to stabilize frequency and decongest the transmission system. These improvements are required irrespective of the nature of fuel supply diversity and decarbonization solutions.

B.2 Project Goals

The RIR line segments considered in this application will construct a second parallel

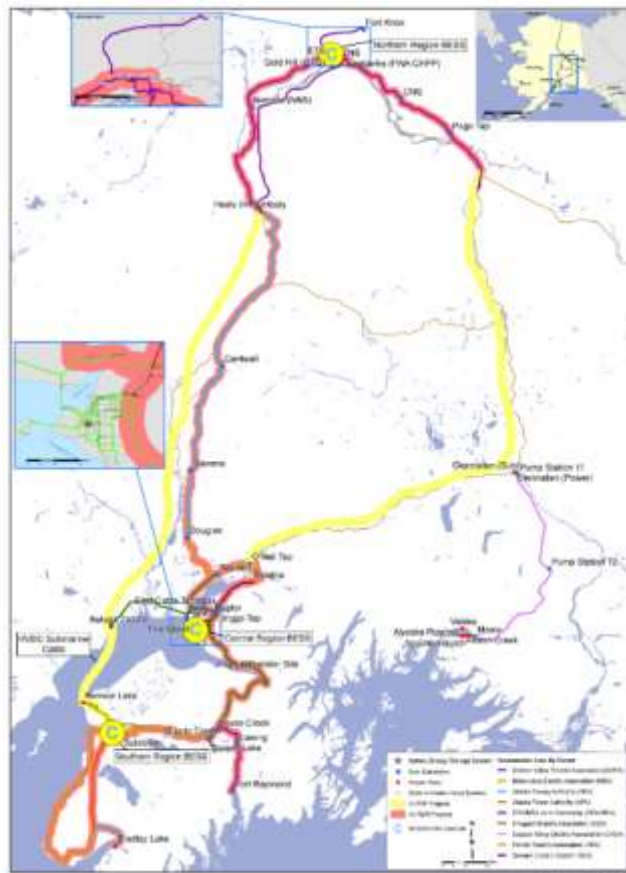


Figure 3: Railbelt Grid Modernization and Resiliency Plan ;

transmission line between the Southern, Central, and Northern regions of the Railbelt grid. The current configuration lacks redundancy, impedes reliability, limits the ability to construct and move clean energy from one region to another, and constrains economic dispatch, thus increasing fuel burn, carbon emissions, and the cost of power to our member-ratepayers. In addition, the project will allow the Team to engage in interregional planning and operations. Further, this application includes completion of two grid-scale energy storage systems (that will) augment the existing 46 MW- two-hour battery already installed on the Kenai Peninsula. These three energy storage systems will be coordinated and operated in real-time with the HVDC submarine cable to maximize transfer capability between regions and minimize spinning reserves, thereby reducing fuel usage, and reducing carbon emissions. The three storage systems will also provide coordinated regulation for system-wide renewables. As importantly, the energy storage systems and new interties will stabilize grid frequency and eliminate the small signal instability oscillations, decreasing the likelihood of large-scale system outages and machine damage.

Goal	Description
1	Completion of the transmission lines and HVDC submarine cable from Soldotna to Nikiski to Beluga and on to Healy, using innovative and technical solutions to enhance resiliency in extreme environments.
2	Completion of BESS units in Northern and Central Regions to coordinate with existing BESS unit and HVDC in Southern region to enhance resiliency and eliminate small signal instability events and increase frequency control.
3	Significantly increase transfer capability between regions (75MW to 200-300 MW). The increased capacity will enable regional participation in planning and clean energy projects, reduce capacity limitations, add resiliency, redundancy, and improve economies of scale.
4	Reduce reliance on fossil fuels and improve resiliency; reduce carbon emissions; virtually eliminate impacts of long-term outages due to extreme weather, wildfire, natural disasters, and other disruptive events.
5	Document lessons learned that can be shared throughout Alaska, the nation, and the world.
6	Adoption of innovative rate-making techniques to incent transmission construction, easing member/ratepayer burden in procuring matching funds for the project.

The project includes an innovative HVDC submarine circuit crossing Cook Inlet from Nikiski in the Southern region to Beluga in the Central region. This crossing will present technical challenges requiring innovative solutions and will subsequently provide important lessons that can be shared throughout Alaska and the US, through DOE's national laboratory system, with potential specific applicability to offshore wind facilities.

As noted above, the RCA, a team member in this project, has agreed to consider innovative rate-making techniques that will incent transmission construction, easing the member/ratepayer burden in procuring matching funds for the project. These rate-making strategies could include inclusion of costs in rate-base through the RCA's Simplified Rate Filing (SRF) process, prior to the assets being used and useful; or forward funding of the project costs. Either or both will significantly reduce the carrying cost of capital thereby reducing the burden on the membership/ratepayers and improving project benefit-cost metrics.

Achieving these objectives will have a significant impact on increasing the transfer capacity between all regions, reducing the requirements for thermal generation reserve, and thus

lowering carbon emissions. It will also improve economic dispatch, further reducing carbon emissions, and eliminate transmission capacity constraints that restricts the use of Bradley Lake energy and capacity. It will allow flexibility to address shifts in load or generation, interregional participation in clean energy projects, and improve economies of scale. As a result, increased economies of scale will decrease the per unit cost of clean energy generation. From a resiliency perspective, accomplishing these goals will reduce or eliminate the likelihood of outages or lack of transfer capability due to small signal instability, flood, unbalanced snow loading, and tree and animal related outages⁷. Innovative rate making will reduce capital carrying costs and improve the benefit-cost ratio for projects incentivizing wise transmission investment. Finally, having a robustly integrated grid will allow for interregional planning which, as noted above, will increase economies of scale and operating efficiencies.

As previously referenced, we have formed a unique partnership between all relevant decision makers in the Railbelt; the State of Alaska represented by the Alaska Energy Authority (AEA), the four interconnected Railbelt Electric Cooperatives, the single Railbelt municipal utility, and the utility regulator, the Regulatory Commission of Alaska (RCA). We have strong support from organized labor, the International Brotherhood of Electrical Workers (IBEW) and other labor unions; and strong support from other stakeholders including the Railbelt reliability Council the Railbelt's newly formed electric reliability organization, the National Electrical Contractors Association (NECA). Together, the National Electrical Contractors Association (NECA) and the International Brotherhood of Electrical Workers local 1547 (IBEW 1547) have a joint electrical apprenticeship training center. This collaborative organization is prepared and excited about ramping its activities up to train what will become that next generation of Alaskan electrical and telecommunications workers required to staff the GMRP. In terms of regional planning and coordination, this unique team has already enhanced collaboration between the State, the regional cooperatives and Seward Electric System, a municipal utility, and the RCA.

Value Proposition

The value proposition for the residents of the Railbelt grid is clear, this project will position the Railbelt for a fuel diverse, sustainable clean energy future and lower energy costs through more efficient use of scarce Cook Inlet natural gas as we transition away from natural gas to a clean energy future. Numerous tribal and disadvantaged communities exist within the Railbelt proper. For the non-Railbelt communities that receive Power Cost Equalization (PCE) funds, most of which are tribal and many of which are disadvantaged, the value proposition is the direct economic benefits that will occur as we hold the Railbelt cost of power down and increase the PCE energy subsidy to these stakeholders. For all rural villages (including non-PCE), as well as the DOE and the nation, the lessons learned from the process of decarbonizing a small scale, fully functioning grid will provide valuable best-method insights to execute this necessary regional activity. Finally, improving the resiliency, reliability, and efficiency of the Railbelt grid will provide

⁷ The 2019 Swan Lake fire separated the Central and Northern regions from the Southern region and the Bradley Lake hydroelectric project for ~135 Days resulting in millions of dollars of additional fuel burn (and Carbon emissions) by the Northern and Central region utilities. The Alaska Intertie between Douglas and Healy is often removed from service due to unbalanced heavy snow loading islanding the northern region from the Central and Southern regions during periods of peak load.

a more secure energy supply to critical military defense infrastructure located in the three Railbelt regions, enhancing national security and global stability.

B.3 DOE Impact

The total project cost is \$ 822.7M with a federal grant assistance request of \$411.4M. Matching funds will be pursued from the State and to the degree required from the utilities. DOE investment is critical to mobilizing this additional State and utility capital. Accomplishing a project of this magnitude in a 10-to-15-year time frame is beyond the financial capabilities of the Railbelt utilities without significant rate increases. The burden of such rate increases falls on all ratepayers but disproportionately on the disadvantaged and underserved. With the completion of this project, fuel burn (which represents about 40 % of an average consumer's bill) can be reduced 10% to 15 %, exclusive of increased clean energy development.

Project Scale

In scale, this project will be the largest grid infrastructure project undertaken in the Railbelt since the interconnection of the Central and Northern regions in 1984. The benefits of this project will be significant and comparable to the recent economic benefit of converting the existing Railbelt generation fleet from GE Frame units to aero-derivative units which reduced fuel burn by nearly 30%. The benefits of the RIR will come in terms of improved fuel efficiency, reducing fuel costs, reduced carbon emissions, increased variable generation penetration, increased private capital investment from IPPs in energy development, reduced O&M, and will result in extended transition time to move away from Cook Inlet natural gas⁸. Finally, the project will promote coordinated energy and capacity planning across the Railbelt.

Measures of Success

Metrics consistent with SMART⁹ goals and objectives will be utilized to measure success. Examples of measurable success are System Average Heat Rate¹⁰ over time, CAIDI, SAIDI, and SAIFI¹¹ resulting from transmission outages, measured increased transfer capability, measured frequency deviations, and reductions in CO2 emissions.

B. 4 Community benefit, Workforce Development, & Disadvantaged Communities

Improvements in Railbelt transfer capability, reliability, and resiliency will lower costs, and these benefits will flow to the numerous tribal and disadvantaged communities on the Railbelt as well as to the rural villages outside the Railbelt through Alaska's unique Power Cost Equalization program. As noted above and in their letter of support, the IBEW sees this as an opportunity to train a new generation of linemen and wiremen, reinvigorating this sector of Alaska's technical workforce. The broad and inclusive outreach program envisioned in our CBP will ensure that maximum benefit flows to the diverse and disadvantaged communities on the Railbelt.

⁸ The Cook Inlet Field provides heat to 140,000 homes and businesses in the Central region and is used to generate 70% of the electricity in the Railbelt. In early 2021, the field's only remaining large-scale producer notified utilities (both gas and electric) that they would not extend existing gas contracts, most of which expire in 2028. Railbelt Utilities are working to develop alternatives in both the short, medium, and long-term. Extending the transition time to move off Cook Inlet gas is a critical part of this plan.

⁹ SMART-Specific, Measurable, Achievable, Relevant and Time bound.

¹⁰ This is the total number of MWHR produced, divided by the total thermal fuel used, measured in MMBtu.

¹¹ CAIDI the consumer average interruption duration index. SAIDI- the system average interruption duration index. SAIFI System average interruption frequency index.

B.5 Long-Term Constraints

This project will not create any long-term constraints on community access to natural resources and tribal cultural resources.

B.6 Climate resiliency

This project installs new poles, wires, and undersea cable, as well as traditional substation equipment. Design criteria will include where appropriate: mapping of avalanche chutes, placement of structures outside of known avalanche, and powder blast paths. If such placement is not possible, the use of breakaway conductor attachments, and poles in driven- pile-caisson construction for ease of replacement where avalanche danger, cannot be mitigated. When appropriate, a combination of wider than typical rights-of-way and taller structures may be used to prevent trees from making contact with overhead conductors, providing both fire prevention and protection. Ongoing right-of-way maintenance will also mitigate tree related outages. Substations and switchyards will be hardened to current AK-CIP standards for physical and cyber security.

C. Technical Description Innovation and Impact

C.1 Relevance and Outcomes

Relevance to the FOA

The RIR aligns perfectly with the FOA goals; transforming community, interregional and national resilience including consideration of future shifts in generation and load; catalyzing and leveraging State and private sector spending for impactful technology and infrastructure development; and advancing community benefit especially to disadvantaged and tribal communities. Further, the Project will provide training and job opportunities for the next generation of power system linemen, wireman, equipment operators, technicians and engineers. The Project has four primary components: the BESS, The HVDC submarine cable, the overhead lines connecting the HVDC cable to the Healy switchyard in the Northern region and the Beluga Switchyard in the Central region, and the lines connecting the Nikiski terminal with the Soldotna substation in the Southern region. As a part of the RIR, the BESS will ensure grid reliability by increasing interregional transfer capability, allowing for diversification of fuel supply, accelerating the adoption of variable renewable generation, reducing carbon emissions, improving frequency regulation, and eliminating potentially catastrophic small signal instability oscillations. Additionally, the BESS and HVDC submarine cable, operating as separate but integrated technologies and integrated with the second transmission path, will improve overall grid resilience and lower costs. The State Energy Plan is under development and the Team will propose that the GMRP be included in that plan.

Unique Teaming

The team, which has come together with the State through the Alaska Energy Authority, represents a unique collaborative effort. This effort exists between the eligible entity AEA, (a transmission and generation owner), a private non-profit electric cooperative representing all balancing authorities in the Railbelt which also constitutes the remaining transmission and generation owners and operators within the Railbelt grid, a public municipal utility, and State's Utility regulator. These entities all working collaboratively on a significant interregional project

will yield benefits for all Railbelt residents including disadvantaged and tribal communities and the broader State through PCE, food, transportation, and national security.

C.2 Feasibility

Addressed within Feasibility and Need below.

C.3 Innovation and Impacts

In current practice, BESS are commonly used for system frequency and variable generation regulation. System oscillation dampening is generally performed by Power Oscillation Dampers (PODs) on Static VAR Compensators or Power System Stabilizers (PSS) on generator exciters (two quadrant devices) which are secondary effect control devices as they attempt to control real power oscillations using reactive power and weak coupling between real and reactive power. Such devices have proven ineffective in dampening the small signal oscillations in the Railbelt. Additionally, HVDC submarine cables are used to transmit bulk power across bodies of water or asynchronously connect two grids and are not part of an oscillation control scheme.

Project Improvement and Innovation

Operating in a coordinated fashion, the BESS and HVDC line will increase transfer capability, resiliency, and reliability, by performing three functions, all of which contribute to frequency stabilization. The first function is increasing transfer capability. The second function is improved frequency regulation. And the third function is stabilizing the grid in terms of small signal instability. The HVDC controllers and the three BESS installations in three different regions of the system will be operated in a coordinated manner¹² to increase transfer limits across the interconnecting transmission lines. From a small signal instability perspective, the BESS will eliminate large power oscillations.

Following completion of the Nikiski-Beluga line or the Beluga–Healy section, the system controls will be modified to optimize system security associated with the decreased inertia and generation contingencies and increase the ability to accept renewables into the system by performing regulation and reserve optimization. An increase of the interregional transfer capacity from approximately 75MW to over 200MW will allow the generation with the highest costs and emissions on the Railbelt to run only during rare contingencies. It will also allow the large-scale wind projects of approximately 200MW capacity to be located as needed to take full advantage of geographic diversity of wind resources, which will minimize the amount of fossil fuel generation required to regulate the output of the Railbelt’s future wind generation portfolio. We know of no other single transmission line that has the capability to consolidate multiple planning areas into a single interregional planning area. Knowledge gleaned from this project’s unique integration of multiple BESS and HVDC will be useful throughout the country and world as BESS and HVDC systems are installed to facilitate increased variable clean energy project integration.

C. 4 State, Local, Tribal, Regional, and National Resilience, Decarbonization

Increasing grid resiliency and lowering the cost of Railbelt electricity will have direct positive impacts on the tribal and disadvantage communities within the Railbelt as well as direct positive impacts on rural PCE communities, which are most often tribal and disadvantaged communities.

¹² If the grip Topic 2 application¹² were to be approved, we would enhance this coordinated control with high speed communications and a single master controller rather than using multiple local controllers and system frequency as our primary direct control variable. Thus, Grip topic 2 and 3 are related *but not dependent projects*.

C. 5 Deployment Impacts; Further Development; Additional Private Sector Investments

Development of a robust grid between regions in the Railbelt will facilitate the development of larger-scale Independent Power Producer (IPP) clean-energy projects by allowing participation in these projects by all the Railbelt utilities. Larger scale projects drive the price per unit of electricity down and make the benefit-cost hurdle lower and more achievable driving greater private sector investment in the Railbelt energy field.

C. 6 Grid Innovation Program

The BESS

Feasibility and Need

The Railbelt is transmission constrained so we are only able to move 10% or less of our peak load between regions. Further, Railbelt utility engineers have observed several increasingly concerning trends on the Railbelt over the past decade. These challenges include the degradation of frequency regulation, decreasing system frequency response to generation trip disturbances, and increasing magnitude and duration of natural frequency power oscillations and occasional large power swings impacting the entire Railbelt. A global engineering firm was engaged by Chugach to investigate the application of a battery energy storage system (BESS)¹³ as a solution to address these concerns. While this firm was able to show BESS contributions to general improvement in frequency regulation on the Railbelt, they were unable to conclusively establish a link between the BESS performance and the natural frequency, small-signal instability oscillations. Building on work that had been done with global Pelton turbine manufacturer in Zurich¹⁴. In early 2004, Chugach followed up with an internal and more robust analysis and validation of the Siemens PTI study¹⁵ but was without a conclusive link between the mechanical phenomenon in the turbine pit and the electric power grid. In 2022, a local engineering firm with a long history of study and evaluation of Railbelt grid phenomenon completed a study¹⁶ definitively showing that the cause of the oscillations was attributable to the characteristics of the Bradley Lake power plant in a weak and oscillatory summer valley system.

The report indicates for a Douglas export of ~70 MW, the oscillations can be controlled with a ~45 MW absorption of a system BESS. If our Grip 2 project is funded, export limits could increase to 100-250 MW, indicating a BESS or combination of BESS's capable of absorbing ~70 MW to ~150MW may be required to prevent these oscillations. This "uncharged" BESS capacity would be regulated and controlled across the system to meet this requirement. Based on these studies, and other analyses performed by Railbelt utilities, three regional BESS units were proposed in each of the Southern, Northern, and Central regions. Study work found that BESS units in the three regions provided significant reliability and economic benefit to the Railbelt. Given the

¹³ Bansal A, Anantharaman A, Donlagic T, Feltes T, Orikhi Z, Rachinger S, Silva D, Grande-Moran C; *Alaska Railbelt Power System Oscillation Anchorage Bess unit Impact Analysis*; 10-20-20; SPTI P# 620T-001718

¹⁴ List B, Amrein J, Heimann A, Furtner N, Keck H, Dorfler P, Hickey B, Stead D, *Bradley Lake Deflector Divider Model Tests*; 9-10-2004 VA TCH Hydro

¹⁵ Thornton R, Bell J, McKinnon C, Reid P, Hickey B; *South Central Battery Energy Storage System (BESS) Reliability and Economic Evaluation Report*; 4-13-21; Chugach Internal Study

¹⁶ Cote J, Burlingame D, Lai D; *Railbelt Oscillation Investigation and Mitigation study*; 3-1-22; Electric Power Systems Inc.

cause-and-effect relationship between the Bradley Lake Project (when operating at low lake levels) and the Railbelt summer valley system resulting in the massive small signal instability oscillations, the BESS were determined to qualify as Required Project work for the Bradley Lake project, and 35 % of the recent \$166M BPMC bond issue was allocated to BESS systems.

Concerns for the Railbelt

Railbelt steady-state frequency regulation has decreased over the past decade. Electrical system frequency is the primary control variable for interconnected power systems (grids). System frequency instantly telemeters the generation-load balance status to protection and control system feedback loops throughout a grid. Frequency is also a physical phenomenon that changes the actual electrical characteristic of the grid¹⁷. Many major power system components are designed to operate at a specific frequency. Deviation from design frequency can cause increased wear and tear and, in extreme cases, catastrophic damage.

The amount of generation that moves frequency measured in MW/.1 Hz is known as system beta¹⁸ and is a measurement of stiffness or robustness of the grid. In the past seven years of system event analysis, the system beta has fallen from approximately 10 MW/.1 Hz in the 1990s to a current variable range between 3 and 13 MW/.1 Hz.

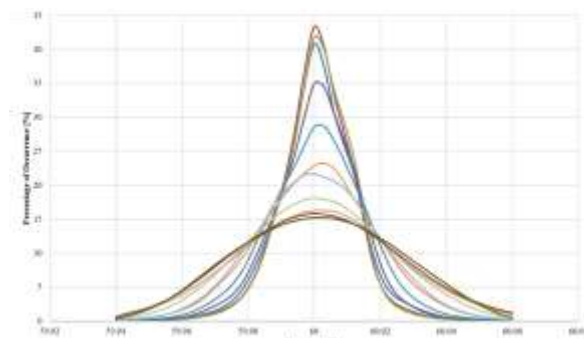


Figure 4- Railbelt Frequency Control decline

A study performed at Chugach revealed that in 2011, system frequency was at the nominal 60 Hz about 44% of the time. In 2020, the time the system was at nominal frequency had fallen to about 15% of the time. This trend of straying from nominal frequency more often is of concern.

Several drivers of the loss of frequency control are lighter, more efficient turbines with less spinning mass (rotating inertia), plant control systems that prioritize efficiency over response, and the

introduction of non-dispatchable or variable

generation into the generation-load mix.

Alaska Railbelt Reliability Standards require that load shedding not occur when only one unit is tripped from the system. Measurements, such as system Tesla recordings, relay event recordings, and SCADA data, indicate that the ability of Railbelt generation to meet this requirement is deteriorating without expensive fast response spinning reserve from gas-fired generation.

¹⁷ Electrical components are a combination of the either inductive, capacitive, or resistive elements. The impedance presented to the grid by the inductive and capacitive components varies directly or inversely with frequency.

¹⁸ This value is closely related, but differs, from system bias, the response conditioning variable in the Area Control Error (ACE) equation.

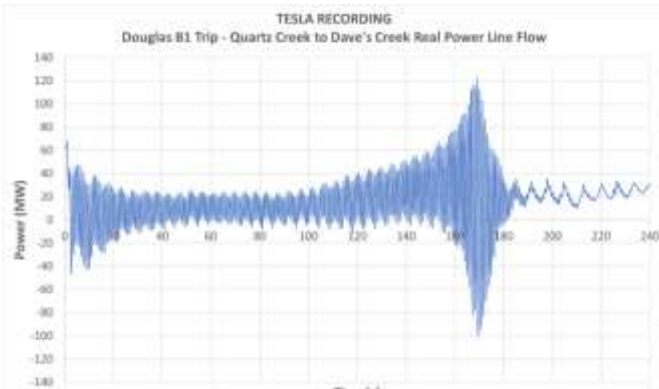


Figure 5- June 3 2021-Representative Natural frequency Oscillation

A significant and potentially catastrophic problem developing on the Railbelt is the increasing magnitude and duration of small signal power oscillations during system disturbances. When a generation unit trips off-line, or another disturbance occurs, power can begin to swing from one end of the system to the other, much like the way a spring oscillates back and forth when it is drawn and released. The frequencies at which the grid oscillates are known as the natural

frequencies of the system, and these natural frequencies exist in most electro-mechanical systems. Natural frequency oscillations can be made up of tens to hundreds of MWs of energy transiting the length of the Railbelt in several tenths of a second. The energy associated with these power swings creates massive reactive forces in the electrical generator's physical infrastructure. Reactive forces in the physical generators create wear and tear in the in base-loaded generation, and in extreme cases, can result in catastrophic failure. Natural frequency oscillations have been a long-term characteristic of the Railbelt, leading to the installation of damping equipment such as power system stabilizers at Bradley Lake and power oscillation dampers on the equipment on the transmission system on the Kenai Peninsula. Natural frequency power oscillations have been increasing across the Railbelt power system. These natural frequency oscillations have been measured as large as 220 MW, shifting power from Bradley Lake to Fairbanks every second, lasting for minutes. With newer and faster data collection technology, it is clear that oscillations are a threat to system reliability and resiliency. Even previously unexplained generator damage may be explained by these power oscillations. For example, the Bradley Lake hydroelectric plant, which is known to participate in power oscillations based on a 2019 study¹⁹, has experienced significant generator stator damage in the past; the repairs approached \$1 M.

The BESS Solution

In response to the concerns above, several potential solutions were informally considered including batteries, grid-scale resistors (brakes), and converting existing frame generators to synchronous condensers. Subsequently, given the advances in battery technology and the improvements in battery cost-benefit profiles, analysis found that BESS units in the three regions provided significant reliability benefit to Railbelt as a whole.

Regional BESS in the Railbelt will improve power system performance, given their high speed of response and versatility. It was determined that BESS's could successfully fulfill the required energy response to a loss of generation in as quickly as less than one second, improving system frequency. Furthermore, the study showed that a BESS could participate in balancing generation and load, thereby improving frequency regulation. Another finding of the study was that a BESS would help stabilize non-dispatchable renewables' output by smoothing the energy fluctuations

¹⁹ n (14)

and controlling their release to the grid. It was also proven that adequate frequency control can prevent severe and potentially damaging oscillations throughout the Railbelt associated with Bradley Lake as well as mitigate oscillations resulting from transient swings following line trips. Likewise, it was noted that with coordinated response, the transient frequencies across weak tie-lines can be controlled and mitigated to increase transfer limits across the line.

Chugach also commissioned a nationally recognized economic and regulatory firm to study²⁰ the economic value of an investment in battery storage and evaluate the effect of battery storage on the Chugach-MEA Power Pool. The study found that the BESS would allow for a more efficient dispatch of generators in the Power Pool by providing fast spin and regulation of load. Additionally, taking reserves and regulation off of gas-fired units will reduce fuel and O&M costs by enabling a more efficient (lower cost) dispatch of the gas units. The study also found that the potential to avoid a major power system outage adds value to consumers. The study concluded that the battery would add significant value to the Power Pool.

After careful analysis, it has been determined that a Battery Energy Storage System (BESS)/ HVDC can significantly enhance system performance and reduce operational limitations in power systems. The proposed integrated BESS will bring a range of benefits to the Railbelt grid. These benefits include improved oscillation damping, enhanced disturbance response rate, increased transfer capability between regions, and less constrained economic dispatch. These improvements will result in reduced fuel burn, lower carbon emissions, and most importantly, greater ability to integrate variable generation such as wind and solar power into the grid. When operated in a coordinated fashion with the HVDC submarine cable, these benefits are significantly enhanced. The combined BESS system promises to be a valuable addition to the Railbelt grid's power infrastructure.

Southern Transmission upgrades HVDC and Interconnecting Transmission Lines

Feasibility and Need

The existing transmission system between the Southern and Central regions was originally constructed to transmit 16 MW of power from the Cooper Lake Power Plant to the Anchorage area. The addition of the 120 MW Bradley Lake hydro plant in 1991, as well as additional thermal generation in the southern region, now relies exclusively on this 1961 constructed line²¹ to transfer all power between the Central and Southern regions. This 218-mile series of single transmission lines was never intended to transfer the power from Bradley Lake to Anchorage. Currently, 100% of the energy produced for export from the Southern region is delivered over the single 115 kV transmission line for the Central and Northern regions.

Although the transmission system has been upgraded in the past 30 years to include two Static Var Compensation systems and certain northern sections of the 164-miles of transmission lines have been upgraded to 230 kV construction, a second or alternate transmission line has not been constructed. The single line crosses over 80 avalanche chutes, transverses through both state

²⁰ National Economic Research Associates (NERA) *South Central Battery Energy Storage System (BESS) Reliability and Economic Evaluation report (n11) pp 44*

²¹ Several sections have been rebuilt to 230 kV standards over the past 1-½ decades and the rate of about 10 miles every other year. Construction windows are limited to 60 days per year in order to prevent spilling water at Bradley Lake. This constraint combined with restrictions around nesting migratory bird species and wetlands make construction slow and costly. The second line from Soldotna to Beluga would eliminate this challenge.

and national forest areas subject to forest fires and other hazards and parallels a Wild and Scenic highway and the scenic Kenai River and other wilderness areas. Outages to the single line have resulted in the separation of the Southern area from the bulk of the Railbelt for up to 135 continuous days in a single year (2019 Swan Lake fire), 60-day construction outages occur annually or bi-annually, and multiple unplanned separations often occur in a single year.

Net of regional load, the Southern region has over 300MW of export capability and an additional 85MW of potential hydro as well as a large windfarm is under consideration. Current export capability and the single transmission line stifle the development of future hydro, wind, and PV resources from being located in the Southern area. Additional renewable resources cannot be developed in the region due to limited transfer capacity available on the existing single line, and the risk of complete production curtailment when the single line is out of service.

The characteristics of the single transmission line result in weak coupling between the Southern and Central regions, consequently, the stability limit of the transmission line is approximately 50% of the line's thermal rating in one direction and approximately 30% in the other. The displacement of thermal generation with renewable generation such as wind or PV will further decrease the inertia in each of the regions and can negatively impact the stability limit across the single inter-regional transmission lines.

In addition to the elimination of the large-scale oscillations and stability constraints, a new line can eliminate the constraints on developing new sources of clean energy in both the central and southern regions. However, without unconstrained access enabled by a new transmission line to the southern resources, the potential development of renewable resources in each region will be limited by each region's ability to operate following a single contingency event.

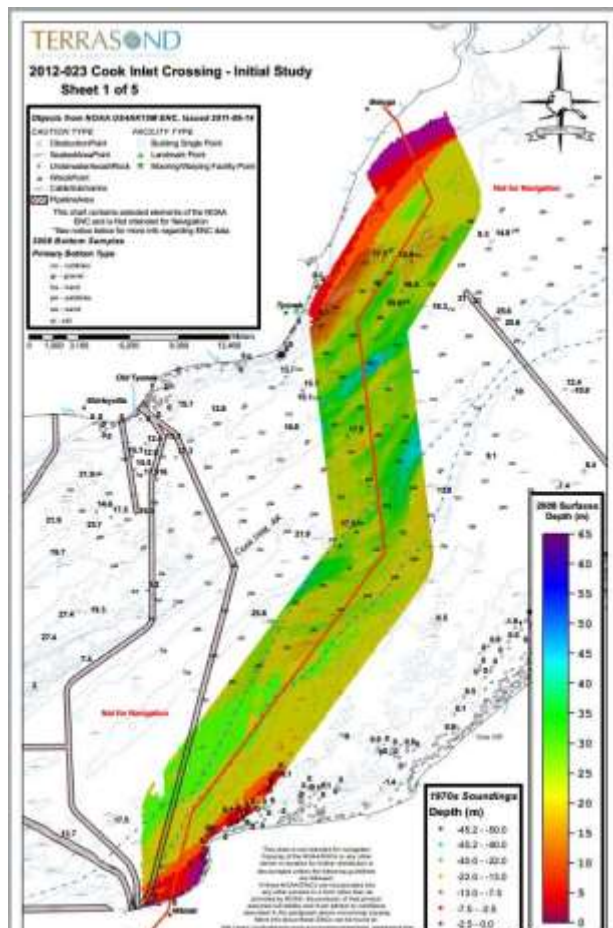


Figure 6- Proposed HVDC Submarine Cable Routing

As opposed to an AC submarine cable and transmission line, a new HVDC submarine cable, and associated AC transmission lines, is proposed. The HVDC submarine cable between the Southern and Central regions is proposed to utilize a bi-pole, 300 MW HVDC system and will eliminate charging current challenges posed by a long AC submarine cable. The submarine cable will require considerable design and mitigation measures within the waters of Cook Inlet to avoid areas of scouring from severe currents and shore ice. In addition, the Inlet has active and abandoned oil and gas pipelines as well as communication cables that are critical to the infrastructure of the Alaskan environment and economy. The use of a bi-pole DC system will allow the Southern and Central systems to remain interconnected and operated as a single integrated system for several years while the existing AC transmission line is being converted to 230 kV. As noted above, Cook Inlet has the highest tides in the US and the fourth highest tides in the world, resulting in very high tidal currents.

The cables routing is intended to mitigate cable damage from these high currents which

carry abrasive silt, trees, and other debris down the inlet. The Inlet is home to an endangered subspecies of Beluga whales. The significant tidal currents and ice scouring requires careful consideration and planning for the cable's location. The existing communications cables and oil pipelines will require protection during the laying of the HVDC cable and state-of-the-art cathodic protection during operation. Innovative construction techniques like full-time whale watch and bubble noise dispersion technology will be used as required to mitigate potential harm to the Belugas.

The installation of a bi-pole submarine cable will harden the Railbelt system against natural disasters such as forest fires, avalanches, and floods, all of which can impact the existing transmission line and result in islanding the Railbelt system into individually controlled areas for extended lengths of time.

The assured interconnection of the Southern and Central regions through this additional transmission line will remove hurdles to the development of additional clean energy resources. The HVDC controller²² will play an integral part of stability control of the entire Railbelt grid. The controller will work in concert with BESS controllers in the Northern, Central, and Southern

22 n (9)

regions to control transient frequencies in each of the islands to increase stability limits across each of the AC transmission interconnections. The HVDC controller will help coordinate the system-wide regulation of clean energy resources. It will be integral to the ability to black-start either the Southern or Central region following a catastrophic event such as a repeat of the 1964 Good Friday Earthquake, the November 2018 earthquake or the tremendous windstorm of 2022. The Railbelt's Northern region is interconnected to the Central region by a single, 195-mile-long transmission line. The Northern region, with the highest energy costs in the Railbelt, desires to import as much energy from the Southern and Central regions as is technically and reliably feasible. The existing transmission line has a stability limit of 65-84 MW, approximately 1/3 of the thermal limit of the line. To allow large imports of power from the south, in 2003 GVEA installed a 46 MW/15-minute NiCad BESS. The BESS prevented large and sometimes total blackouts of the GVEA system following the loss of Central region inertia.

The line has been de-energized for several weeks at a time due to severe icing or structure damage at one of the many river crossings, and these events can occur multiple times per year depending on weather.

Due to the single contingency line, the Northern system, like the Southern system, is limited in the amount of renewable generation it can support on its system. However, unlike the Southern system, the Northern system does not have base-line hydro generation on-line to provide grid-strength, as measured by increased Short Circuit Ratio (SCR) following the loss of the tie to the Central region. The extremely low SCR following the loss of the single line puts the system with large motors, the existing SVCs and the existing BESS at risk.

The proposed Beluga – Healy line will increase transfer capabilities between regions. The line will allow Northern region wind and PV resources to be totally developed as part of the integrated grid, as opposed to as an isolated region. Regulation could be performed over multiple regions, significantly reducing the integration costs for renewable resources. The geographical diversity of wind resources will reduce the overall variability of wind and solar resources, reducing the financial impact of regulation required by thermal resources. With the Beluga-Healy line, the Northern region could be operated without thermal generation during much of the year, only needed when system conditions or climatic events warrant it, or when renewables are unavailable. Further, the proposed routing of the line along the existing AKLNG pipeline route will open access to large, currently geographically unavailable, new wind resources.

The combination of the Beluga – Healy line with the proposed Soldotna – Beluga line virtually eliminates transmission constraints on renewable development in the Railbelt. Additional lines and upgrades may be needed to establish specific renewable projects. However, the bulk of the benefits to the Railbelt are realized with these two transmission lines.

D. Work Plan

D.1 Project Objectives

Phases	Description
1	230kV transmission connection between the Southern Region and the Central Region.
2	HVDC submarine circuit including HVDC terminals at Nikiski and Beluga.
3	Battery Energy Storage System (BESS) that is comprised of a BESS in both Central and North Regions.
4	230kV transmission link between the Central region and the Northern Region.

D. 2 Technical Scope Summary

Phase 1

Phase 1 is a transmission tie connection that connects the HVDC submarine segments with the existing transmission system. The overall objective of this segment is to construct a parallel path between the Central region and Southern region to improve transfer capability and increase resilience. The parallel line will reduce generating costs and will provide an optional path if fires or avalanches interrupt power transfer. The tie connection adds a 230kV bay at Soldotna substation, a new 25-mile 230kV overhead transmission segment from Soldotna to a new terminal point at Nikiski where the 230kV AC system transitions to a HVDC system. A similar process is repeated on the west side of Cook Inlet where the HVDC transitions back to 230kV AC and connects to Beluga over a 5-mile transmission line. At Beluga a new 230kV circuit will terminate in an existing 230kV bay where power will feed into the existing 230kV system feeding both Central and Northern Regions.

Permitting and routing this segment will undergo a NEPA process expected to take three years. A large portion of the study work was completed in 2003 through the Southern Intertie project Environmental Impact Study (EIS). Routing for Soldotna to Nikiski Landing transmission segment follows the recommended path in prior study effort, but additional analysis is likely as conditions/property ownership may have changed since the original study.

Preliminary work will begin to secure right-of-way access through easement, special permit, or land acquisition efforts. Once the final permits are secured, easements will be finalized. Land is available at both the end points (Soldotna and Beluga), therefore permits should be minimal to accommodate local design criteria. Land for both the Nikiski Landing and Beluga Landing will be required for the switchyards and will be placed adjacent to the HVDC converter stations.

Transmission construction would start with right-of-way clearing followed by material delivery and installation of structures and anchors. Following erection, down guys are installed to support structures and conductors are strung using specialized pulling equipment. The conductor is then sagged and pulled to proper tension. Following conductor installation, conductors are clipped (attached to tangent and angle structures) or dead-ended (attached to end structures), and jumpers are installed to carry current from one side of the dead-end structure to the other.

To expedite construction and minimize environmental impacts, helicopter construction is recommended in inaccessible remote locations. The use of helicopters to set structures and pull sock line (stringing line or rope) can reduce labor costs and increase productivity. Helicopters can also be used to deliver material to staged locations along the transmission path.

Construction will add a 230kV bay at Soldotna that will include a termination structure for the line and associated structures, switches, and breakers to interconnect the line with the existing 230kV substation. The interconnection will include relaying protection and communications to safely operate the transmission line. The Nikiski Landing station on the north end of the project will be a termination point, switching station and transition point from 230kV Alternating Current (AC) system to a bi-pole HVDC station using a HVDC converter.

Phase 2 Construction

Phase 2 is a 38-mile HVDC submarine cable as described above. Preliminary routing studies were completed to confirm feasibility of the crossing. HVDC terminals will be located at Nikiski and

Beluga Substations. A combination of HVDC underground cables and overhead transmission lines will be utilized from the HVDC station to the submarine cable terminal.

Since the cables are solid dielectric construction, station service and buildings are not anticipated. Due to the limited number of permitting agencies, we believe the permitting can be completed in three years, even considering the substantial public interest expected on the project.

Phase 3 Construction

Phase 3 includes the addition of two Battery Energy Storage Systems (BESS). The new BESS units will be located in both Northern and Central regions and will augment the existing BESS unit in the Southern region. As discussed in the feasibility section, incorporating BESS units in all three regions will provide significant reliability and economic benefit to the entire Railbelt.

The Northern BESS will be installed within a building to provide maximum protection from Fairbank's extreme temperatures. Both BESS units will include battery modules, power transformers, switchgear and associated bus, steel, control, fire suppression and communications equipment.

Phase 4 Construction

Phase 4 is a 220-mile 230kV transmission link between Beluga in the Central Region and Healy in the Northern Region. The transmission line uses an existing spare 230kV bay at the Beluga 230kV yard and adds a 230kV substation at Healy. The transmission route is envisioned to follow the AKLNG right of way to Healy. A route selection study will be completed to reach a final determination on routing. Special considerations for outreach and flexibility in construction techniques will be necessary and are expected as the line transitions Denali National and State parks. Substation construction will include steel structures, foundations, conduit and cables, two 230kV/138kV power transformers and associated breakers and switches with SCADA, communications, protection and control devices. Line construction is envisioned using a combination of steel H structures, angle and deadend structures with all the associated guys, anchors, and overhead conductor. A fiber optic cable will be included in the Optical Ground Wire (OPGW) for communications. Due to the scale of the project (220-mile length), the project will be broken into 4 sections for construction purposes with multiple contractors working concurrent schedules to meet the construction timeline of just two years. Construction techniques are like those discussed under Phase 1.

Phase 4 will provide improved energy transfer and resilience between the Central and North Regions. The existing transmission line crosses some of the most difficult territory in Alaska including numerous river crossings, snow and ice loading areas, mountain terrain, and proximity to fire danger from lightning strikes prevalent in the area. An alternative path will increase resiliency and reliability and reduce occurrences of transmission unavailability to transfer power throughout the Railbelt. This additional line will provide needed access to new inaccessible renewable energy opportunities such as wind, hydroelectric and PV. Phase 4 includes both a 230kV Substation and 230kV transmission line.

D.3 WBS and Task Description Summary

WBS	Task Name	Days	*Resource	Start	Finish
1.000	Environmental/Permitting				

Grid Resilience and Innovation Partnership (GRIP)
U.S. Department of Energy
DE-FOA-0002740

1.001	Cent. BESS Station	90	P1	11/5/2022	3/11/2025
1.002	No. BESS Station	45	P2	11/5/2025	1/7/2026
1.003	Preliminary Design and NEPA Process - EIS	1095	P3	5/15/2024	7/30/2028
1.004	Soldotna Switchyard	90	P1	7/15/2027	11/18/2027
1.005	Nikiski HVDC	180	P1	6/3/2025	2/10/2026
1.006	Beluga HVDC	270	P1	6/3/2025	6/17/2026
1.007	Healy 230kV Sub	90	P2	11/10/2029	3/16/2030
1.100	Approval Milestone				
1.200	Go/No Go				
2.000	Design & Engineering				
2.001	Cent. BESS	208	D1	1/15/2024	11/2/2024
2.002	No. BESS	208	D1	1/15/2025	11/3/2025
2.003	Soldotna Switchyard	180	D1	1/17/2028	9/26/2028
2.004	Soldotna/Nikiski 230kV	360	D1	6/1/2027	10/18/2028
2.005	Nikiski HVDC Terminal/Switchyard	360	D3	7/1/2027	11/17/2028
2.006	Beluga HVDC Terminal/Switchyard	360	D3	7/1/2027	11/17/2028
2.007	HVDC Submarine Cable	180	D4	1/15/2028	9/23/2028
2.008	Nikiski/Beluga 230kV	270	D1	9/1/2028	9/15/2029
2.009	Beluga/Healy Transmission	1005	D2	1/15/2025	11/25/2028
2.010	Healy 230kV Sub	240	D2	12/1/2028	11/2/2029
2.100	Design Complete Milestone				
3.000	Land Acquisition				
3.001	No. BESS	90	L1	1/10/2026	5/16/2026
3.002	Soldotna/Nikiski 230kV	180	L2	8/10/2028	4/19/2029
3.003	Nikiski HVDC Terminal	180	L2	8/1/2028	4/10/2029
3.004	Beluga HVDC Terminal	270	L2	8/1/2028	8/15/2029
3.005	Nikiski/Beluga 230kV	270	L2	8/10/2028	8/24/2029
3.006	Beluga/Healy Transmission	730	L1	8/10/2028	5/31/2031
3.007	Healy 230kV Sub	90	L1	3/20/2030	7/24/2030
3.100	Approval Milestone				
3.200	Go/No Go				
4.000	Long-lead Equipment Purchase				
4.001	Cent. BESS	263	PO1	5/5/2023	5/9/2024
4.002	No. BESS	263	PO1	11/5/2025	11/9/2026
4.003	Soldotna/Nikiski 230kV	180	PO1	10/22/2028	7/1/2029
4.004	Nikiski HVDC Terminal	526	PO1	6/5/2025	6/13/2027
4.005	Beluga HVDC Terminal	526	PO1	6/5/2025	6/13/2027
4.006	HVDC Cable	526	PO1	9/25/2028	10/3/2030
4.007	Nikiski/Beluga 230kV	180	PO1	9/20/2029	5/30/2030
4.008	Beluga/Healy	365	PO1	11/30/2028	4/26/2030
4.009	Healy 230kV Sub	526	PO1	11/10/2029	05/01/2031
4.100	Approval Milestone				

Grid Resilience and Innovation Partnership (GRIP)
U.S. Department of Energy
DE-FOA-0002740

4.200	Go/No Go				
5.000	Right-of-Way Clearing/Site Prep				
5.001	Cent. BESS	30	C1	1/15/2025	2/26/2025
5.002	No. BESS	30	C2	1/15/2026	2/26/2026
5.003	Soldotna/Beluga Trans	125	R1	11/20/2028	5/14/2029
5.004	Nikiski HVDC	186	C1	6/10/2025	2/26/2026
5.005	Beluga HVDC	207	C1	6/10/2026	3/27/2027
5.006	Nikiski/Beluga 230kV	25	R1	6/5/2029	7/10/2029
5.007	Beluga/Healy Trans				
5.008	Section 1	283	R1	1/15/2029	2/16/2030
5.009	Section 2	283	R2	1/15/2029	2/16/2030
5.010	Section 3	283	R3	1/15/2029	2/16/2030
5.011	Section 4	283	R4	1/15/2029	2/16/2030
5.012	Healy 230kV Sub	90	C2	1/15/2030	5/21/2030
5.100	Right-of-Way Clearing Milestone				
6.000	Construction				
6.001	Cent. BESS Sub	403	E1	3/5/2025	9/21/2026
6.002	Cent. BESS	360	E1	10/1/2026	2/18/2028
6.003	No. BESS Building	396	G1	3/5/2026	9/11/2027
6.004	No. BESS Sub	403	E2	3/5/2026	9/21/2027
6.005	No. BESS	360	E2	10/1/2027	2/17/2029
6.006	Soldotna Switchyard	140	E3	6/1/2029	12/14/2029
6.007	Soldotna/Nikiski Landing 230kV	251	L1	6/1/2029	5/19/2030
6.008	Nikiski Landing Switchyard	140	E3	12/20/2029	7/4/2030
6.009	Nikiski HVDC Terminal	433	E4	12/20/2029	8/19/2031
6.010	Beluga Landing Switchyard	140	E5	12/20/2028	7/4/2029
6.011	Beluga HVDC Terminal	431	E5	7/10/2029	3/7/2031
6.012	HVDC Submarine Cable Laying	90	Sub1	8/1/2031	12/5/2031
6.013	Beluga Landing/Beluga 230kV	157	L1	6/1/2030	1/7/2031
6.014	Beluga/Healy 230kV				
6.015	Section 1	656	L2	1/10/2029	7/19/2031
6.016	Section 2	656	L3	1/10/2029	7/19/2031
6.017	Section 3	656	L4	1/10/2029	7/19/2031
6.018	Section 4	656	L5	1/10/2029	7/19/2031
6.019	Healy 230kV Sub	623	E4	1/4/2029	5/28/2031
6.100	Construction Completion Milestone				
7.000	Commissioning/Testing				
7.010	Cent. BESS	90	D1	10/1/2026	2/4/2027
7.020	No. BESS	90	D2	2/20/2029	6/26/2029
7.030	Nikiski HVDC	49	D1	8/22/2031	10/29/2031
7.040	Beluga HVDC	49	D1	3/12/2031	5/19/2031
7.050	Soldotna/Beluga Trans	30	D1	5/22/2031	7/3/2031

Grid Resilience and Innovation Partnership (GRIP)
U.S. Department of Energy
DE-FOA-0002740

7.060	Healy 230kV Sub	90	D2	5/30/2031	10/3/2031
7.070	Beluga/Healy Trans	30	D2	10/5/2031	11/16/2031
7.100	Commissioning/Testing Milestone				

Resource	Description	Resource	Description
C	Civil Contractor	D	Design Engineering Firm
E	Electrical Contractor	G	General Contractor
P	Permit/Lands Company	PO	Purchasing Officer
L	Line Contractor	R	ROW Clearing Contractor
Sub	Submarine Cable Layer		

D.4 Milestone Summary

Task	Milestone Description	Timeline	Criteria
1.0	Project Management Plan and CBP	90 days	Plan Submittal
2.0	Cybersecurity Plan	90 days	Plan Submittal
3.0	Permits & CBP outreach complete	Per schedule	Record of Decision, permit issued, outreach
4.0	Land Acquisition Completion	Per schedule	Purchase/Easement documents executed
5.0	Long-lead Procurement Completion	Per schedule	Delivery Schedule Submitted
6.0	Construction Completion	Monthly	Monthly Progress Reports
7.0	Testing & Commissioning	120 days post	Testing & Commissioning Report

*Quarterly milestones will be added as the design is further refined.

D. 5 Go/No Go Decision Points – Post NEPA

Description	Criteria	Budget Period
*Permitting Go/No Go	Permit Issued	120 days
Land Acquisition Go/No Go	Purchase /Easement Agreement	180 days
Long-lead Procurement Go/No Go	P.O.'s secured	270 days
Construction Go/No Go	Construction Contract	540 days

*Does not include NEPA Process Timeline- additional Go/No Go points will be added as design is further refined

Go/No go conditions can occur through the routing, permitting and land acquisition process. Landowners/adjacent landowners/special interest groups and others can object to the use, view or construction method being proposed. The outcomes of the objections could be route adjustment, structure type change (wood pole to steel, fiberglass, or laminate), underground vs. overhead, longer conductor span lengths or specialized conductors. Generally, the No Go option results in a change rather than a complete loss of project.

Transmission line materials such as submarine cable, power transformers, transmission structures, switches, breakers, anchors, and overhead conductor can have long lead times depending on the materials and design used. A No Go condition could arise when certain products are unavailable in the market to meet the project's deadline. Options may include a change in design/material to accommodate the unavailability, such as using fiberglass structures rather than steel, or extending the completion time to accommodate the delivery schedule.

Go/No Go on construction would generally occur if labor and equipment were unavailable or in short supply. Alternatives include using helicopter construction to reduce labor costs and speed construction. Project labor agreements can be used to minimize labor disruptions and increase available staffing using less skilled labor for less technical work such as hauling material, excavation, and general labor requirements.

D.6 End of Project Goal

Goal	Description
1	Completion of transmission lines/HVDC submarine cable from Soldotna to Nikiski to Beluga and to Healy, using innovative and technical solutions in extreme environments.
2	Completion of BESS units in Northern and Central Regions to coordinate with existing BESS unit and HVDC in Southern region to eliminate small signal instability events and increase frequency control.
3	Significant increase in transfer capability between regions (75MW to 200-300 MW). The increased capacity will enable regional participation in clean energy projects, reduce capacity limitations, add redundancy, and improve economies of scale.
4	Reduce reliance on fossil fuels and carbon emissions and improve resiliency; virtually eliminate impacts of long-term outages due to extreme weather, wildfire, natural disaster and other disruptive events.
5	Document lessons learned that can be shared throughout Alaska, the nation, and the world.
6	Adoption of innovative rate-making techniques to incent transmission construction, easing member/ratepayer burden in procuring matching funds for the project.

D.7 Project Schedule (Gantt Chart)



*A more detailed version of this Gantt chart is available for review.

D.8 Buy American Requirements for Infrastructure Projects

This project will not include applicable infrastructure work.

D.9 Project Management

Overall Approach

The project will use traditional project management techniques and controls such as change management, budget and cost control, and scope management as identified in the Project Management Body of Knowledge (PMBOK). A comprehensive risk log will be maintained by the project manager. All risk and mitigation strategies will be updated, at a minimum, at each milestone. The project will be managed by an overall project lead under the guidance of the Team. The Team is comprised of Railbelt utility engineers, system operators, and managers. Acting as the project steering committee, the Team will guide the project lead's efforts and provide access to resources and data. The Team and DOE will validate and verify the performance of the systems at each milestone and go/no go point.

Role	Description
Project Lead	Manages overall project
Engineering Liaison	Evaluates process to secure needed design & engineering expertise
Lands Liaison	Evaluates process to secure land acquisition, easements, and permits
Construction Liaison	Evaluates the best method to secure construction contracts
Labor Liaison	Works with labor unions, workforce development organizations, universities, and trade schools to arrange for needed labor
Project Management Lead	Manages overall schedule and coordinates individual projects

Finance & Grant Management Lead	Coordinates work with AEA, utilities, DOE, RUS, and private lenders
Government Relations Lead	Communicates project details with local, state, and federal entities
Purchasing & Materials Lead	Assures key materials are available and monitors and works with vendors on unforeseen Buy America goals
Public Relations Lead	Communicates with key stakeholders and the general public, and executes the Community Benefit Plan outreach
Legal & Contracts Lead	Develops contracts and provides guidance with appropriate terms and conditions
Accounting and Closeout Coordinator	Coordinates with project leads, assuring all proper documentation is secured to timely close out projects; coordinates with Finance and Grant Management Lead
Project Value and Change Management	Projects will be competitively bid. Traditional project change control methods will be used.
Quality Assurance/Control QA/QC	Performed by the project management team; strict check-out and commissioning procedures will be developed in the Factory Acceptance (FAT) and Site Acceptance test (SAT) plans.
Project Communication	Project initiation documents, and Project Management Plan (PMP) will contain a project communications plan detailing chain of command and appropriate communication meeting cadence and tempo.

E. Technical Qualifications and Resources

Combined, the Team combined has two hundred years of Railbelt system operations, construction, and engineering experience. The Team is experienced and well versed in executing complex transmission line and substation projects in Alaska's challenging environment. The Railbelt utilities have skilled engineers and designers, and the local work force includes IBEW journeymen, technicians, and linemen who have built the electrical system we have today. Engineering and design firms, who routinely propose projects as envisioned in the application, are available locally and in the Pacific Northwest.

Alaska has multiple highly-skilled electrical contractors through the National Electrical Contractor Association (NECA), who employ workers from IBEW local 1547. They are versed in both high voltage transmission and substation construction. The IBEW has out-of-state traveler availability and a state-of-the-art apprenticeship school that can ramp up to meet demand. The NECA contractors have specialized tools and equipment to undertake remote offroad transmission construction. These specialized techniques have expedited construction and minimized environmental damage.

E.1 Unique Qualifications and Expertise

The Project Team is unique in that it includes all relevant decision makers in the Railbelt. The Team has decades of experience in constructing transmission lines and installing, operating, and maintaining high voltage (34.5kV 138 kV and 230kV Alternating Current (AC)) submarine cables in Cook Inlet. In addition, they have decades of experience with BESS systems. The existing BESS in Fairbanks at 46MW for 5 Minutes was the largest BESS in the world at the time of its installation in 2003, and, the Southern region BESS (46.5MW-2hours) was commissioned and installed in 2022. Further, with six Static VAR Compensators (SVCs) on the Railbelt the team is very familiar with installation, commissioning, and operation of high-power electronics like those used in

HVDC converters. The Team is currently rebuilding the 39-mile Sterling to Quarts Creek line to 230 kV. The Team has also collaborated on a number of other projects including the construction of the \$350M Bradley Lake Hydroelectric facility in 1991, \$47M Battle Creek diversion at Bradley Lake in 2020, and \$10M Controls replacement on the Northern SVCS. Team members have also done significant transmission line construction individually.

E.2 Existing Equipment and Facilities

The Team's systems have complex state-of-the-art SCADA/EMS systems with an interregional ICCP link for data transfer. A complex network of ringed SONET compatible digital microwave and fiber assets and hardened stations for high-speed communications. The microwave and fiber systems are currently used for SEL high speed mirrored bit communications to enable high speed transfer tripping. As noted above, several high voltage AC submarine cables and BESS systems and SVC's as well as the equipment and technical know-how to work on them.

E.3 Relevant, Previous Work Efforts, Demonstrated Innovations

Numerous complex systems have been studied and successfully placed in the Railbelt by project team members. For example, as previously referenced, in 2003 the Northern region BESS, in 2022 the Southern region BESS, and the Central region BESS which is currently under procurement. High voltage AC Submarine cables have been installed, the earliest at 138kV in 1973. Static Var Compensators have been added, the earliest of which was 1985, and more recently the control systems on all the Alaska Intertie and Bradley Lake SVCs have been completely replaced. Installation of SCADA and EMS systems at all five utilities; installation of interregional digital microwave and fiber optic systems; installation of high-speed communication-assisted transfer trip and line current differential protection on all Railbelt transmission lines; eigenvector/value analysis that defined and mitigated, the small signal instability points between the weak summer valley Railbelt grid and the Bradley Lake Hydroelectric project. The study of development and installation of the Railbelt's multi-stage, multi-delayed under frequency load shed schemes is another example of a complex real-time control system developed and installed by members of the project team.

E.4 Key Team Members' Time Commitment

Key members will be assigned to this project as necessary to ensure successful completion.

E.5 DOE Technical Services

None

CURTIS W. THAYER

Experience and Achievements

Alaska Energy Authority

2019-Present

The Alaska Energy Authority (AEA) is a public corporation of the State of Alaska governed by a board of directors with the mission to “reduce the cost of energy in Alaska.” AEA is the state’s energy office and lead agency for statewide energy policy and program development.

Position: **Executive Director**

- The Executive Director serves as the Chief Executive Officer of the Authority, responsible for all business and operations. I work closely with the Board as it sets Authority policies, goals, and objectives, and is responsible for the execution of Board directives. I have developed a close relationship with the Governor, Commissioners of principal State departments, the Legislature, business community, and the public to advance the mission of the Authority.

Achievements: Increased the profile and developed a strategic action plan to advance the goal and objectives of the Authority

- Worked with the Board to establish long-range vision, strategies, goals, policies, and plans; including leading the strategic planning process and working with the Board and Legislature to implement the strategy to achieve that vision.
- Strengthening the working relationship with the five utilities is like shuttle diplomacy. A few of the key issues during the three years have included purchase of develop a strategy and bonding package for a \$170 million upgrade for the transmission lines from Homer to Anchorage (closes 11/30/22), purchase SS/Q line (\$17 million), Battle Creek diversion and construction delays and construction claims, ligation on the SQ line, and Governor’s goal of reducing the cost of power. Managing expectations of the Board, Governor’s Office, Legislature and our five utility partners has proved to be challenging (and rewarding).
- Oversight responsibility of the Authority’s rural energy programs, including energy system upgrades, loan programs, alternative/renewable energy, energy efficiency, and the Power Cost Equalization program.
- Reviewed and analyzed legislation, laws, regulations, and other public policies that may affect the Authority’s mission and programs and recommends changes when appropriate.
- Developing and maintaining professional/cooperative relationships with local, state, and federal agencies, and Authority business partners.
- Working with legislative or other government agencies regarding policies, programs, and budgets.

Alaska State Chamber of Commerce

2015-2019

The Alaska Chamber is a non-profit, membership funded advocacy organization founded in 1953. The Chamber membership is comprised of companies, associations, and individuals from every business sector in Alaska. The Chamber’s core mission is to make Alaska the best place to do business through its advocacy for and defense of sound business policies based on the principles of free enterprise, personal responsibility, and limited government.

Position: **President and CEO**

- As the President & Chief Executive Officer, I serve as the top administrative officer, principal spokesman, chief advocate in Juneau and Washington DC, chief finance officer and team leader.

Achievements: Raised the profile of the Alaska Chamber

- Coordinated and guided the work of staff, lobbyists, counsel, committee, and volunteers in marshaling and expressing the Chamber’s business perspective on public policy issues which has increased the profile of the Alaska Chamber statewide through outreach and tackling tough legislative positions that benefit and promote business.
- Lead efforts to develop and manage coalitions involving other business associations, advocacy groups local chambers and the US Chamber to achieve Chamber goals.
- Grew Chamber membership for the last three straight years.
- Developed and implemented a financial plan that has increased Chamber reserves by 15 percent within three years.

State of Alaska, Department of Administration

2012 – 2014

With 1,100 employees and an annual budget of \$350 million, DoA facilitates state government operations by providing policy leadership and management services in essential areas, including finance/accounting, payroll, human resources/retirement benefits, information technology, labor negotiations, legal services, procurement/facilities, and risk management.

Positions: Commissioner & Deputy Commissioner

- Served as the chief executive officer of DoA and as a member of Governor Sean Parnell's cabinet. Unanimously confirmed by the Alaska State Legislature.
- Advised Governor on IT, pensions, healthcare, and labor relations with the Legislature and business community.
- Responsible for development and implementation of all DOA policies and programs. Hired and managed two deputy commissioners and ten division directors.

Achievements: Reducing the Cost of Government

- Reformed PERS/TERS (state/local government pension programs) to reduce annual state contribution and ensure long-term solvency. Annual savings are more than \$300 million.
- Restructured AlaskaCare (state healthcare program) to reduce state contribution without reducing core benefits. Annual savings are more than \$60 million.
- Negotiated with the state's eleven public employee's unions to limit automatic merit increases, reduce leave accruals, and cap benefit cash-outs, all without work stoppages. Annual savings are more than \$20 million.
- Worked with Legislature to revamp state procurement statutes to increase transparency and competition. Applied new statutes and best practices to major telecom procurement, which reduced annual state expenses by 50%.

Previous Experience

- **2009-2012:** Deputy Commissioner, State of Alaska, Department of Commerce, Community, and Economic Development
- **2004-2009:** Director, Corporate and External Affairs, ENSTAR Natural Gas Company
- **2002-2004:** President & CEO, Thayer & Associates (political and corporate communications consulting)
- **2001-2002:** External Affairs Advisor, Alaska Gas Producers Pipeline Team (BP, Phillips, Exxon)
- **1997-2000:** Special Assistant, U.S Congressman Don Young (R-Alaska)
- **1993-1996:** Professional Staff, U.S House Committee on Natural Resources
- **1991-1992:** Management Specialist, Federal Bureau of Investigation (FBI)

Education

- **University of Alaska Fairbanks, Fairbanks, AK.** Bachelor of Arts in Political Science and Business/Justice
- **National Renewable Energy Lab (NREL), Golden CO,** Executive Energy Leadership Academy
- **University of Wisconsin,** Institute of Organizational Management, U.S. Chamber
- **State of Alaska,** Real Estate License

Community Activities***CURRENT***

- Alaska Board of Marine Pilots, Chair
- Don Young Institute for Alaska, Chair
- Alaska Leaders Archives, Treasurer

PAST

- Alaska Gas Line Development Corporation, Director
- Alaska Housing Finance Corporation, Director
- Alaska Retirement Management Board, Trustee
- Alaska Royalty Oil and Gas Development Advisory Board, Director
- Abused Women Aid in Crisis (AWAIC), Director and Treasurer
- Committee of 100 Top Chamber Executives, U.S. Chamber
- Council of State Chamber Executives
- Selected as "Top 40 under 40" community leader

CLAY CHRISTIAN MBA, MS, CPA, CIA

clay.christian@gmail.com • Cell: 301-706-1061 • [LinkedIn Profile](#)

• Chief Financial Officer •

Chief financial officer with a long career of leadership for organizations undergoing major transitions. Creative and sound decision-making through changes in strategic direction, mergers and acquisitions, fundraising, debt and equity financing, performance improvement, financial audit restatements, and information systems. Focus areas include capital programs, investment, restructuring and alignment, asset management, procurement, real estate and construction, contract management, optimization, compliance, team building, and continuous training and process improvement.

Deep experience with public and private partnerships, government sponsored entities, not-for-profit companies, investment tax credit, and qualified opportunity zone business development programs. Certified Public Accountant, Certified Internal Auditor, and Big 4 public auditor.

• CORE COMPETENCIES •

Chief Financial Officer • Strategic Planning • Risk Management • Capital Development • Not-for-Profit Mergers and Acquisitions • Financial and Management Reporting • Change Management • Optimization
Excellent Written & Verbal Communication Skills • Leadership • Team Building and People Development
Information Systems • Internal Controls • Training • Continuous Process Improvement

• KEY ACHIEVEMENTS •

- Chief Financial Officer for Alaska Infrastructure Development and Export Authority ([AIDEA](#)) and Alaska Energy Authority ([AEA](#))
- Vice President, Finance for 130-year-old company, [Crowley Fuels](#), Alaska
- Interim-Controller for start-up \$3 billion [Water Street Tampa](#) real estate development
- Independent consultant through Cross Services LLC for numerous companies undergoing substantial change (Fannie Mae, Muni Mae, Capital Petroleum Group, and above Water Street Tampa)
- Worked remotely through pandemic and delivered outstanding results
- Strong engagement with public auditors through new audits, consolidations, and financial restatements
- Frequent meetings with boards, executives, general counsel, and operational leaders
- Strategic and financial transformations

• PROFESSIONAL AND CONSULTING EXPERIENCE •

Chief Financial Officer: Alaska Infrastructure Development and Export Authority ([AIDEA](#)) and Alaska Energy Authority ([AEA](#)) – Anchorage, Alaska 2023 – Present
Leading team of more than 22 professionals for both entities who manage more than \$3 billion in investment, federal, and state programs.

Vice President, Finance: Crowley Fuels – Anchorage, Alaska 2021 – 2023
Lead for more than 20 professionals; equity raise of \$120m; capital improvements of \$20m; budgeting, forecasting, optimization, financial and compliance audits, investor presentations.

Private Equity Investment Firm (Cross Services LLC) – Remote to Tampa, Florida 2019 – 2021
Privately held \$3B real estate investment, backed by wealthy individuals.

- Interim controller; overseeing financial reporting, compliance, and leading accounting transformation on behalf of RSM and Deloitte, global public accounting firms.

Capitol Petroleum Group (Cross Services LLC) – Washington, DC Metro Area 2011 – 2018
Privately held \$1B firm focused on wholesale and retail motor fuel sales in East Coast markets.

- Led first-ever comprehensive audits of companies, developed compliance program and financial reporting system. Worked closely with mezzanine investors and bankers through budgeting, forecasting, financial restatements, and consolidations.
- Designed and developed systems using SQL programs, created executive dashboards, trained accounting department, and implemented cloud-based applications to replace legacy systems.

Miscellaneous Clients (Cross Services LLC) – Washington, DC Metro Area 2009 – 2011
My private consulting firm, focusing on investment and capital raises for several non-public clients.

Municipal Mortgage & Equity LLC (Cross Services LLC) – Baltimore, Maryland 2007 – 2009
Real estate management company with portfolio of municipal and mortgage revenue bonds.

- Led team of 40 examining accounting and reporting of more than 20 business units subject to consolidation as variable interest entities. Designed and conducted cash flow modeling, valuation, and consolidation for 2,200 not-for-profit entities in affordable housing program.

Fannie Mae (Cross Services LLC) – Washington, DC Metro Area 2005 – 2006
Largest government sponsored entity providing mortgage capital to lenders, making housing more accessible and affordable.

- Led team to review accounting policies and information systems for mortgage-backed securities programs and investments in not-for-profit affordable housing organizations.
- Designed and developed SQL database to monitor and report operating performance.

• EARLIER EXPERIENCE •

Freddie Mac – Washington, DC Metro Area

- **Senior Director, Sarbanes-Oxley Compliance**

CohnReznick – Washington, DC Metro Area (lead CPA firm to low-income housing tax credit industry)

- **Senior Manager, Consulting and Audit**

Sodexo – Washington, DC Metro Area (global leader in food and facilities management services)

- **Senior Director, Strategic Information Analysis**
- **Director, Internal Audit**

Ernst & Young – Boston, Massachusetts (global leader in public accounting)

- **Manager, Consulting and Audit**

• EDUCATION AND CERTIFICATIONS •

MBA and MS, Accounting – Northeastern University, Boston, Massachusetts
MS, Economics and BA, Geography – West Virginia University, Morgantown, West Virginia

Certified Public Accountant – CPA (Massachusetts License No. 16762)
Certified Internal Auditor – CIA (Certificate No. 25966)

Pamela J. Ellis

Phone: (907) 771-3981 | Email: PELLIS@akenergyauthority.org

EDUCATION

- Master Class for Data Warehouse and Business Intelligence
University of Alaska Anchorage (Fall Semester 2015)
- *Bachelor of Arts*, Major in Accounting / Minor in Management
College of Saint Benedict – Saint Joseph, Minnesota (1987-1989)
University of San Diego – San Diego, California (1985-1986)

EXPERIENCE

Alaska Energy Authority - Anchorage, Alaska

Controller | December 19, 2022 to Present

Supervisor: Curtis Thayer

- Duties include supervision of the daily accounting functions, finance staff; Develop, design and implement policies, procedures, internal controls and work processes; oversees the Finance section for the Alaska Energy Authority (AEA); Direct supervision of a Project Controller and Assistant Controller; conducts and oversees research and implementation of new accounting standards; controls budget and expenditures for both the AEA operations and capital budgets with restrictions by funding source; Manages federal receipts by reviewing federal grant applications for sufficient federal budget authorization and funding for match requirements; manages federal grant applications and ensures that finance components of the federal financial assistance award applications are properly completed; Manages the financial transactions of awarded federal grants and assures compliance with all federal financial reporting requirements; Reviews and assists with the publication and audit, by external auditors, of the AEA annual Single Audit; Manages the receipt and expenditure of all other funding sources of AEA. Including state funds and community grants that are managed by AEA on behalf of communities; reviews all AEA sub-recipient grants for initial or amendment. Reviews and approves all sub-recipient awards close outs; and responsible for the annual financial statements for AEA. Oversees the annual financial audit with external auditors.

Municipality of Anchorage - Anchorage, Alaska

Assistant Controller (Acting Controller 2011 & 2019) | February 2008 to Present December 16, 2022

Supervisors (Controllers/CFOs (when Acting for over 6 months)): Teresa Peterson, David Ryan, Lucinda Mahoney (CFO 2011), Nanette Spear, Tom Fink, Tammy Clayton, Alex Slivka (CFO 2019), and Mollie Morrison.

- Supervision of up to seven staff accountants and up to four Contractors (Supervisory backfill during SAP implementation) as Assistant Controller and up to twenty-three staff accountants and four supervisors as Acting Controller for the Controller Division;
- Duties of the Assistant Controller include review and creation of year-end workpapers, Detail Statements, capital asset schedules, footnotes, required supplementary schedules (RSI's), and statistical tables for the Annual Comprehensive Financial Report (ACFR). Coordination with internal and external auditors including audit field work and audit of the detailed statements and ACFR. As Acting Controller created the Letter of Transmittal and MD&A for the ACFR. Created audit finding recommended corrective action plans. Creation of the GASB 34 conversion entries and all required documentation. Recording of all debt financing activities at the governmental fund level and processing the conversion to the government-wide level for government-wide financial statement presentation.
- Create and post in the General Ledger (GL) all required GL transactions required for G.O. debt refunding's. Review all new G.O. debt GL postings for MOA's Governmental Funds. Offer consultation with the Public Finance Division in regard to capitalization of capital assets for upcoming G.O. Bond issues.
- Incorporation of three discretely presented component units and one trust fund in the form of four separate stand-alone audited financial statements into the government-wide financial statements for MOA.
- Creation of a full set of stand-alone financial statements for CIVICVentures LLC (a blended component unit), including the MD&A, financial statements (in the full accrual and modified accrual presentation) with a two-year comparison and footnotes. Maintenance of inventory documentation and capital asset schedules. Participation in the annual audit.
- Oversight of all daily accounting functions of Governmental Funds (to include the General Fund), Enterprise Funds, Internal Service Funds, Fiduciary Funds, and Suspense Funds (such as the Cash Pool Fund and the Employee Pay and Benefits Fund). Oversight of the MOA's capital asset and construction work in progress (CWIP) daily accounting activities. The Assistant Controller supervises the Fixed Asset Accountant and Infrastructure Accountant for MOA. Daily review and approval of journal entries, fund certifications of Municipal Assembly documents, and reconciliations. Creation and management of month and year-end processing schedules. Responsible for period close coordination with other Finance Directors. Hold weekly meetings as required. Process the year-end split payroll postings and perform extensive reconciliations before posting.
- Subject matter expert (SME) of the General Ledger (GL), Controlling Module (CO), Asset Management Module (AM), and the Projects Module of SAP.

- Assist with implementation of all new GASB pronouncements. Review and update of Finance policy and procedures. Creation of internal control documentation and oversight of internal controls regarding the GL and creation of the ACFR per GAAP. Acting Controller as required.

Fund / Reconciliation Accounting Supervisor | February 2005 to January 2008

Budget Coordinator Finance & CFO Departments

Supervisors: Teresa Peterson, Wanda Tankersley, Michelle Drew, and David Richards

- Supervised five Senior Staff Accountants. Two reconciliation accountants and three fund accountants. Oversight of the MOA's daily accounting activities of the General Funds, Enterprise Funds, Special Revenue Funds, Debt Service Funds, Internal Service Funds and Trust Funds (Fiduciaries). To include review of all fund certifications created for the CFO for pending assembly legislation. Oversight of MOA's capital asset module and creation of MOA's capital asset footnote for the ACFR. Creation of various footnotes, RSI's, and statistic tables of the ACFR. Review of MOA's bank reconciliations, investment reconciliations, subledger to general ledger reconciliations and unclaimed property filings. Assist four Finance Divisions of the Finance Department and the CFO Department with review and creation of their annual operating budgets. Assist with review and updates to the intergovernmental cost allocation plans (IGCs) and methodologies for the Finance and CFO Departments. Acting Controller as required.

General Fund Accountant | April 2004 to January 2005:

Supervisor: Guy Bailly

- Create workpapers, detail statements, RSI's, and statistical tables for all of MOA's General Funds. Review and MOA wide department generated journal entries and creation of journal entries for all of MOA's General Funds. Create fund balance worksheets for the General Funds of MOA. Reconcile all balance sheet accounts of the MOA General Funds and create year-end workpapers.

Grant Fund Accountant | October 2001 to March 2004

Supervisor: Catherine Gettler-Amyott

- Create monthly and quarterly grant reports for state, state pass thru federal, and federal grants awarded to MOA. Reconcile the GL to grant reports and make correcting entries in the GL as required. Receipt all grant proceeds and create year-end accrual / deferral entries. Create workpapers for the generation of the Single Audit. This was for MOA's Capital Project Funds, Enterprise Funds and Special Revenue Funds. Assist in audit requests when being audited by external or internal auditors.

Reconciliation Accountant | April 2001 to September 2001

Supervisor: David Richards

- Reconciled the Accounts Payable subledger and Accounts Receivable subledger to the General Ledger. Reconciled the revenue postings to all Governmental Capital Project Funds and created corrective entries.

PROFESSIONAL BOARDS AND PROFESSIONAL CERTIFICATES

- Governmental Finance Officers Association – Member
- Municipal Audit Committee – Member (when serving as the Acting Controller)
- Lost Lake Run Board Member
- GFOA certificate for Excellence in Financial Accounting and Reporting (2019 and 2020).

COMPUTER SKILLS

- | | |
|---|--|
| ▪ Microsoft Word | ▪ Intuit Turbo Tax |
| ▪ Microsoft Excel | ▪ Intuit QuickBooks Pro |
| ▪ Microsoft PowerPoint | ▪ SAP (to include completion of 1 semester SAP course at UAA on Hana, BW, and NetWeaver) |
| ▪ Microsoft Outlook | ▪ Kronos and NEOGOV |
| ▪ PeopleSoft Financial Systems | ▪ Libra Accounting Software |
| ▪ Corel WordPerfect | ▪ Skyline Software Systems |
| ▪ Corel Quattro Pro | ▪ Onsite Manager |
| ▪ IBM Lotus | ▪ Various Web Based Reporting Systems |
| ▪ Yardi Property Management Software | |
| ▪ Microsoft Dynamics NAV 365 Business Central | |

BRANDY M. DIXON

13429 Karen Street
Anchorage, AK 99515

(907) 764-3928
bmdinak@gmail.com

SUMMARY OF QUALIFICATIONS

Creative, forward thinking, resourceful Communications Professional with 15+ years experience in all facets of marketing, advertising, and public relations. Successfully promote diverse activities and events. Conduct public information, social marketing, and education campaigns. Strengths include:

- Written and Oral Communication
- Planning and Organizing
- Managing and Mentoring
- Researching and Evaluating

Detail, results and goal oriented. Productive team member with dedication to quality and professionalism. Proven track record of putting ideas into motion and creating engaging, targeted marketing campaigns.

SELECTED ACCOMPLISHMENTS

Written and Oral Communication

- Executed mail and email broadcast campaigns, public relations, conferences shows, media advertisements, promotions, customer communications, and other marketing plans to inform the public.
- Designed, scripted, edited and arranged production of internal/external newsletters, brochures, annual reports, corporate profiles and submissions, and internal/external communications.
- Served as spokesperson for the Alaska Native Medical Center (ANMC). Responded in timely matter to media inquiries, arranged interviews, distributed press releases and media advisories to provide accurate information. Encouraged positive and discreet communication on controversial, sensitive and proprietary topics. Protected patients' privacy and confidentiality according to the Health Insurance Portability and Accountability Act guidelines.
- Ensured cross-system coordination between ANMC and its Tribal Health Organization partners throughout the state and interactions with media regarding personnel, programs, services and policies.
- Managed interposition of vendors and contractors to successfully complete projects on time and on budget.

Managing and Mentoring

- Supervised team of five. Oversaw time and attendance, discipline, training, coaching, performance evaluations and ongoing development opportunities. Facilitated staff meetings.
- Delegated responsibilities and assignments among staff and monitored timely completion of projects.
- Identified and coordinated specific training opportunities for employees in alignment with their employee development plans.
- Monitored and coached 25+ scholarship and internship participants throughout the course of the Alaska Native Tribal Health Consortium's (ANTHC) 9-week internship. Arranged travel, housing, onboarding, interviewed department heads for intern placement matching at ANMC and conducted periodic evaluations.
- Managed database of 125+ scholarship and internship program participants via Microsoft Access to monitor program success.
- Developed and presented information to executives on department activities and goals to sustain budget funding.

Planning and Organizing

- In collaboration with leadership, developed short and long-term strategic communication plans for ANMC to fulfill Board of Directors' goals and objectives.
- Planned and coordinated numerous company events for 2,000+ employees including Joint Commission celebration, employee picnic, employee appreciation celebrations and United Way campaigns. Provided key organization functions as a member of planning team for Annual Meeting for four years with 100+ attendees.
- Successfully led marketing activities to promote the Healthy Alaska Natives Foundations' annual fundraising ball for three years with an average attendance of 450+ attendees and celebrity guests.
- Organized 20-30 employee forums over a two-year period with an average attendance of 30-40 people, which resulted in improved communication between hospital administration and staff.

Researching and Evaluating

- Conducted focus groups in partnership with external contractor to gain insight on needs of target audience. Developed communications plan based on results.
- Initiated strategic planning and implementation on a variety of communication and marketing plans.
- Reviewed ANTHC Scholarship and Internship applications, interviewed candidates and observed disciplinary procedures for program and departmental positions. Researched, developed and conducted trainings. Monitored and analyzed budgetary position for program.

EMPLOYMENT HISTORY

Communications Director	Alaska Energy Authority, AK	9/19 – Current
Communications and Events Director	Alaska Chamber, AK	12/13 – 9-19
Client Insights	Solstice Advertising, AK	9/13 – 12/13
Special Assistant to the CEO	Alaska Native Tribal Health Consortium, AK	01/12 – 9/13
Marketing Manager	Alaska Native Tribal Health Consortium, AK	09/09 – 01/12
Public Relations Manager	Alaska Native Tribal Health Consortium, AK	04/08 – 09/09
Manager of Public Relations	Southcentral Foundation, AK	07/07 – 04/08
Senior Office Specialist	Alaska Native Tribal Health Consortium, AK	04/06 – 07/07
Program Assistant	Alaska Native Tribal Health Consortium, AK	05/05 – 04/06
Senior Office Assistant	Alaska Native Tribal Health Consortium, AK	11/04 – 05/05
Office Manager	Rizzo & Company, AK	04/04 – 10/04
Marketing Coordinator	Microcom, AK	06/03 – 04/04

TECHNICAL SKILLS

Microsoft Office Suite:	Adobe Software:	
• Access	• Publisher	• Acrobat
• Excel	• Visio	• Bridge
• Outlook	• Word	• InDesign
• PowerPoint		• Illustrator
		• Photoshop

PROFESSIONAL ORGANIZATIONS

- American Marketing Association
- Alaska Chapter
- Public Relations Society of America
- Alaska Chapter
- Alaska Design Forum
- Cook Inlet Regional Incorporation Shareholder

EDUCATION

- Bachelor of Art, Art, University of Alaska Anchorage, AK
- Diploma, Robert Service High School, Anchorage, AK

MARK ZIESMER

(907) 771-3985

mziesmer@aidea.org

EXPERIENCE

July 2022 to Current **ALASKA ENERGY AUTHORITY, Anchorage, Alaska**

Project Controller – Owned Assets

- Responsible for all accounting activities related to utility assets.
- Establish, monitor, and enforce internal controls and accounting procedures.
- Prepare, analyze, and distribute quarterly financial and compliance reports.
- Work with management and utility partners for development of the annual budget.
- Coordinate, plan, and serve as point of contact for the annual audit.

July 2020 to July 2022 **ALASKA SAUSAGE COMPANY, INC, Anchorage, Alaska**

Controller

- Responsible for all company financial and accounting operations.
- Evaluated procedures and processes for effectiveness and adherence to GAAP.
- Administered 401k plans, payroll, health insurance, and workers compensation.
- Collaborated with outside consultants to complete annual review and tax return.
- Prepared bank reconciliations and cash forecasts.

November 2010 to July 2020 **DOYON UTILITIES, LLC, Fairbanks, Alaska**

Senior Regulatory Analyst (April 2019 – July 2020)

- Prepared revenue requirement schedules and depreciation studies for rate filings.
- Submitted quarterly and annual regulatory reports to the Regulatory Commission of Alaska.
- Assisted legal counsel with analyzing and developing regulatory strategic plans.
- Aided the Regulatory Commission of Alaska in conducting utility audits and review of rate filings.
- Provided guidance to corporate staff on regulatory matters.

Senior Financial Analyst (July 2018 – April 2019)

- Supervised and reviewed day-to-day work of financial analyst team.
- Prepared the annual corporate budget, financial projections, and variance analyses.
- Provided analysis for tariff rate changes and known and measurable adjustments.

Business Systems Analyst (June 2017 – July 2018)

- Maintained responsibilities held under Senior Utility Accountant/Analyst title.
- Heavier focus on managing corporate wide system implementations and upgrades.

Senior Utility Accountant/Analyst (November 2010 – June 2017)

- Project manager for corporate wide system implementations and upgrades.
- Spearheaded system process improvements and integration projects.
- Provided ad hoc reporting support for all departments.
- Reviewed work of accounts payable, payroll, and general ledger staff.
- Supervised monthly accounting close and financial reporting.
- Maintained corporate debt balances and compliance reporting.
- Prepared bank reconciliations and cash flow forecasts.

June 2010 to November 2010 **KINROSS GOLD CORPORATION, Fairbanks, Alaska**

Senior Accountant

- Finance team member for an enterprise resource planning system implementation.
- Provided cost and fixed asset accounting for capital projects.
- Supervised and reviewed day-to-day work of accounts payable and payroll staff.

MARK ZIESMER

(907) 771-3985
mziesmer@aidea.org

EXPERIENCE (CONTINUED)

June 2009 to June 2010 **DOYON UTILITIES, LLC, Fairbanks, Alaska**

Asset Guardian Coordinator / Project Accountant

- Project manager for asset management software implementation.
- Develop work order, preventive maintenance, and asset tagging processes.
- Assist controller with identifying and developing project and cost reporting capability.

April 2005 to May 2009 **FLINT HILLS RESOURCES ALASKA, LLC, North Pole, Alaska**

Project Controls (May 2007 to May 2009)

Accounts Payable Supervisor / Yield Analyst (December 2005 to April 2007)

Project Cost Analyst (April 2005 to November 2005)

October 2002 to March 2005 **WILSON AND WILSON CPA'S, INC., Fairbanks, Alaska**

Senior Accountant

EDUCATION

University of Alaska Fairbanks, Fairbanks, Alaska

Master of Business Administration, Capital Markets

University of Oklahoma, Norman, Oklahoma

Bachelor of Arts, Economics

CERTIFICATION

IMA Data Analytics & Visualization Fundamentals

Institute of Management Accountants

IMA Robotic Process Automation Series

Institute of Management Accountants

UNIX System Administrator

Cochise College

PROFESSIONAL ASSOCIATIONS

Institute of Management Accountants – Member, Treasurer

Government Finance Officers Association – Member

COMPUTER SKILLS

MS Office Suite, Microsoft Project, Microsoft Dynamics, MS SQL Server, Aspen Canopy, Oracle, Maximo, JD Edwards, QuickBooks, Jet Reports, IBM Cognos Connection, UNIX, Linux

Bryan E. Carey, P.E.
13041 Ridgewood Road
Anchorage, Alaska 99516
(907) 382-0949 E-mail B3Alaska@Outlook.com

Summary of Qualifications

Professional Engineer with over 30 years project experience at remote Alaskan sites. Experience in project management and working with varied teams of contractors and clients. Experience in design and construction at locations with challenging logistics. Strong verbal and written communication skills.

Education and Professional Certifications

Professional Engineer registration in Alaska CE - 10810
M.A., Business Administration, University of Alaska, Anchorage
B.S., Petroleum Engineering, University of Alaska, Fairbanks

Experience and Qualifications

Director of Owned Assets, Project Manager, Alaska Energy Authority AEA), Anchorage, Alaska, 2001 to Present

Project Manager at the two largest state owned but utility operated hydroelectric projects in the State (Bradley Lake and Snettisham). Responsibilities include insuring projects remain in compliance with Federal Energy Regulatory Commission (FERC) license and state permits, work with diverse group of utilities managers and professionals on project upgrades, insurance and legal agreements, and insure the State ownership interest is not impaired. Have recommended, worked with agencies and other stakeholders, and overseen multiple project license amendments through FERC to reduce land fees and flow releases.

Oversee AEA owned Statewide transmission projects. Oversee planning and operation of AEA owned and utility operated & maintained projects. Ensure insurance and permits current and in compliance.

Board Member Railbelt Reliability Council (RRC) which is the certificated electric reliability organization for the Railbelt region of Alaska. The goal of the RRC is to ensure grid resilience and reduce long-term costs by developing and enforcing technically sound reliability standards, conduction grid-wide integration resource planning, and designing consistent interconnection protocols for grid users.

Reviewed Renewable Energy Fund (REF) proposals and managed grantee's.

Proposed new West Fork Upper Battle Creek Diversion Project for Bradley Lake hydroelectric Project to utilities. Oversaw all environmental and engineering studies. Filed FERC documents, and acquired license amendment. Managed acquiring funding, bidding, and oversaw construction of diversion project. Project completed on schedule and within budget of \$47 million. Project increases annual energy of the largest hydroelectric project in Alaska by 10%.

Project Manager for feasibility and conceptual engineering studies for the Susitna Hydropower Project. Oversaw engineering contractors to come up with conceptual designs

and costs to fit within the Railbelt Integrated Resource Plan (Utilities future electrical demand and generation). Deliver presentations and question & answer at legislative committees and public organizations. Oversaw all engineering and environmental work for filing the Preliminary Application Document with FERC.

Managed contractors to design, acquire site control, project funding, and construct energy projects at remote Alaskan communities. Projects required meeting with local community leaders and design engineers to develop a project design. Site control was then obtained and a Business Operating Plan developed and accepted by the project participants. Projects were built using contract construction managers or competitive bid. Negotiation of scope and changes occur at all phases with project participants and contractors.

Bulk fuel, power plant, and small hydroelectric projects were completed at approximately 20 remote rural communities. Many of the projects had multiple energy projects completed. Remote work involved limited air or barge logistics. Steep terrain required several projects to be completed with extensive use of helicopters to move equipment

William J. Price

25050 Cates Ave
Eagle River Ak, 99577

freedomspice@live.com
907-903-3377

SUMMARY

- 20 years of experience as an Engineer and Project Manager.
- Received Bachelor's in Mechanical Engineering from Utah State University in 2002.
- Professional Mechanical Engineer, State of Alaska License #129742.

WORK EXPERIENCE

Senior Infrastructure Engineer *August 2019 – Present* *Alaska Energy Authority* *Anchorage AK*

- Maintain transmission & generation infrastructure owned by the Alaska Energy Authority. This includes the Alaska Intertie, Bradley Lake Hydro, and other related transmission infrastructure. Maintenance and operations managed through Committees consisting of utility engineers and executives.
- Represent AEA on Railbelt Reliability Council, and participate in creation of the State Energy Security Plan.
- Responsible for project planning. This includes collecting and analyzing energy and community data, identifying present and future needs, conceptualizing engineering solutions, and developing, reviewing, and analyzing plans and proposals in order to determine the feasibility and appropriate technology for a prospective project. Conduct site visits, including public meetings in order to discuss prospective projects with local entities and residents.
- Direct design professionals and business consultants in the development of conceptual design reports, design documents, business plans and cost estimates appropriate to the scope of the project.
- Perform project construction management functions including overseeing the preparation of construction budgets, schedules, work plans, quality control, oversight and on-site inspections during construction.
- Administer technical services contracts including issuing invitation for bids, reviewing and evaluation bids, selecting contractors, preparing documents, negotiating and awarding contracts, monitoring and supervising contractors, preparing change orders, overseeing contract accounting, and evaluating contractor's work.
- Analyze data, research new technology, and propose solutions to technical problems. Develop comprehensive reports and technical analysis to propose solutions and effective actions to solve technical problems.
- Coordinate with agency staff, rural community entities, federal and state agencies and the public on project and program-related topics.

Mechanical Project Engineer *March 2017 – August 2019* *RSA Engineering* *Anchorage AK*

- Responsibilities included working with the clients to develop concept designs, calculations, equipment selections, mechanical design drawings, specifications and supporting documents. Work collaboratively with architects, structural, civil engineers and in house electrical engineers to complete projects on time and on budget. Significant projects summarized below:
- Renovation of existing power plants in Kaktovik and Anaktuvuk Pass in the North Slope Borough. Project includes new radiators, heat exchangers, pumps, waste heat recovery loops, day tank, and related systems.
- Replaced boilers and renovated mechanical rooms in multiple properties owned by the Municipality of Anchorage and the National Park Service. Replacement included site investigation, drawings, boiler selection and supporting equipment and piping design.
- Developed plans and bidding documents for replacement of all domestic water piping in Valdez hospital.
- Designed water and waste connections for North Slope Borough commercial and residential buildings. Installations included holding tanks, below and above grade sewer connections.

<i>Mechanical Project Engineer</i>	<i>Jan 2011 – Jan 2017</i>	Gray Stassel Engineering	Anchorage AK
------------------------------------	----------------------------	--------------------------	--------------

- Designed or assisted in the design of 13 rural power systems for Alaskan villages. Communities included Atmautluak, Emmonak, Stebbins, Nunam Iqua, Teller, Togiak, Fort Yukon, Perryville, Kake and Heat Recovery renovations in Buckland and King Cove.
- Project Engineer for Kvichak River RISEC (River In Stream Energy Conversion) Project. Deployed two hydrokinetic devices in the Kvichak River near Igiugig Alaska, which is home to one of the largest Salmon returns in the world (Bristol Bay). Both devices were connected to the Igiugig electric grid during testing.
- Developed and maintained, budgetary estimates, project schedules, permit requirements, and stakeholder meetings.
- Designed new power plant with a biomass and district heating system in Fort Yukon Alaska. System includes 4 diesel generators which provide prime power for the community of Fort Yukon. The district heating system will provide heat for 13 community buildings through nearly 9000 feet of arctic pipe and will offset approximately 50,000 gallons of heating oil annually in the community.
- Assessed 7 rural Alaskan villages for new or updated heat recovery systems, resulting in construction of heat recovery systems in King Cove, Buckland and Atmautluak, which offset nearly 62,000 gallons of heating fuel annually.

<i>Director of Operations Support</i>	<i>May 2009 – December 2010</i>	212 Resources	Salt Lake City UT
---------------------------------------	---------------------------------	---------------	-------------------

- Operations Support for treatment of water produced during Natural Gas production in Wyoming and Colorado. Support included mechanical, process, and electrical engineering, IT, logistics, procurement, and corporate reporting.
- Project Engineer for new produced water recycling facility in Colorado. Project vaporized produced water from nearby natural gas production. Super concentrated brine was stored for disposal, condensate (primarily methanol) was collected and clean water was discharged into a nearby tributary of the Colorado River.
- Continued to serve as Field Engineer for both Colorado, and Wyoming sites. Supervised and assisted in installation of new equipment, engineering support and technical problem solving. Primary contact for vendors, contractors, consultants, manufacturers, and industry experts to solve problems and maintain field operations.
- Developed and implemented a root cause analysis and corrective action program. Created documents and reporting systems to track failure events and corrective actions. Trained operations staff in data collection, and root cause investigation.

<i>Field Engineer</i>	<i>Aug 2008 – May 2009</i>	212 Resources	Grand Junction CO
-----------------------	----------------------------	---------------	-------------------

- Provided technical support, stress analysis, vibration analysis, PLC trouble shooting, and general problem solving for 24 hr field operations. The remote facility, circulated, vaporized and concentrated produced and 'frac' water from natural gas production. The super condensed waste water, condensate and clean water were stored for the client use or disposal.
- Monitored process efficiency through data collection and trend analysis, process improvements and preventative maintenance.
- Supervise installation, repair or replacement of equipment, and manage corrective actions.
- Support main office engineering staff through data collection, design engineering, testing and evaluation, field inspections utilizing AutoDesk Inventor and AutoCAD.
- Support construction efforts and new site preparation.
- Work with clients to determine operation requirements and design solutions.
- Visit vendors and contractors to inspect equipment and construction to verify specifications were met.

Ryan McLaughlin

ryan.mclaughlin25@gmail.com
907.444.7886

Work Experience

Alaska Energy Authority - Anchorage, Alaska (05/2023-present)

Infrastructure Engineer (05/2023-present)

- Assisted in engineering studies, field investigations, and development of engineering design for the Alaska Energy Authority's owned assets.

Alaska Native Tribal Health Consortium - Anchorage, Alaska (01/2022-present)

Engineering Project Manager (01/2022-present)

- Managed water, sanitation, and solid waste infrastructure projects for 7 Alaska Native communities in the Maniilaq and Norton Sound Regions of Alaska
- Developed strong relationships with key tribal and city members to help identify and progress projects that were high priority community needs
- Secured project funding through numerous sources and ensured engineering and construction was managed in compliance of funding requirements
- Negotiated and administered engineering and construction contracts, tracked and adjusted consultant progress and ensured adherence to project scope, schedule, and budget

Alaska Solar - Anchorage, Alaska (06/2021-10/2021)

Solar Technician (06/2021-10/2021)

- Worked on a small team to install ~700KW of residential solar in Southcentral Alaska
- Interfaced with customers and provided easily digestible information on how the systems would operate and produce

ConocoPhillips - Anchorage, Alaska (06/2015-03/2021)

DataOps Engineer (05/2020-03/2021)

- Collaborated with Amazon Web Services to develop a machine learning model that optimized wiper trips for the Coiled Tubing Drilling Program
- Helped develop real-time and big data processing pipelines to support the Alaska Data Science team in an effort to move Company data from on-prem to the cloud
- Acquired proficiency in multiple programming languages (SQL, Python) through on-the-job training and DataCamp curriculum

Coiled Tubing Drilling Engineer (09/2018-05/2020)

- Responsible for developing drilling programs and providing 24/7 engineering support

- during execution phases of Coiled Tubing Drilling projects
- Delivered ~15 multi-million dollar projects on time and budget by working closely with multi-disciplinary teams and overseeing projects from start to finish
- Managed all long-lead material and inventory needs for the Alaska CTD program
- Developed new and innovative technologies with 3rd party vendors
- Ensured strict compliance with government regulations and maintained close communication with the Alaska Oil and Gas Association throughout all activities

Wells Supervisor (10/2016-09/2018)

- Responsible for the on-site execution, supervision, and safety for a wide range of well intervention jobs including slickline, e-line, service coil, and frac work
- Managed up to 6 crews at a time and ensured all crews had procedures, permits, and equipment necessary for daily activities
- Collaborated with engineers and contractors to come up with quick decisions for issues that arose during Well Intervention operations

Performance Engineer (06/2015-10/2016)

- Created and provided near real-time performance reports and KPIs for Drilling Operations
- Early adopter of Spotfire for data visualization and helped save over \$1MM through small efficiencies gained on highly repeatable tasks on the drilling rigs

Education

B.S. Petroleum Engineering, University of Alaska Fairbanks, 2015

- President - Tau Beta Pi, Engineering Honor Society (2014-2015)
- Chancellor's List (3.95 GPA)
- Minor, Music Performance
- Fairbanks Symphony Orchestra (2013-2015)
- Member of AADE and SPE (2011-2015)

Extracurriculars

American Association of Drilling Engineers, Alaska Chapter

- Board Member, University Liaison (10/2019-03/2021)

Ski Summit of Mount Denali (Self-Guided, 2019)

- Employed complex trip planning and risk management skills in a remote environment

Wilderness First Responder (2021)

- 80 hr WFR certification to effectively identify and manage medical emergencies in the outdoors

Bear 100 (2021)

- 100 mile mountain trail race in Utah, requiring a year of structured training, planning, and discipline

Rebecca Garrett, PMP

AEA Rural Programs Manager

rgarrett@akenergyauthority.org

Professional Work Experience

State of Alaska, Alaska Energy Authority, Rural Energy Group

Rural Programs Manager September 2022 - Present

Oversee the Rural Programs Projects Managers and Grants section. Manage Rural Power System Upgrade (RPSU) Program. Manage Bulk Fuel Upgrade (BFU) Program. Manage rural power system construction projects. Collaborate with other agency staff, rural community entities, and federal agencies to coordinate diverse interests in rural power system projects. Seek out and apply for funding for agency and partner energy projects.

State of Alaska, Alaska Energy Authority, Rural Energy Group

Project Manager/Program Manager February 2018 – September 2022

Manager Rural Power System Upgrade (RPSU) Program. Manage rural power system construction projects. Manage the active construction of 3 heat recovery systems around the state of Alaska. Manage State Clean Diesel (DERA) program for Alaska Energy Authority. Manage the DERA rural powerhouse engine replacement projects. Offer technical assistance to communities that need efficiency upgrades and/or are experiencing problems with the power system. Assist rural communities with funding opportunities and questions to expand the reach of energy projects and programs.

State of Alaska, Alaska Energy Authority, Rural Energy Group

Assistant Project Manager June 2014 – January 2018

Manage end use (conservation) projects. Manage rural power system construction. Manage the construction of heat recovery systems around the state of Alaska. Manage State Clean Diesel (DERA) program for Alaska Energy Authority. Offer technical assistance to communities that need efficiency upgrades and/or are experiencing problems with the power system. Assist rural communities with funding opportunities and questions to expand the reach of energy conservation. Coordinate the Rural Energy Conference every 18 months (2002-2016).

State of Alaska, Alaska Energy Authority, Rural Energy Group

Project Development/Project Manager January 2009 - June 2014

Manage end use efficiency (conservation) projects. Develop and present regional energy fairs around the state with a focus on energy efficiency. Assist rural communities with funding opportunities and questions to expand the reach of energy conservation. Coordinate the Rural Energy Conference every 18 months (2002-2016). Monitor section needs and lobby for additional support when necessary.

State of Alaska, Alaska Energy Authority, Alternative Energy and Energy Efficiency Section
Program/Project Manager September 1999 – January 2009

Manage end use efficiency (conservation) program. Develop and present regional energy fairs around the state with a focus on energy conservation. Assist rural communities with funding opportunities and questions to expand the reach of energy efficiency. Authorize and release the Energy Cost Reduction RFP. Administer each project that results from the Cost Reduction RFP analysis. Facilitate bi-weekly section meetings, and collaborate with Accounting and Procurement. Oversee 20 projects with budgets totaling over \$20 million all over the state of Alaska. Coordinate the Rural Energy Conference every 18 months (2002-2016).

Work History

State of Alaska - Alaska Energy Authority, Rural Programs Manager September 2022 - Present

State of Alaska - Alaska Energy Authority, Project/Program Manager February 2018 – September 2022

State of Alaska - Alaska Energy Authority, Assistant Project Manager June 2014 – January 2018

State of Alaska - Alaska Energy Authority, Project Development January 2009 – June 2014

State of Alaska - Alaska Energy Authority, Energy Efficiency Program May 2001 – May 2009

State of Alaska - Alaska Energy Authority, Training Program Manager May 1997 – May 2001

State of Alaska – Division of Energy, Administrative Clerk III March 1997 – May 1997

Avis Rent-a-Car, Assistant Manager – Rental Counter September 1992 – December 1997

Certifications

Project Management Professional (PMP) May 2018

Project Management Institute September 2015

Meeting Professionals International March 2007

Notary Public May 1997 – present

E-Writing, Business and Technical Writing March 2006

Post Baccalaureate Course Work

University of Alaska, Fairbanks May 2021

Sustainable Energy Occupational Endorsement

University of Alaska, Anchorage September 2006 – May 2007

Organizational Behavior (BA 300), Technical Writing (ENGL 212)

University of Alaska, Fairbanks March 1998

Cultural Awareness

Education

BA History, University of Alaska, Anchorage May 1996

Dimond High School, Anchorage Alaska June 1991

Volunteer Experience

State of Alaska, Polling Place Worker, Anchorage AK August 2020 -Seasonal

Primary and Election day worker at local polling station

Gladys Wood Elementary School, Volunteer, Anchorage AK September 2006 – 2013

Parent working in the classroom and Parent-Teacher Organization

Karin St. Clair
AEA Grants Manager
907-771-3081
kstclair@akenergyauthority.org

Professional Experience

Alaska Energy Authority – *Grants Manager* - Dec 2011-2016 & Aug 2019-Present

Maintain grants management database. Prepare reports from grants management software. Ensure data integrity in databases. Evaluate grantee proposal, plans and justifications to include cost factors. Process grant applications and obtain outstanding materials. Monitor and ensure timely receipt of reports from grantees. Monitor and administer federal and state grants and contracts. Collect and analyze grant data. Maintain electronic and physical files related to all aspects of the grant cycle. Prepare, scan, and verify historical documents for electronic conversion. Prepare grant agreements, notification letters, applications, and letters of inquiry. Communicate with Federal, State, and local agencies regarding award compliance. Review contracts for completeness, accuracy, and conformance with state regulations. Provide technical guidance to internal and external stakeholders on grant administration and financial policies, procedures, statutes, and regulations. Serve as liaison between the project managers and outside funding agencies; provides assistance in resolving issues and conflicts with funding agencies; participates in meetings and discussions in which decisions affecting projects are made. Inform grantees regarding regulation changes impacting grant opportunities. Process amendments, modifications, extensions, and terminations of contracts and subcontracts

Alaska Energy Authority – *Project Controls* - Jul 2016-Jan 2020

Track status reporting, financial reporting, milestones, and deliverables of projects. Track and audit internal controls and guidelines associated with project controls. Monitor budget, scope, and milestones. Provide leadership and training to team members on internal controls and guidelines associated with project controls. Recommend and execute corrective actions to handle project compliance. Identify upcoming project milestones and customer requirements so that Project Managers can ensure satisfaction of project milestones and customer requirements. Monitor and implement approved project management plan changes. Management of less complex projects and close outs. Identify all funding sources and develop a monitoring system for funding opportunities. Assist communities in writing grant applications. Assist in writing grant applications for agency.

Alaska Energy Authority – *Administrative Assistant* - Jun 2011-Dec 2011

Provided administrative support for various departments, including answering telephones, assisting visitors, resolving various problems, and assisting with inquiries. Prepared, transcribed, composed, typed, edited, and distributed agendas and minutes of numerous meetings. Scheduled and coordinated meetings, teleconferences, appointments, events, and other similar activities for staff, including travel and lodging arrangements. Assisted with Round V Grant Application data entry and file setup. Scanned, labeled, and tracked grant documents in award database (Navision). Entered milestones for grants in Navision. Created and maintained grant files and related paper documents. Tracked grant applications for Commercial Audit Program.

Communicated with auditors and commercial owners regarding project progress and missing information. Prepared reimbursement paperwork for the finance department

First National Bank Alaska - *Administrative Assistant* - 2009-2010

Prepared and assigned daily reports to Merchant Representatives. Logged and tracked the completion of reports by Merchant Representatives. Attended weekly staff meeting and transcribed meeting minutes. Arranged travel for Merchant Representatives. Monitored daily in town travel of merchant representatives. Monitored and ordered all supplies for department. Scheduled all trainings as well as reserved rooms and equipment needed. Composed and prepared mass mailings to merchants. Performed credit checks, acquired financial statements and business licenses for potential merchants. Worked with the IT Department in developing a new program for Merchant Services using Access and Excel. Responsible for merchant billing and collections. Answered multi-line phones, receive daily mail and incoming deliveries

Law Offices of Thom F. Janidlo Anchorage - *Administrative Assistant* - 2006-2009

Scheduled all attorney court hearings, client meetings and consultations. Transcribed during appropriate trial setting conferences and client meetings. Transcribed and prepared legal court documents. Performed legal research to assist attorneys with preparation of court documents. Maintained accurate records for attorney's billable hours. Identified more efficient and cost saving methods for ordering office supplies. Initiated the use of a credit card machine to assist in payment processing. Suggested the use of a scanner to replace paper processes, minimizing paper waste and expense. Answered multi-line phones, received daily mail and courier services. Computerized/Manual Accounts Payable/Receivable. Credit and Collections. Month-End-Closings. Account Reconciliation. Monthly Payroll Processing. Statement Billings. Customer Service/Client Relations. Office Management

Education

Project Management Institute- *Project Management Foundation* 2016

International Correspondence School- *Medical Office Assistant Certificate* 1999

Northwest College- *General studies* 1991-1992

Related Activities

- Thompson Grants
- Federal Grants Forum for State & Local Governments 2021
- Jim Hale
- Writing for the Workplace (one day seminar) 2014
- Gil Tran, Senior Technical Manager, OMB
- OMB's Grant Reform and the Uniform Guidance (one day seminar) 2014
- Colleen Campbell, State of Alaska Single Audit Coordinator
- State Single Audit Presentation (one day seminar) 2014
- Grants Management Workshop
- Grants Management Certificate (two day workshop certificate attached) 2012



Governor Mike Dunleavy
STATE OF ALASKA

May 18, 2023

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

RE: Letter of Commitment for Topic Area 3: Railbelt Innovation Resiliency Project (RIR)

Dear Grid Deployment Office,

The State of Alaska's Alaska Energy Authority (AEA) is pleased to team with the utilities that energize the Railbelt Region of Alaska to partner in the funding opportunity for Railbelt Innovation Resiliency Project (RIR) (DE-FOA-0002740).

AEA is a public corporation of the State of Alaska with the mission to "reduce the cost of energy in Alaska". AEA is the state's energy office and lead agency for statewide energy policy and program development. AEA owns the state's largest hydroelectric project and transmission segments of 228 miles that connect the southern, central, and northern Railbelt regions where approximately 75 percent of Alaska's population lives.

The State of Alaska fully supports the RIR Project, as well as other aspects of the broader Grid Modernization and Resiliency Plan that will be submitted to the DOE under separate applications. As the application reflects, there exists unprecedented alignment amongst the Railbelt utilities and AEA to materially transform the Railbelt electric system. We are committed to work collaboratively in order to strengthen and build a smart, clean electrical grid that ensures residents, communities, and the military bases who are served by the Railbelt electric utilities have access to low cost, reliable, and sustainable energy.

In December 2022, AEA along with the Railbelt utilities, closed on a bond of \$166 million for upgrading transmission and Battery Energy Storage Systems on the Railbelt. The bond funding is a potential match for this award. In addition, AEA will work with partners to provide the required match funds, through loans, utility funds, private entities, and from the State of Alaska, subject to legislative approval.

Sincerely,

A handwritten signature in blue ink, appearing to read "Mike Dunleavy".

Mike Dunleavy
Governor



May 12, 2023

Office of Clean Energy Demonstrations
U.S. Department of Energy
1000 Independence Ave SW
Washington, D.C. 20585

Subject: Conditional Letter of Commitment for the Railbelt Innovative Resiliency Project,
Submitted Under Topic Area 3, Grid Innovation Program, of Funding
Opportunity Announcement DE-FOA-0002740

Dear OCED Team,

Chugach Electric Association, Inc. (Chugach) is a not-for-profit electric cooperative in the State of Alaska. Chugach is the largest electric utility in the state and provides electric service to over 113,000 retail locations ranging from the Municipality of Anchorage to the northern Kenai Peninsula westward to Tyonek, including Fire Island, and eastward to Whittier.

Chugach submits herein its letter of support for the Railbelt Innovative Resiliency (RIR) Project related to the purchase and installation of two Battery Energy Storage Systems, one segment of high voltage, direct current (HVDC) subsea transmission, and one segment of high voltage AC transmission connecting the southern, central, and northern regions of the Railbelt grid in Alaska.

In recognition that the required engineering studies and attendant analysis identifying project need, impact, and benefit (value) to the Railbelt electric utilities, including the Chugach system (Required Studies), have not been completed, Chugach expressly conditions its letter of commitment and obligation to support in any way (including financial support) the RIR Project on the following:

1. Completion of the Required Studies to Chugach's satisfaction. It is Chugach's understanding that the Required Studies will be completed as part of the work plan and Chugach commits its financial support to an appropriate proportionate share of the costs associated with the execution of those studies in accordance with Chugach policy.
2. Execution of a definitive agreement between Chugach and the other utilities regarding specific and appropriate allocation of costs and responsibilities between the utilities.
3. Receipt of necessary approvals from Chugach's Board of Directors that the Required Studies provide sufficient benefits to Chugach and its members as determined by Chugach in its sole discretion.
4. Receipt of necessary regulatory approvals and third-party consents, on terms satisfactory to Chugach, including, in particular, Regulatory Commission of Alaska approval for project construction and cost recovery.

Chugach Electric Association, Inc.

5601 Electron Drive, P.O. Box 196300, Anchorage, Alaska 99519-6300 • (907) 563-7494 Fax (907) 562-0027 • (800) 478-7494
www.chugachelectric.com • info@chugachelectric.com

This letter reflects Chugach's intentions, however, neither this letter nor its acceptance as support for RIR Project application shall give rise to any legally binding or enforceable obligation on the part of Chugach. Such obligation shall only exist upon Chugach's written approval of the proposed grant agreement and Chugach's execution of the definitive agreement referenced above.

Please consider Chugach a participant in this grant application to complete the required engineering analysis and attendant required studies. We look forward to working with the Department of Energy and the other applicants in the evaluation and, if conditions are met, the execution of this project.

Sincerely,

A handwritten signature in black ink, reading "Arthur W. Miller". The signature is written in a cursive, flowing style.

Arthur W. Miller
Chief Executive Officer



- Main Office: (907) 224-4050
- Police: (907) 224-3338
- Harbor: (907) 224-3138
- Fire: (907) 224-3446
- City Clerk: (907) 224-4045
- Engineering: (907) 224-4049
- Utilities: (907) 224-4050
- Fax: (907) 224-4038

May 12, 2023
U.S. Department of Energy
Grid Deployment Office
1000 Independence Ave. SW
Washington D.C. 20585

RE: Letter of Commitment for Topic Area 3, Grid Innovation

Dear Grid Deployment Office:

Seward Electric System (SES), a small municipal power provider that serves approximately 3,000 residents in Southcentral Alaska, is pleased to submit this letter of support for the funding proposal for improving Grid Innovation.

SES supports the Railbelt Innovating Resiliency Project (RIRP) proposal and is hopeful the proposal receives DOE approval. SES is the smallest of the Railbelt utilities, but our customers are directly impacted by the investments made to improve the Railbelt grid. Clearly, grid innovation is an initiative that will benefit the many consumers who depend on the Railbelt utilities for clean, reliable and affordable electricity. For the initiative to be successful, financial support in the form of Department of Energy funding via the Infrastructure Investment and Jobs Act (IIJA) and the Inflation Reduction Act (IRA) is critically important.

If necessary, additional funding will also come from the Railbelt electric utilities, subject to successful negotiation of the grant contract and receipt of any necessary board/council, regulatory, and/or third-party approvals required to ensure that costs incurred by the utilities can appropriately be recovered in consumer rates. SES has been diligently working with the other Railbelt electric utilities and with the Alaska Energy Authority to ensure that the opportunities afforded by the DOE IIJA and IRA funding grants, once received, will meaningfully and positively transform the Alaska Railbelt electric system.

As the application reflects, the Railbelt utilities are united and are working with the Alaska Energy Authority to materially transform the Railbelt electric system and ensure our members/customers have a secure energy future.

Sincerely,


Rob V. Montgomery
General Manager
Seward Electric System



May 11, 2023

U.S. Department of Energy
Grid Deployment Office
1000 Independence Ave. SW
Washington D.C. 20585

RE: Letter of Commitment for Topic Area 3: Grid Innovation Program – Railbelt Innovative Resiliency Project

To the U.S. Department of Energy,

Golden Valley Electric Association, Inc. (GVEA) is pleased to team with the State of Alaska, d/b/a the Alaska Energy Authority, and the other Railbelt electric utilities¹ to partner in the funding opportunity for the Railbelt Innovative Resiliency Project (RIR) (DE-FOA-0002740).

GVEA is a not-for-profit, member owned, electric cooperative that serves nearly 100,000 residents in Interior Alaska. We operate and maintain nearly 3,300 miles of power lines, 35 substations and nine generating facilities. GVEA's electric system is interconnected with, and has the ability to serve, four critical military installations - Fort Wainwright, Eielson AFB, Fort Greely, and Clear AFS. GVEA is also interconnected to the other Railbelt electric utilities via a single transmission line, the majority of which is the Alaska Intertie – a 170 mile long, 345 kilovolt (kV) transmission line between Willow and Healy that operates at 138 kV. Together GVEA and the other Railbelt electric utilities comprise what is commonly referred to as the Alaska Railbelt electric system and provide electric service to approximately 75% of Alaska's population.

GVEA is supportive of the Railbelt Innovative Resiliency Project proposal and hopes that the proposal receives DOE approval. As a not-for-profit, member owned cooperative, GVEA has a fiduciary responsibility to our member-consumers, to ensure that GVEA's resources are used wisely and prudently. As essential as the Railbelt Innovative Resiliency Project is to achieve meaningful, transformative, long-term benefits on the Railbelt electric system, and to Copper Valley Electric Association, the cost of achieving those benefits cannot, from a practical perspective, be borne solely by Railbelt Ratepayers. Financial support in the form of Department of Energy funding via the Infrastructure Investment and Jobs Act (IIJA) and the Inflation Reduction Act (IRA) is critically necessary. For that reason, GVEA supports the cost allocation methodology

¹ Chugach Electric Association, Inc., Homer Electric Association, Inc., Matanuska Electric Association, Inc., and the City of Seward d/b/a Seward Electric System.

outlined in this and other applications submitted by this project team to the DOE's Grid Resilience and Innovation Partnerships (GRIP) Program that prioritizes securing Federal IIJA/IRA funds with State of Alaska matching funds for the "non-federal cost share requirement." If necessary, additional funding will also come from GVEA and the other Railbelt electric utilities, subject to successful negotiation of the grant contract and receipt of Board of Directors, regulatory, and/or third-party approvals required to ensure that costs incurred by the utilities can appropriately be recovered from the Railbelt's member-consumers. GVEA has been diligently working with the other Railbelt electric utilities and with the Alaska Energy Authority to ensure that the opportunities afforded by the DOE IIJA and IRA funding grants, once received, will meaningfully and positively transform the Alaska Railbelt electric system.

GVEA fully supports the Railbelt Innovative Resiliency Project, as well as other aspects of the broader Grid Modernization and Resiliency Plan that have been submitted to the DOE under separate applications. As the applications reflect, there exists unprecedented alignment amongst the Railbelt utilities and the Alaska Energy Authority to materially transform the Railbelt electric system. We are committed to work collaboratively in order to strengthen and build a smart, clean electrical grid that ensures residents, communities, and the military bases served by the Railbelt electric utilities have access to clean, reliable, low-cost energy.

Sincerely,

A handwritten signature in black ink, appearing to read "John J. Burns", with a stylized, flowing script.

John J. Burns
President & Chief Executive Officer



May 12, 2023

U.S. Department of Energy
Grid Deployment Office
1000 Independence Ave. SW
Washington D.C. 20585

RE: Letter of Commitment for Topic Area 3
Grid Innovation Program; Railbelt Innovative Resiliency Project

Dear Application Review Committee,

Matanuska Electric Association, Inc. (MEA) is pleased to team with the State of Alaska, d/b/a the Alaska Energy Authority, and the other Railbelt electric utilities¹ to partner in the funding opportunity for Railbelt Innovative Resiliency Project (RIR) (DE-FOA-0002740).

MEA is a not-for-profit, member owned, electric cooperative that serves almost 65,000 meters in the fastest-growing area of Alaska. We operate and maintain nearly 4700 miles of power lines, 26 substations and self-generate the majority of our power. MEA is interconnected to the other Railbelt electric utilities via a single transmission line, the majority of which is the Alaska Intertie – a 170 mile long, 345 kilovolt (kV) transmission line between Willow and Healy that operates at 138 kV. Together, MEA and the other Railbelt electric utilities comprise what is commonly referred to as the Alaska Railbelt Electric System and provides electric service to approximately 75% of Alaska's population.

MEA is supportive of the Railbelt Innovative Resiliency Project proposal and hopes that the proposal receives DOE approval. As a not-for-profit, member owned cooperative, MEA has a fiduciary responsibility to our member-consumers, to ensure that MEA's resources are used wisely and prudently. As essential as the Railbelt Innovation Resiliency Project is to achieve meaningful, transformative, long-term benefits on the Railbelt Electric System, the cost of achieving those benefits cannot, from a practical perspective, be borne solely by our small number of Railbelt ratepayers. Financial support in the form of Department of Energy funding via the Infrastructure Investment and Jobs Act (IIJA) and the Inflation Reduction Act (IRA) is critically necessary. For that reason, MEA supports the cost allocation methodology outlined in this and other applications being submitted by this project team to the DOE's Grid Resilience and Innovation Partnerships (GRIP) Program that prioritizes securing Federal IIJA/IRA funds with State of Alaska matching funds for the "non-federal cost share requirement." If necessary, additional funding will also come from MEA and the other Railbelt electric utilities, subject to successful negotiation of the grant contract and receipt of any necessary Board of Directors, regulatory, and/or third-party approvals required to ensure that costs incurred by the utilities can appropriately be recovered from the Railbelt's member-consumers. MEA has been diligently working with the other Railbelt electric utilities and with the Alaska Energy Authority to ensure that the opportunities afforded by the DOE IIJA and IRA funding grants, once received, will meaningfully and positively transform the Alaska Railbelt electric system.

¹ Chugach Electric Association, Inc., Homer Electric Association, Inc., Golden Valley Electric Association, Inc., and the City of Seward d/b/a Seward Electric System.

U.S. Department of Energy
Letter of Commitment for Topic Area 3
May 12, 2023
Page 2

MEA fully supports the Railbelt Innovative Resiliency proposal, as well as other aspects of the broader Grid Modernization and Resiliency Plan that has and will be submitted to the DOE under separate applications. As the application reflects, there exists unprecedented alignment amongst the Railbelt utilities and the Alaska Energy Authority to materially transform the Railbelt electric system. We are committed to work collaboratively in order to strengthen and build a smart, clean electrical grid that ensures residents, communities, and the military bases served by the Railbelt electric utilities have access to clean, reliable, low-cost energy.

Sincerely,

A handwritten signature in black ink, appearing to read "Anthony M. Izzo". The signature is stylized with a large, looped "A" and a cursive "Izzo".

Anthony M. Izzo
Chief Executive Officer



Homer Electric Association, Inc.

Corporate Office
3977 Lake Street
Homer, Alaska 99603-7680
Phone (907) 235-8551
FAX (907) 235-3313

Central Peninsula Service Center
280 Airport Way
Kenai, Alaska 99611-5280
Phone (907) 283-5831
FAX (907) 283-7122

May 11, 2023

U.S. Department of Energy
Grid Deployment Office
1000 Independence Ave. SW
Washington D.C. 20585

RE: Letter of Commitment for Topic Area 3: Grid Innovation

Dear Grid Deployment Office:

Homer Electric Association, Inc. (HEA) is pleased to submit this letter expressing its support for the funding proposal for improving Grid Innovation.

HEA is a not-for-profit, member owned, electric cooperative that serves the residents, businesses, and industrial facilities of the entire western Kenai Peninsula in the state of Alaska. HEA's electric system is interconnected with the other Alaska Railbelt electric utilities via a single transmission line between the HEA and Chugach Electric systems. Together HEA and the other Railbelt electric utilities comprise what is commonly referred to as the Alaska Railbelt Electric System and provide electric service to approximately 75% of Alaska's population.

HEA supports the Railbelt Innovating Resiliency Project (RIRP) proposal and hopes that the proposal receives DOE approval. As a not-for-profit, member owned cooperative, HEA has a fiduciary responsibility to its member-consumers, to ensure that HEA's resources are used wisely and prudently. As essential as transmission improvements are to achieving, transformative, long-term benefits on the Railbelt Electric System, the cost to HEA's members of secure those benefits must be understood before HEA can make a financial commitment to participate in funding the project. For that reason, HEA expects financial support in the form of Department of Energy funding via the Infrastructure Investment and Jobs Act (IIJA) and the Inflation Reduction Act (IRA) to be critically necessary. Accordingly, HEA commits to work with the other utilities and the State of Alaska to develop a firm cost allocation methodology for funding the "non-federal cost share requirement" of the initiatives as described in the applications being submitted by the Railbelt Utilities' project team to the DOE's Grid Resilience and Innovation Partnerships (GRIP) Program. HEA's funding obligation in this regard will be subject to HEA's final approval of the terms of the grant agreement and any necessary or appropriate Board of Directors, regulatory, and/or third-party approvals.

HEA fully supports the RIRP proposal, as well as other aspects of the broader Grid Modernization and Resiliency Plan that have been submitted to the DOE under separate applications. As the application reflects, there exists unprecedented alignment among the Railbelt utilities and the Alaska Energy Authority to create a resilient, reliable Railbelt electric system that would be on a

U.S. Department of Energy
Grid Deployment Office
May 11, 2023
Page 2

par with the systems currently enjoyed by the rest of the country. HEA is committed to work collaboratively in order to achieve that end.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Bradley P. Janorschke', with a stylized, cursive script.

Bradley P. Janorschke
General Manager

Congress of the United States
Washington, DC 20515

May 16, 2023

Gene Rodrigues, Assistant Secretary
U.S. Department of Energy
Office of Electricity
1000 Independence Avenue, SW
Washington, DC 20585

Dear Assistant Secretary Rodrigues,

We are writing in support of applications submitted by Matanuska Electric Association and the Alaska Energy Authority (AEA) for FY2023 funding through Topic Areas 1, 2, and 3 the Grid Resilience and Innovation Partnerships (GRIP) Program. The five Alaska Railbelt electric utilities and the State of Alaska's AEA are working in unison to design, fund and implement a program of grid modernization that will directly benefit the 75 percent of the state's population connected to the grid and indirectly benefit rural Alaskans who are geographically isolated from the Railbelt but are eligible for Alaska's innovative rural electric subsidy Power Cost Equalization program.

This is a once-in-a-generation opportunity for Alaskans to stabilize an aging grid by bringing it up to modern standards and enhancing resiliency in the face of unprecedented natural disasters, climate change and rugged geographic terrain. These improvements are critical to preparing Alaska for a fuel-diverse clean energy future and integrating new sources of energy along the grid, which spans a distance equivalent to the space between Atlanta, GA and Washington, D.C.

The benefit of this work reaches far beyond our state. The Railbelt grid supplies energy to five U.S. military bases of vital strategic importance to national security. These critical assets contribute to the national defense from a broad range of perspectives including missile defense, global telecommunications downlink infrastructure, and F-22 high-speed intercept capability. The Railbelt grid serves the Port of Alaska, a federally designated strategic seaport which provides virtually all of the cargo, food, fuel and building materials to the majority of Alaskans. And finally, the Railbelt grid serves Ted Stevens Anchorage International Airport – the third busiest airport in the world in terms of cargo throughput.

With the U.S. Department of Energy as a partner, Alaska's utilities and the State of Alaska will be positioned to demonstrate grid revitalization and decarbonization on a scale that can be replicated.

Thank you for your consideration of this application. Consistent with applicable law, policy, and guidance, we respectfully ask that you give due consideration to the Matanuska Electric Association and AEA's GRIP application. We ask that you keep our offices apprised of the outcome.

Sincerely,



Lisa Murkowski
United States Senator



Dan Sullivan
United States Senator



Mary Sattler Peltola
Representative for All Alaska



April 3, 2023

U.S. Department of Energy
Grid Deployment Office
Office of Clean Energy Demonstrations
Re: FOA DE-FOA-0002740

To Whom it May Concern:

We are writing today in support of the applications submitted by the members of the Bradley Lake Project Management Committee to Topic Areas 1, 2 and 3 of the Grid Resilience and Innovation Partnerships (GRIP) Program. The five railbelt electric utilities and the Alaska Energy Authority are working in unison to design, fund and implement a program of grid modernization, which will directly benefit over 70% of the state's population living connected to the railbelt grid and indirectly benefit rural Alaskans who are geographically isolated.

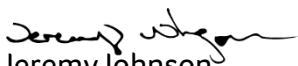
This is a once-in-a-generation opportunity for Alaskans to stabilize an aging grid, bringing it up to modern standards and creating resiliency in the face of unprecedented natural disaster, climate change and rugged geographic terrain. Perhaps most importantly, these improvements are critical to preparing the state for the future and integrating new sources of energy, whatever they may be and wherever they are created.

The Greater Fairbanks Chamber of Commerce supports efficient, affordable and reliable power production for Interior Alaska. We have more than 600 members, and they rely on the Golden Valley Electric Association, one of the railbelt utilities, to power homes and businesses and drive manufacturing, support resource development and bolster community services that make Alaska a place where current and future generations will thrive.

We hope the benefits of this historic federal investment reach a wide and diverse group of Alaskans, stimulates development opportunities and fosters growth.

Sincerely,

Greater Fairbanks Chamber of Commerce


Jeremy Johnson
President & CEO


Patrick Cotter
Board Chair

EXECUTIVE PARTNERS

DIAMOND

Alaska Airlines
Costco Wholesale
Denali State Bank
Foundation Health Partners
Mt. McKinley Bank

PLATINUM

ConocoPhillips Alaska
Doyon, Limited
Golden Heart Utilities
Hilcorp Alaska, LLC

GOLD

Contango Ore Inc.
Design Alaska
Doyon Utilities LLC
First National Bank Alaska
GHEMM Company, LLC.
Kinross Fort Knox
Northern Star Resources Limited
PeopleAK
TDL Staffing
TOTE Maritime Alaska
Usibelli Coal Mine
Westmark Fairbanks Hotel &
Fairbanks Princess Riverside Lodge
Wal-Mart

SILVER

Ahtna Incorporated
Alaska Railroad
AT&T
Everts Air Cargo, Everts Air AK
Exclusive Paving/University Redi-Mix
FNSB Riverside Division
Full Tilt Mechanical & Construction
Golden Valley Electric Association
Interior Gas Utility
JL Properties, Inc.
LifeMed Alaska
Lynden
MAC Federal Credit Union
McDonald's of Fairbanks
Northrim Bank
Robinson & Ward PC
Sourdough Fuel
Spirit of Alaska Federal Credit Union
Stewart Title Company – Yukon Division
Tower Hill Mines-Livengood Gold Project
University of Alaska Fairbanks
Vivamore Companies



ONE SEALASKA PLAZA, SUITE 302 • JUNEAU, ALASKA 99801
TEL (907) 586-1325 • FAX (907) 463-5480 • WWW.AKML.ORG

Member of the National League of Cities and the National Association of Counties

Grid Resilience and Innovation Partnerships (GRIP)
U.S. Department of Energy
DE-FOA-0002740

RE: Alaska's Railbelt Grid Modernization and Resiliency Plan

To Whom It May Concern,

The Alaska Municipal League (AML) is a voluntary, nonprofit, nonpartisan, statewide organization of 165 cities, boroughs, and unified municipalities, wherein over 97 percent of Alaskans reside. Since the passage of the Bipartisan Infrastructure Law, AML has focused its efforts to support strategic regional projects that address the long-standing inadequacy of Alaska's infrastructure. As part of this effort, we are proud to support projects that improve the condition of communities and intersect with Alaska's municipalities. We are excited to see the proposed project for the Alaska Railbelt's Grid Modernization and Resiliency Plan (GMRP) move forward.

Working to decarbonize Alaska's Railbelt grid is a particularly timely endeavor – state regulators have recently indicated that the natural gas supply that both power generation and other users rely on may not meet current demand within the next decade. This looming shortage puts economic activity throughout the state at risk by introducing long-term uncertainty to the key services that local governments and other organizations rely on from the Railbelt.

With some of the highest energy prices in the country, solutions to control cost are a critical economic challenge facing Alaska's communities and economic development. It's important to note that in addressing costs on the Railbelt, these projects also stand to benefit communities across the state via the Power Cost Equalization program. The formula for this critical program ties subsidies for energy across the state to Railbelt prices – thus, if the cost of electricity on the Railbelt is lowered, it provides a greater subsidy to those communities who are experiencing high costs, and in effect lowering the cost to consumers.

The GRMP is a strategic and collaborative effort that would go beyond the Railbelt to help make energy and the rural economies that depend on it more affordable and resilient. We fully support the GRMP and its associated projects.

Sincerely,

Nils Andreassen

Executive Director



March 10, 2023

U.S. Department of Energy
Grid Deployment Office
Office of Clean Energy Demonstrations
Re: FOA DE-FOA-0002740

To Whom it May Concern:

I'm writing today in support of the applications submitted by the members of Alaska's Bradley Lake Project Management Committee to Topic Areas 1,2 and 3 of the Grid Resilience and Innovation Partnerships (GRIP) Program. The five Railbelt electric utilities and the State of Alaska's Alaska Energy Authority are working in unison to design, fund and implement a program of grid modernization that will directly benefit over 70% of the state's population connected to the grid and indirectly benefit rural Alaskans who are geographically isolated from the Railbelt.

This is a once-in-a-generation opportunity for Alaskans to stabilize an aging grid, bringing it up to modern standards and bringing resiliency in the face of unprecedented natural disaster, climate change and rugged geographic terrain. Perhaps most importantly, these improvements are critical to preparing Alaska for a fuel-diverse clean energy future and integrating new sources of energy, whatever they may be and wherever they are created.

Anchorage Economic Development Corporation's mission is to grow and diversify the economy of Anchorage and Alaska. The health and future success of the local economy relies on the Railbelt electric grid to power homes and businesses, drive manufacturing, support resource development and bolster community services that make Alaska a place where current and future generations will thrive. Going forward, we look forward to engaging with the utilities and the State and partnering to make sure the benefits of this historic federal investment reach a wide and diverse group of Alaskans.

Thank you for your time and attention to Alaska's infrastructure needs. You may reach me at 907-334-1206 or wpopp@aedcweb.com with any questions or requests for information.

Sincerely,

A handwritten signature in blue ink, appearing to read "Bill Popp", is written over a faint, larger blue signature that is partially obscured.

Bill Popp
President & CEO



RAILBELT RELIABILITY COUNCIL (RRC)

March 10, 2023

U.S. Department of Energy
Grid Deployment Office
Office of Clean Energy Demonstrations
Re: FOA DE-FOA-0002740

Subject: Letter of Support for Alaska Railbelt GRIP Applications

To Whom it May Concern:

This letter expresses support for the applications submitted by the members of Alaska's Bradley Lake Project Management Committee to Topic Areas 1, 2 and 3 of the Grid Resilience and Innovation Partnerships (GRIP) Program.

The five railbelt electric utilities and the State of Alaska's Alaska Energy Authority are working in unison to design, fund and implement a program of grid modernization that will directly benefit over 70% of the state's population connected to the grid and indirectly benefit rural Alaskans who are geographically isolated from the railbelt.

This is a once-in-a-generation opportunity for Alaskans to stabilize an aging grid, bringing it up to modern standards and improving its resiliency against future natural disasters, climate change, and the ongoing challenges wrought by our rugged geographic terrain. Perhaps most importantly, these improvements are critical to preparing Alaska for a fuel-diverse clean energy future so new sources of energy can be fully integrated, whatever and wherever they may be.

The Railbelt Reliability Council (RRC) is a non-profit corporation certificated by the Regulatory Commission of Alaska (RCA) as the Electric Reliability Organization (ERO) responsible for performing Integrated Resource Planning and developing and enforcing Reliability, Security, and Non-Discriminatory Open Access Transmission and Interconnection Standards for the railbelt bulk energy system. The capital projects proposed in the GRIP applications will directly impact the system under the RRC's ERO jurisdiction.

The RRC was certificated less than six months ago, and is still in the process of staffing and organizing. As such, the RRC cannot at this time render opinions on the specific projects included within the GRIP applications. The RRC can affirm that the existing Railbelt grid has multiple single contingency elements, capacity bottlenecks, and technical and operational constraints that prevent optimal dispatch of the region's existing and potential future suite of generation resources. The RRC can also confirm that the existing Railbelt grid leaves some regions isolated for up to several months every year during periods of annual maintenance and, at times, for even longer due to natural disasters such as wildland fires.

The projects within the GRIP applications will address these long-standing limitations, and the parties involved in developing the GRIP applications are the best-available team to advance current proposals

for railbelt system improvements to address these limitations. Over the timeframe that these capital projects would unfold, the RRC will become fully functional, implementing standards and integrated resource plans that will in time directly influence the refinement, execution, and operation of the capital upgrades proposed in the GRIP applications.

The RRC Board of Directors is a balanced independent and stakeholder board whose directors represent the stakeholder interests of railbelt utilities, independent power producers, residential, industrial, and environmental consumers, and state agencies. The stakeholder interests represented on the RRC's board individually and collectively rely on the railbelt electric grid to power homes and businesses, drive manufacturing, support resource development, and bolster community services that make Alaska a place where current and future generations will thrive.

The RRC looks forward to continuing engagement with the utilities and the State in partnership to ensure the benefits of this historic federal investment reach a wide and diverse group of Alaskans. Thank you for your time and attention to Alaska's infrastructure needs. You may reach me via e-mail with any questions or requests for information.

Sincerely,
RAILBELT RELIABILITY COUNCIL

A handwritten signature in black ink, appearing to read 'Joel D. Groves', with a long horizontal line extending to the right.

Joel D. Groves, P.E.
President and Board Chair

joel@polarconsult.net

Serving Alaska Since Before Statehood



ALASKA CHAPTER

May 9, 2023

U.S. Department of Energy
Grid Deployment Office
Office of Clean Energy Demonstrations
Re: FOA DE-FOA-0002740

To Whom it May Concern:

I'm writing today in support of the applications submitted by the members of Alaska's Bradley Lake Project Management Committee to Topic Areas 1, 2, and 3 of the Grid Resilience and Innovation Partnerships (GRIP) Program. The five Railbelt electric utilities and the State of Alaska's Alaska Energy Authority are working in unison to design, fund and implement a program of grid modernization that will directly benefit over 75% of the state's population connected to the grid and indirectly benefit rural Alaskans who are geographically isolated from the Railbelt.

This is a once-in-a-generation opportunity for Alaskans to stabilize an aging grid, bringing it up to modern standards and bringing resiliency in the face of unprecedented natural disaster, climate change, and rugged geographic terrain. Perhaps most importantly, these improvements are critical to preparing Alaska for a fuel-diverse clean energy future as well as integrating new sources of energy, whatever they may be and wherever they are created.

The Alaska Chapter of the National Electrical Contractors Association (AK NECA) is recognized as the Alaska's representative of the electrical contracting industry representing the vast majority of electrical construction performed within the State of Alaska. More specifically, over 90% of the electrical construction hours performed in outside electrical transmission and distribution work statewide are performed by AK NECA Member Contractors. AK NECA's members and their employees rely on the Railbelt electric grid to power homes and businesses, drive manufacturing, support resource development, and bolster community services that make Alaska a place where current and future generations thrive. Going forward, we look forward to engaging with the utilities and the State in partnering to ensure the benefits of this historic federal investment reach the widest and most diverse group of Alaskans possible.

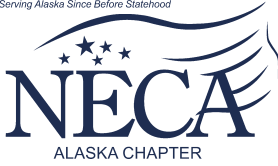
Thank you for your time and attention to Alaska's infrastructure needs. You may reach me at 1-907-561-1568, or Larry@alaskaneca.org with any questions.

Sincerely,

Larry Bell
Executive Manager
AK NECA

ALASKA JOINT ELECTRICAL APPRENTICESHIP AND TRAINING TRUST

Serving Alaska Since Before Statehood



MELISSA CARESS
Statewide Training Director
Tom Cashen Training Center
5800 B Street
Anchorage, AK 99518
Tel: (907) 337-9508
Fax: (907) 337-9500

CASEY PTACEK
Training Coordinator
Kornfeind Training Center
4782 Dale Road
Fairbanks, AK 99709
Tel: (907) 479-4449
Fax: (907) 479-0425



U.S. Department of Energy
Grid Deployment Office
Office of Clean Energy Demonstrations
Re: FOA DE-FOA-0002740

May 18, 2023

To Whom it May Concern:

I'm writing today in support of the applications submitted by the members of Alaska's Bradley Lake Project Management Committee to Topic Areas 1,2 and 3 of the Grid Resilience and Innovation Partnerships (GRIP) Program. The five Railbelt electric utilities and the State of Alaska's Alaska Energy Authority are working in unison to design, fund and implement a program of grid modernization that will directly benefit over 75% of the state's population connected to the grid and indirectly benefit rural Alaskans who are geographically isolated from the Railbelt.

This is a once-in-a-generation opportunity for Alaskans to stabilize an aging grid, bringing it up to modern standards and bringing resiliency in the face of unprecedented natural disaster, climate change and rugged geographic terrain. Perhaps most importantly, these improvements are critical to preparing Alaska for a fuel-diverse clean energy future and integrating new sources of energy, whatever they may be and wherever they are created.

The Alaska Joint Electrical Apprenticeship & Training Trust (AJEATT) is responsible for supplying apprentice manpower to the IBEW Local 1547 and AK NECA. These organizations represent the majority of the electrical work performed in the State of Alaska, whose members rely on the Railbelt electric grid to power homes and businesses and drive manufacturing, support resource development and bolster community services that make Alaska a place where current and future generations will thrive. Going forward, we look forward to engaging with the utilities and the State and partnering to make sure the benefits of this historic federal investment reach a wide and diverse group of Alaskans.

Thank you for your time and attention to Alaska's infrastructure needs. You may reach me at 1-907-337-9508, or melissa@ajeatt.org with any questions or requests for information.

Sincerely,

A handwritten signature in black ink, appearing to read "Melissa Carress", is written over a faint, stylized map of Alaska.

Melissa Carress
Statewide Training Director
AJEATT

STATEMENT OF PROJECT OBJECTIVES (SOPO)

Railbelt Innovation Resiliency Project (RIR)

A. OBJECTIVE

The Railbelt Innovation Resiliency Project (RIR) aims to enhance resiliency and transfer capability among the three regions of the Railbelt. The Railbelt has experienced decreasing frequency regulation, slowed disturbance response and increasing magnitude natural frequency oscillations. The current configuration of the Railbelt system restricts the adoption of clean energy, diversification of the fuel supply, and Alaska's preparation for a sustainable carbon-free future. A key priority to achieve this objective is to reinforce interconnections between the primary regions of the Railbelt by adding parallel lines and implementing Battery Energy Storage Systems (BESS) to resolve long-standing frequency control and instability issues. Alongside the High Voltage Direct Current (HVDC) submarine cable, these additions will alleviate transmission congestion and optimize interregional transfer capability. The project's innovative solutions hold the promise of curbing escalating energy prices, which currently rank among the highest in the nation, while providing rural residents and disadvantaged communities with an opportunity to enhance community viability. Sharing these solutions with other communities will support collective efforts toward achieving clean, reliable, and affordable energy for all.

B. SCOPE OF WORK

The RIR project involves four primary components to meet the project's objectives. The projects involve the interconnection of AC Transmission with a DC Bi-polar High Voltage Direct Current (HVDC) submarine circuit and three large capacity Battery Energy Storage systems (BESS). Coordinated interregional control and operations of the BESS and HVDC line will tie all the individual systems together to maximize stability and limit congestion.

Phase 1 – New 230kV interconnection from Soldotna and Beluga to the terminals of the Phase 2 HVDC submarine cable) – these components are necessary to add a parallel interconnection between the Southern Region to the Central Region. Combined with the HVDC line they will provide a second path from the Southern Region to Central region that will provide redundancy and limit exposure to fire danger and avalanches and maintenance and construction outages which have been the major cause of system separation. Tying to Beluga is necessary to fully utilize the existing transmission connections to the Central and Northern Regions.

Phase 2 - HVDC Submarine Circuit across Cook Inlet – The HVDC submarine Cable system provides for increased transfer capability and the ability to mitigate system stability challenges aiding in the elimination of interregional oscillations.

Phase 3 - BESS units in both Central Northern Regions and Southern (existing) will work to control frequency caused by transmission line or generation trips from either unplanned unit trips or non-dispatchable power swings caused by wind and solar. The BESS units are necessary to fully integrate variable renewable generation and will work in concert with the HVDC controllers to minimize system oscillations.

Phase 4 – New parallel interconnections between Central and Northern regions. Like Phase 1, the new path between the regions will not only improve resiliency and reliability but will increase energy transfer capability between the regions by 2-3 times. Providing a parallel path assures that all energy will continue to flow if the alternative path is lost. Major load swings between regions are also avoided by increasing system stability and allowing the lines to carry additional capacity reducing congestion.

C. TASKS TO BE PERFORMED

Task 1.0: Project Management and Planning (PMP):

Subtask 1.1 – Project Management Plan (PMP):

A PMP will be submitted within 60 days of the award.

Subtask 1.2: National Environmental Policy Act (NEPA) Compliance

The Applicant will undertake an Environmental Impact Study (EIS) with a lead agency (DOE) to identify and analyze possible adverse environmental impacts and investigate reasonable alternatives as appropriate.

Subtask 1.3: Cybersecurity Plan (CSP)

The Applicant will focus its efforts on protecting the Federal systems and its networks from cyber threats. The plan will incorporate processes to identify, investigate and mitigate threats from targeted phishing, denial of service attacks, and the introduction of malware into the system. A coordinated effort with the State, the utilities, and DOE will be undertaken to implement the tools necessary to provide continuous diagnostics and mitigation. The plan will be compliant with AKCIP standards.

A full cybersecurity plan will be submitted during award negotiations and prior to receiving project funding.

Subtask 1.4: Continuation Briefing(s):

A continuation briefing will be done on an annual basis to explain the plans, progress, and results of the technical effort.

Task 2.0: Preliminary Design, Community Benefit Plan (CBP) Outreach & Engineering – Design criteria for transmission lines, substations, submarine cable, converter stations, and BESS units.

Subtask 2.1 – Risk Evaluation – Evaluate transmission components.

Subtask 2.11 – Evaluate new transmission corridor for known events such as CBP input, avalanche, seismic, wildfire, heavy snow and ice loading.

Subtask 2.12 – Evaluate subsea cable routing for CBP input, undersea obstructions, tidal currents, ice scouring, and Beluga whale migration.

Subtask 2.13 – Evaluate BESS units for CBP input, fire suppression, temperature, and hazardous materials disposal.

Subtask 2.2 – Design Criteria – Develop tailored and innovative design criteria to mitigate input and risks identified in 2.1. Evaluate alternative routing alignment as necessary.

Subtask 2.3 – Preliminary Design – Engineer for submarine cable, converter stations, BESS units, foundations, anchors, guys, structure type, span length, conductor size, design, and sag. Evaluate potential right-of-way alignment, land ownership and permit requirements.

Task 3.0: Public Notice – Provide public notice of intent to construct, provide data, seek input, and provide feedback. Adjust design and routing as necessary to secure permits.

Task 4.0: Final Design & Engineering – Prepare final design documents for permitting and construction.

Task 5.0: Permitting – Undertake EIS and apply for permits from appropriate agencies.

Subtask 5.1 – Notice of Intent to Prepare EIS

Subtask 5.2 – Scoping process –Federal agency begins the scoping process by publishing a Notice of Intent (NOI). The NOI describes the project and provides background on potential impacts. The public provides comments on the proposed project, proposed alternatives, and environmental impacts. Applicant holds public meetings to obtain comments.

Subtask 5.3 – Notice of Availability of Draft EIS – the Draft EIS presents, analyzes, and compares potential environmental impacts and proposed actions for mitigation.

Subtask 5.4 – Notice of Availability of Final EIS – EIS prepared and distributed including comments from Draft EIS.

Subtask 5.5 – Record of Decision – Notice of decision and rationale for decision giving factors such as cost, technical feasibility, agency and national objectives, and environmental impacts of any actions.

Task 6.0: Procurement – Secure long-term materials such as submarine cable, inverters, converters, transformers, steel structures, and specialized equipment.

Task 7.0: Construction – Undertake construction process

Subtask 7.1 – Solicitation – prepare construction documents and evaluate most cost-effective method to seek bids.

Subtask 7.2 – Award – Award contracts for construction

Subtask 7.3 – Construction Management – Initiate project management office

Subtask 7.4 – Construction Close Out Process

Task 8.0: Testing & Commissioning – Undertake final inspection, energization, and cutovers as necessary.

D. DELIVERABLES

I. Management Reporting

- a. Progress Report
- b. Project Management Plan (PMP)
- c. Cybersecurity Plan
- d. Continuation Briefings

II. Financial Reporting

III. Closeout Reporting

E. BRIEFINGS/TECHNCIAL PRESENTATIONS

Briefings and technical presentations will be prepared as requested by the Federal Project Officer which may include a kickoff briefing, pre-continuation briefing, final project briefing and other technical, financial and/or administrative briefings as requested by the DOE.

Instructions and Summary

Award Number: _____
Award Recipient: _____

Date of Submission: _____
Form submitted by: _____
(May be award recipient or sub-recipient)

Please read the instructions on each worksheet tab before starting. If you have any questions, please ask your DOE contact!
Do not modify this template or any cells for formulas!

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

BURDEN DISCLOSURE STATEMENT

Public reporting burden for this collection of information is estimated to average 24 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of Information Resources Management Policy, Plans, and Oversight, AD-241-2 - GTN, Paperwork Reduction Project (1910-5162), U.S. Department of Energy 1000 Independence Avenue, S.W., Washington, DC 20585; and to the Office of Management and Budget, Paperwork Reduction Project (1910-5162), Washington, DC 20503.

SUMMARY OF BUDGET CATEGORY COSTS PROPOSED

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

Section A - Budget Summary								
		Federal	Cost Share			Total Costs	Cost Share %	Proposed Budget Period Dates
Budget Period 1		\$103,376,300	\$103,250,000			\$206,626,300	49.97%	1/1/2024-12/30/2025
Budget Period 2		\$103,348,768	\$103,250,000			\$206,598,768	49.98%	1/1/2026-12/30/2027
Budget Period 3		\$102,801,234	\$103,250,000			\$206,051,234	50.11%	1/1/2028-12/30/2029
Budget Period 4		\$103,473,699	\$103,250,000			\$206,723,699	49.95%	1/1/2030-12/30/2031
Budget Period 5		\$0	\$0			\$0	0.00%	
Total		\$413,000,000	\$413,000,000			\$826,000,000	50.00%	
Section B - Budget Categories								
CATEGORY	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Total Costs	% of Project	Comments (as needed)
a. Personnel	\$3,249,314	\$3,379,287	\$3,509,259	\$3,639,232	\$0	\$13,777,092	1.67%	
b. Fringe Benefits	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
c. Travel	\$117,600	\$117,600	\$117,600	\$117,600	\$0	\$470,400	0.06%	
d. Equipment	\$100,000	\$0	\$0	\$0	\$0	\$100,000	0.01%	
e. Supplies	\$80,000	\$80,000	\$80,000	\$80,000	\$0	\$320,000	0.04%	
f. Contractual								
Sub-recipient	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
Contractor	\$202,267,059	\$202,177,059	\$201,467,059	\$201,977,059	\$0	\$807,888,237	97.81%	
FFRDC	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
Total Contractual	\$202,267,059	\$202,177,059	\$201,467,059	\$201,977,059	\$0	\$807,888,237	97.81%	
g. Construction	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
h. Other Direct Costs	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
Total Direct Costs	\$205,813,974	\$205,753,946	\$205,173,919	\$205,813,891	\$0	\$822,555,729	99.58%	
i. Indirect Charges	\$812,326	\$844,822	\$877,315	\$909,808	\$0	\$3,444,271	0.42%	
Total Costs	\$206,626,300	\$206,598,768	\$206,051,234	\$206,723,699	\$0	\$826,000,000	100.00%	

Additional Explanation (as needed):

a. Personnel

INSTRUCTIONS - PLEASE READ!!!

1. List project costs solely for employees of the entity completing this form. All personnel costs for subrecipients and contractors must be included under f. Contractual.

2. All personnel should be identified by position title and not employee name. Enter the amount of time (e.g., hours or % of time) and the base hourly rate and the total direct personnel compensation will automatically calculate. Rate basis (e.g., rate negotiated for each hour worked on the project, labor distribution report, state civil service rates, etc.) must also be identified.

3. If loaded labor rates are utilized, a description of the costs the loaded rate is comprised of must be included in the Additional Explanation section below. DOE must review all components of the loaded labor rate for reasonableness and unallowable costs (e.g. fee or profit).

4. If a position and hours are attributed to multiple employees (e.g. Technician working 4000 hours) the number of employees for that position title must be identified.

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

[illegible]

Additional Explanation (as needed):

b. Fringe Benefits

INSTRUCTIONS - PLEASE READ!!!

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

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

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

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

Labor Type	Budget Period 1			Budget Period 2			Budget Period 3			Budget Period 4			Budget Period 5			Total Project
	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	Personnel Costs	Rate	Total	
EXAMPLE!!! Sr. Engineer	\$170,000	20%	\$34,000	\$10,000	20%	\$2,000	\$10,000	20%	\$2,000	\$10,000	20%	\$2,000	\$10,000	20%	\$2,000	\$38,000
			\$0			\$0			\$0			\$0			\$0	\$0
			\$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:	\$0		\$0	\$0		\$0	\$0		\$0	\$0		\$0	\$0		\$0	\$0

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.

SOPOTask #	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
1 and 2	In-State Trips - Northern Sites 10 trips per year; 2 people per trip. In-State Trips - Southern Sites 10 trips per year; 2 people per trip. Out of State Trips - 2 per year WA - DC Out of State Conference / Transmission Training	Anchorage	Northern Alaska	2	40	\$250	\$1,100		\$100	\$58,000	Previous experience
1 and 2		Anchorage	Southern Alaska	2	40	\$250	\$500		\$100	\$34,000	Previous experience
1 and 2		Anchorage	Out of State	5	2	\$1,000	\$1,500		\$500	\$12,000	Previous experience
1 and 2		Anchorage	Out of State	5	2	\$1,000	\$1,500	\$400	\$500	\$13,600	Previous experience
	International Travel									\$0	
	Budget Period 1 Total									\$117,600	
	Domestic Travel	Budget Period 2									
3 and 4	In-State Trips - Northern Sites 10 trips per year; 2 people per trip. In-State Trips - Southern Sites 10 trips per year; 2 people per trip. Out of State Trips - 2 per year WA - DC Out of State Conference / Transmission Training	Anchorage	Northern Alaska	2	40	\$250	\$1,100		\$100	\$58,000	Previous experience
3 and 4		Anchorage	Southern Alaska	2	40	\$250	\$500		\$100	\$34,000	Previous experience
3 and 4		Anchorage	Out of State	5	2	\$1,000	\$1,500		\$500	\$12,000	Previous experience
3 and 4		Anchorage	Out of State	5	2	\$1,000	\$1,500	\$400	\$500	\$13,600	Previous experience
	International Travel									\$0	
	Budget Period 2 Total									\$117,600	
	Domestic Travel	Budget Period 3									
5 and 6	In-State Trips - Northern Sites 10 trips per year; 2 people per trip. In-State Trips - Southern Sites 10 trips per year; 2 people per trip. Out of State Trips - 2 per year WA - DC Out of State Conference / Transmission Training	Anchorage	Northern Alaska	2	40	\$250	\$1,100		\$100	\$58,000	Previous experience
5 and 6		Anchorage	Southern Alaska	2	40	\$250	\$500		\$100	\$34,000	Previous experience
5 and 6		Anchorage	Out of State	5	2	\$1,000	\$1,500		\$500	\$12,000	Previous experience
5 and 6		Anchorage	Out of State	5	2	\$1,000	\$1,500	\$400	\$500	\$13,600	Previous experience
	International Travel									\$0	
	Budget Period 3 Total									\$117,600	
	Domestic Travel	Budget Period 4									
7 and 8	In-State Trips - Northern Sites 10 trips per year; 2 people per trip. In-State Trips - Southern Sites 10 trips per year; 2 people per trip. Out of State Trips - 2 per year WA - DC Out of State Conference / Transmission Training	Anchorage	Northern Alaska	2	40	\$250	\$1,100		\$100	\$58,000	Previous experience
7 and 8		Anchorage	Southern Alaska	2	40	\$250	\$500		\$100	\$34,000	Previous experience
7 and 8		Anchorage	Out of State	5	2	\$1,000	\$1,500		\$500	\$12,000	Previous experience
7 and 8		Anchorage	Out of State	5	2	\$1,000	\$1,500	\$400	\$500	\$13,600	Previous experience
	International Travel									\$0	
	Budget Period 4 Total									\$117,600	
	Domestic Travel	Budget Period 5									
										\$0	
										\$0	
										\$0	
										\$0	
	International Travel									\$0	
										\$0	
	Budget Period 5 Total									\$0	
	PROJECT TOTAL									\$470,400	

Additional Explanation (as needed):

d. Equipment

INSTRUCTIONS - PLEASE READ!!!

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

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

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

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

SOPO Task #	Equipment Item	Qty	Unit Cost	Total Cost	Basis of Cost	Justification of need
Budget Period 1						
3,4,5	EXAMPLE!!! Thermal shock chamber	2	\$70,000	\$140,000	Vendor Quote - Attached	Reliability testing of PV modules- Task 4.3
1,2	Office set-up	10	\$10,000	\$100,000	Previous experience	10 new staff office set-up
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
	Budget Period 1 Total			\$100,000		
Budget Period 2						
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
	Budget Period 2 Total			\$0		
Budget Period 3						
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
	Budget Period 3 Total			\$0		
Budget Period 4						
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
	Budget Period 4 Total			\$0		
Budget Period 5						
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
	Budget Period 5 Total			\$0		
	TOTAL EQUIPMENT			\$100,000		

Additional Explanation (as needed):

e. Supplies

INSTRUCTIONS - PLEASE READ!!!

1. Supplies are generally defined as an item with an acquisition cost of \$5,000 or less and a useful life expectancy of less than one year. Supplies are generally consumed during the project performance. Please refer to the applicable Federal regulations in 2 CFR 200 for specific supplies definitions and treatment.
2. List all proposed supplies below, providing a basis of costs (e.g. contractor quotes, catalog prices, prior invoices, etc.). Briefly justify the need for the Supplies as they apply to the Statement of Project Objectives. Note that Supply items must be direct costs to the project at this budget category, and not duplicative of supply costs included in the indirect pool that is the basis of the indirect rate applied for this project.
3. Multiple supply items valued at \$5,000 or less used to assemble an equipment item with a value greater than \$5,000 with a useful life of more than one year should be included on the equipment tab. If supply items and costs are ambiguous in nature, contact your DOE representative for proper categorization.
4. Add rows as needed. If rows are added, formulas/calculations may need to be adjusted by the preparer.
5. Each budget period is rounded to the nearest dollar.

SOPO Task #	General Category of Supplies	Qty	Unit Cost	Total Cost	Basis of Cost	Justification of need
Budget Period 1						
4,6	EXAMPLE!!! Wireless DAS components	10	\$360.00	\$3,600	Catalog price	For Alpha prototype - Task 2.4
1,2	Misc. Supplies	40	\$2,000.00	\$80,000	Previous experience	20 staff members - \$2,000/pp per year
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
Budget Period 1 Total				\$80,000		
Budget Period 2						
3,4	Misc. Supplies	40	\$2,000.00	\$80,000	Previous experience	20 staff members - \$2,000/pp per year
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
Budget Period 2 Total				\$80,000		
Budget Period 3						
5,6	Misc. Supplies	40	\$2,000.00	\$80,000	Previous experience	20 staff members - \$2,000/pp per year
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
Budget Period 3 Total				\$80,000		
Budget Period 4						
7,8	Misc. Supplies	40	\$2,000.00	\$80,000	Previous experience	20 staff members - \$2,000/pp per year
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
Budget Period 4 Total				\$80,000		
Budget Period 5						
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
				\$0		
Budget Period 5 Total				\$0		
TOTAL SUPPLIES				\$320,000		

Additional Explanation (as needed):

f. Contractual

INSTRUCTIONS - PLEASE READ!!!

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

2. Sub-recipients (partners, sub-awardees): Subrecipients shall submit a Budget Justification describing all project costs and calculations when their total proposed budget exceeds either (1) \$100,000 or (2) 25% of total award costs. These sub-recipient forms may be completed by either the sub-recipients themselves or by the preparer of this form. The budget totals on the sub-recipient's forms must match the sub-recipient entries below. A subrecipient is a legal entity to which a subaward is made, who has performance measured against whether the objectives of the Federal program are met, is responsible for programmatic decision making, must adhere to applicable Federal program compliance requirements, and uses the Federal funds to carry out a program of the organization. All characteristics may not be present and judgment must be used to determine subrecipient vs. contractor status.

3. Contractors: List all contractors supplying commercial supplies or services used to support the project. For each Contractor cost with total project costs of \$100,000 or more, a Contractor quote must be provided. A contractor is a legal entity contracted to provide goods and services within normal business operations, provides similar goods or services to many different purchasers, operates in a competitive environment, provides goods or services that are ancillary to the operation of the Federal program, and is not subject to compliance requirements of the Federal program. All characteristics may not be present and judgment must be used to determine subrecipient vs.contractor status.

4. Federal Funded Research and Development Centers (FFRDCs): FFRDCs must submit a signed Field Work Proposal during award application. The award recipient may allow the FFRDC to provide this information directly to DOE, however project costs must also be provided below.

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

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

SOPO Task #	Contractor Name/Organization	Purpose and Basis of Cost	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Project Total
6	EXAMPLE!!! ABC Corp.	Contractor for developing robotics to perform lens inspection. Estimate provided by contractor.	\$32,900	\$86,500				\$119,400
1 thru 8	Legal Services	State of Alaska or competitive bid	\$400,000	\$400,000	\$400,000	\$400,000	\$0	\$1,600,000
1 thru 8	Public Relations Firm	Competitive bid	\$42,059	\$42,059	\$42,059	\$42,059		\$168,237
2,3,4	Cultural Consultation	Competitive bid	\$100,000	\$100,000	\$100,000	\$100,000		\$400,000
2 thru 8	Design & Engineering Consultant	Competitive bid	\$400,000	\$400,000	\$400,000	\$400,000		\$1,600,000
2,3,4	Lands Consultant	Competitive bid	\$400,000	\$400,000	\$400,000	\$400,000		\$1,600,000
2 thru 7	Labor/Governmental Consulting	Competitive bid	\$225,000	\$225,000	\$225,000	\$225,000		\$900,000
1 thru 8	Project Coordination Committee	Competitive bid	\$600,000	\$600,000	\$60,000	\$600,000		\$1,860,000
1 thru 8	Contractor Federal Project Reporting	Competitive bid	\$150,000	\$150,000	\$150,000	\$150,000		\$600,000
2 thru 7	Contractor Projects	Competitive bid	\$199,500,000	\$199,500,000	\$199,500,000	\$199,500,000	\$0	\$798,000,000
2 thru 8	Accounting & Auditing Services	Competitive bid	\$150,000	\$150,000	\$150,000	\$150,000		\$600,000
4,5	Insurance Consultant	Competitive bid	\$100,000	\$10,000	\$10,000	\$10,000		\$130,000
4,5	NEPA Consultant	Competitive bid	\$200,000	\$200,000	\$30,000	\$0		\$430,000
		Sub-total	\$202,267,059	\$202,177,059	\$201,467,059	\$201,977,059	\$0	\$807,888,237

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	\$202,267,059	\$202,177,059	\$201,467,059	\$201,977,059	\$0	\$807,888,237
-------------------	---------------	---------------	---------------	---------------	-----	---------------

Additional Explanation (as needed):

g. Construction

PLEASE READ!!!

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

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

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

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

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

Additional Explanation (as needed):

h. Other Direct Costs

INSTRUCTIONS - PLEASE READ!!!
1. Other direct costs are direct cost items required for the project which do not fit clearly into other categories. These direct costs must not be included in the indirect costs (for which the indirect rate is being applied for this project). Examples are: tuition, printing costs, etc. which can be directly charged to the project and are not duplicated in indirect costs (overhead costs).
2. Basis of cost are items such as vendor quotes, prior purchases of similar or like items, published price list, etc.
3. Each budget period is rounded to the nearest dollar.

SOPO Task #	General Description and SOPO Task #	Cost	Basis of Cost	Justification of need
Budget Period 1				
5	EXAMPLE!!! Grad student tuition - tasks 1-3	\$16,000	Established UCD costs	Support of graduate students working on project
	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 OTHER DIRECT COSTS	\$0		

Additional Explanation (as needed):

i. Indirect Costs

INSTRUCTIONS - PLEASE READ!!!

1. Fill out the table below to indicate how your indirect costs are calculated. Use the box below to provide additional explanation regarding your indirect rate calculation.

2. The rates and how they are applied should not be averaged to get one indirect cost percentage. Complex calculations or rates that do not do not correspond to the below categories should be described/provided in the Additional Explanation section below. If questions exist, consult with your DOE contact before filling out this section.

3. The indirect rate should be applied to both the Federal Share and Recipient Cost Share.

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

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

	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Total	Explanation of BASE
Provide ONLY Applicable Rates:							
Overhead Rate	0.00%	0.00%	0.00%	0.00%	0.00%		Example: Labor + Fringe
General & Administrative (G&A)	0.00%	0.00%	0.00%	0.00%	0.00%		
FCCM Rate, if applicable	0.00%	0.00%	0.00%	0.00%	0.00%		
OTHER Indirect Rate	25.00%	25.00%	25.00%	25.00%	0.00%		
Indirect Costs (As Applicable):							
Overhead Costs	\$812,326	\$844,822	\$877,315	\$909,808	\$0	\$3,444,271	
G&A Costs						\$0	
FCCM Costs, if applicable						\$0	
OTHER Indirect Costs						\$0	
Total indirect costs requested:	\$812,326	\$844,822	\$877,315	\$909,808	\$0	\$3,444,271	

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.

AEA is in the process of developing an indirect cost allocation plan (ICAP) and is working with independent contractor to develop a cost model to track and allocate indirect costs for federal cost recovery. AEA will seek approval of the ICAP by their cognizant agency as required. AEA understands that this process will take up to two years for development of the ICAP and the required approval. Currently, AEA utilized the 10% de minimis rate in accordance with 2 CFR 200.414(f). AEA fully expects to have an approved ICAP and indirect cost rate by July 1, 2025 and therefore, for budgetary purposes only, AEA has used an estimated rate of 25%. AEA will only request reimbursement based on the 10% de minimis rate or an approved indirect cost rate.

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
State of Alaska	413000000	Subject to legislative approval, the state of Alaska will invest in this project	\$103,250,000	\$103,250,000	\$103,250,000	\$103,250,000		\$413,000,000
								\$0
								\$0
								\$0
								\$0
								\$0
								\$0
								\$0
								\$0
								\$0
								\$0
		TOTAL COST SHARE	\$103,250,000	\$103,250,000	\$103,250,000	\$103,250,000	\$0	\$413,000,000

Total Project Cost: \$826,000,000

Cost Share Percent of Award:50.0%

Additional Explanation (as needed):

Applicant Name: 0 Award Number: 0

Budget Information - Non Construction Programs

OMB Approval No. 0348-0044

Section A - Budget Summary							
Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget			
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)		Total (g)
1. Budget Period 1				\$103,376,300	\$103,250,000		\$206,626,300
2. Budget Period 2				\$103,348,768	\$103,250,000		\$206,598,768
3. Budget Period 3				\$102,801,234	\$103,250,000		\$206,051,234
4. Budget Period 4				\$103,473,699	\$103,250,000		\$206,723,699
5. Budget Period 5				\$0	\$0		\$0
6. Totals				\$413,000,000	\$413,000,000		\$826,000,001
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		\$3,249,314	\$3,379,287	\$3,509,259	\$3,639,232	\$0	\$13,777,092
b. Fringe Benefits		\$0	\$0	\$0	\$0	\$0	\$0
c. Travel		\$117,600	\$117,600	\$117,600	\$117,600	\$0	\$470,400
d. Equipment		\$100,000	\$0	\$0	\$0	\$0	\$100,000
e. Supplies		\$80,000	\$80,000	\$80,000	\$80,000	\$0	\$320,000
f. Contractual		\$202,267,059	\$202,177,059	\$201,467,059	\$201,977,059	\$0	\$807,888,237
g. Construction		\$0	\$0	\$0	\$0	\$0	\$0
h. Other		\$0	\$0	\$0	\$0	\$0	\$0
i. Total Direct Charges (sum of 6a-6h)		\$205,813,974	\$205,753,946	\$205,173,919	\$205,813,891	\$0	\$822,555,729
j. Indirect Charges		\$812,326	\$844,822	\$877,315	\$909,808	\$0	\$3,444,271
k. Totals (sum of 6i-6j)		\$206,626,300	\$206,598,768	\$206,051,234	\$206,723,699	\$0	\$826,000,000
7. Program Income							\$0

Railbelt Innovative Resiliency Project

Abstract

The Railbelt Innovative Resiliency Project (RIR) is a crucial initiative aimed at building a resilient, clean, smart, and affordable electrical grid in Alaska. The project involves constructing new transmission lines, providing a looped transmission feed to the DOD ground-based missile defense facility at Fort Greeley, interconnecting the Copper Valley Electric Association with the Railbelt grid, and incorporating Battery Energy Storage (BESS) and a High Voltage Direct Current (HVDC) submarine cable installed in a challenging marine environment.

One of the primary objectives of the RIR is to address various challenges facing the electrical grid in the three Railbelt regions of Alaska. These challenges include decreasing system frequency regulation, slowing frequency response to disturbances, and increasing natural frequency power oscillations. To overcome these challenges, the project emphasizes the need for BESS and a new transmission line between the Northern, Central, and Southern regions of the Railbelt system. Not only will these projects solve the challenges above they will increase interregional transfer capacity, fuel supply diversity, interregional resilience and reliability, lower carbon emissions, reduce costs, and incentivize the introduction additional private sector clean energy projects into the Railbelt. Finally, they will allow for unconstrained interregional capacity planning and operation.

The RIR work plan involves four phases, each with its own set of objectives and steps involved in construction, including permitting, routing, right-of-way access, and material delivery. The technical aspects of structure placement, soil conditions, foundation, and anchor design, as well as the switching and protection schemes required for the project, are also discussed.

The RIR is a unique partnership between relevant decision makers in the Railbelt, including the State of Alaska, Railbelt Electric Cooperatives, Railbelt municipal utility, utility regulator, and labor unions. The project will incentivize wise transmission investment through innovative rate-making techniques. Furthermore, it will have a direct positive impact on tribal and disadvantaged communities within the Railbelt and rural Power Cost Equalization communities.

Federal grant funding is critical to the success of the project. Without the significant rate increases that would negatively affect all ratepayers and would disproportionately affect disadvantaged and underserved communities, the investment required for this project exceeds the abilities of the Railbelt utilities, private sector, and the State.

Prime Applicant: Alaska Energy Authority (AEA)

Project Title: Railbelt Innovative Resiliency Project

Executive Director Principal Investigator	• Curtis Thayer • Bryan Carey
Key Personnel	• William Price • Clay Christian • Mark Ziesmer • Karin St. Clair
Key Partners	• Chugach Electric Association, Inc. • Golden Valley Electric Association, Inc. • Homer Electric Association, Inc. • Matanuska Electric Association, Inc. • The City of Seward, Alaska dba Seward Electric System • Regulatory Commission of Alaska
Proposed Project Duration	• 96 months

Total Project Costs	\$826 M
Federal Share	\$413 M
Match	\$413 M



Alaska Energy Authority (AEA)

Railbelt Innovative Resiliency Project

Railbelt Innovative Resiliency Project (RIR-The Project) aims to build a resilient, clean, smart, and low-cost electrical grid in Alaska.

- The Project is part of the Grid Modernization and Resiliency Plan to build a fuel-diverse, low-carbon economy in the Alaskan Railbelt.
- The Project involves building new transmission lines, looped transmission feed to Fort Greeley, interconnecting Copper Valley Electric Association, and incorporating BESS and HVDC submarine cable.
- BESS installations are needed to address challenges in the electrical grid such as decreasing system frequency regulation, slow frequency response to disturbances, and increasing natural frequency power oscillations.
- New transmission is needed to allow for renewable resource development and eliminate constraints on renewable energy development in the Railbelt.
- Objectives of the RIR and GMRP include increasing interregional transfer capability, resiliency, reliability, and reducing carbon emissions.
- Unique partnership between all relevant decision-makers in the Railbelt includes the State of Alaska, Railbelt Electric Cooperatives, Railbelt municipal utility, utility regulator, and labor unions.
- The Team has decades of experience in transmission line construction and operations including HV AC submarine cables, BESS installations, and power electronics like those used in HVDC-Ac converters.
- The project will incentivize wise transmission investment through innovative rate-making techniques.
- Federal grant funding is critical to the project's success as the investment required exceeds the abilities of the Railbelt utilities and the State, in the absence of significant rate increases that would disproportionately affect the disadvantaged and underserved.
- The Project has significant community benefit to underserved, disadvantaged, and tribal communities throughout the Railbelt and to all Alaska through the Power Cost Equalization fund.



U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

I. INSTRUCTIONS

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

II. QUESTIONNAIRE

A. PROJECT SUMMARY

1. Solicitation/Project Number: DE-FOA-0002740 Proposer: State of Alaska
2. This Environmental Questionnaire pertains to a: ☒ Recipient or Prime Contractor ☐ Sub-recipient or Subcontractor
3. Principal Investigator: Bryan Carey Telephone Number: 907-771-3000
4. Project Title: Railbelt Innovative Resiliency Project
5. Expected Project Duration: 8 years
6. Location of Activities covered by this Environmental Questionnaire: (City/Township, County, State):
Railbelt region of Alaska (from Soldotna north to Healy/Fairbanks)
7. List the full scope of activities planned (only for the location that is the subject of this Environmental Questionnaire).
Completion of transmission line from Soldotna to Nikiski; HVDC submarine cable from Nikiski to Beluga under Cook Inlet; and transmission line from Beluga to Healy.
Installation of two battery energy storage systems located in Anchorage at CEA and Wilson Substation in Fairbanks.
8. List all other locations where work would be performed by the primary contractor of the project and subcontractor(s). Each of the following must have an individual Environmental Questionnaire.

Subcontractor or sub-recipient	Location of activities for this project

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

Group A

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

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

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

Group B

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

Group C

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

B. PROPOSED PROJECT ALTERNATIVES

1. If applicable, list any project alternatives considered to achieve the project objectives.
Not applicable.

C. PROJECT LOCATION

1. Provide a brief description of the project location (physical location, surrounding area, adjacent structures).
Transmission line-Soldotna to Nikiski; beneath Cook Inlet from Nikiski to Beluga; and Beluga to Healy. BESS installations at Anchorage and Fairbanks.
2. Attach a project site location map of the project work area.
See attachment.

D. ENVIRONMENTAL IMPACTS

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

1. Land Use

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

☒ Urban	☐ Industrial	☐ Commercial	☐ Agricultural
☐ Suburban	☐ Rural	☐ Residential	☐ Research Facilities
☒ Forest	☐ University Campus	☒ Other: Submarine cable	

- b. Identify the total size of the facility, structure, or system and what portion would be used for the proposed project.
Transmission approximately 252 miles plus 38 miles submarine cable.

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 of transmission lines, HVDC submarine cable beneath Cook Inlet, and installation of 2 battery energy storage systems.

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

☐ No land areas would be affected.

Project area includes existing transmission line ROW and new ROW in under Cook Inlet and wilderness.

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

☐ No land areas would be affected.

Reseeding

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

☒ No ☐ Yes (describe)

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

Project passes through or near wilderness, Denali State Park, and Denali National Park.

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

Overhead transmission lines with the exception of submarine cable under Cook Inlet. See attached project site map

- 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)

Section of transmission line (HVDC submarine cable) would pass beneath Cook Inlet.

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

West side of the Sustina river drainage- Wetlands may be impacted.

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

- f. Would the proposed project include activities located on perma-frost, near fault zones, or involve fracturing, well drilling, geologic stimulation, sequestration, active seismic data collection, and/or deepwater operations?

☐ No ☒ Yes (describe)

Transmission lines traverse permafrost and fault zones.

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

Cook Inlet beluga whales

- b. Would any designated critical habitat be affected by the proposed project? ☐ No ☒ Yes (describe)
- The HVDC route may impact critical habitat of Upper Cook Inlet.

- 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)
- Project crosses general areas where migration of birds and animals occur.

4. Socioeconomic and Infrastructure Conditions

- a. Would local socio-economic changes result from the proposed project? ☐ No ☒ Yes (describe)
- Project anticipated to have positive impact of increased reliability, clean energy options, and reduction of electricity rates.

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

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

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

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

5. Historical/Cultural Resources

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

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

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

- d. Would the proposed project interfere with visual resources (e.g., eliminate scenic views) or alter the present landscape?
☐ No ☒ Yes (describe)
Transmission lines will be visible.

- 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 known tribal sensitivities for project area.

6. Atmospheric Conditions/Air Quality

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

	Attainment	Non-Attainment
O ₃ - 1 Hour	☒	☐
O ₃ - 8 Hour	☒	☐
SO _x	☒	☐
PM - 2.5	☐	☒
PM - 10	☒	☐
CO	☒	☐
NO ₂	☒	☐
Lead	☒	☐

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

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

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

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

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

	Maximum per Year	Total for Project
☐ SO _x		
☐ NO _x		
☐ PM - 2.5		
☐ PM - 10		
☐ CO		
☐ CO ₂		
☐ Lead		
☐ H ₂ S		
☐ Organic solvent vapors or other volatile organic compounds--List:		
☐ Hazardous air pollutants -- List:		
☐ Other -- List:		
☒ None		

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

- g. How would emissions be vented?
Not applicable.

7. Hydrologic Conditions/Water Quality

- a. What nearby water bodies may be affected by the proposed project? Provide distance(s) from the project site.
HVDC cable will be installed beneath Cook Inlet. Transmission lines will span over water bodies.
- b. What sources would supply potable and process water for the proposed project?
None.

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

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

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

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

- e. Identify the local treatment facility that would receive wastewater from the proposed project.

☒ No discharges to local treatment facility

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

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

- h. Would project require issuance of new or modified water permits to perform project work or site development activities?

☒ No ☐ Yes (describe)

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

- j. Would the proposed project be permitted to discharge effluents into an existing body of water?

☒ No ☐ Yes (describe water use and effluent impact)

- k. Would a new or modified National Pollutant Discharge Elimination System (NPDES) permit be required?

☒ No ☐ Yes (describe)

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

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

- m. Would the proposed project require issuance of an [Underground Injection Control \(UIC\)](#) permit?

☒ No ☐ Yes (describe)

- n. Would the proposed project be located in or near a wellhead protection area, drinking water protection area, or above a sole source aquifer or underground source of drinking water (USDW)?

☒ No ☐ Yes (describe)

8. Solid and Hazardous Wastes

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

	Annual Quantity
☒ Municipal solid waste (e.g., paper, plastic, etc.)	5 tons/yr (est)
☐ Coal or coal by-products	
☐ Other -- Identify:	
☐ Hazardous waste -- Identify:	
☐ None	

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

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

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

Construction debris disposal approved landfill or recycling facility.

- d. How would wastes for disposal be transported?

Via truck/covered load.

- e. Describe hazardous wastes that would be generated, treated, handled, or stored under this project. Hazardous waste information can be found at [EPA Hazardous Waste](#) website. ☒ None

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

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

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

☒ Not required ☐ Arrangements not yet made ☐ Arrangements made with a certified TSD facility (identify)

9. Health/Safety Factors

- a. Identify hazardous or toxic materials that would be used in the proposed project.

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

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

☒ None

- c. Would there be any special physical hazards or health risks associated with the project? ☐ No ☒ Yes (describe)
Typical risks involved at any construction site. Slips/trips/falls; confined space entry; power tool handling; noise; etc.

- d. Does a worker safety program exist at the location of the proposed project? ☐ No ☒ Yes (describe)
Project will have a safety program with oversight in place before any construction activities commence.

- e. Would additional safety training be necessary for any new laboratory, equipment, or processes involved with the project?
☐ No ☒ Yes (describe)
Safety training ongoing relevant to construction tasks of the project.

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

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

- h. Would hearing protection be required for workers? ☐ No ☒ Yes (describe)
Hearing protection would be required when operating power tools or heavy equipment.

10. Environmental Restoration and/or Waste Management

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

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

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

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

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

E. REGULATORY COMPLIANCE

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

- a. Resource Conservation and Recovery Act ([RCRA](#)): ☐ None ☒ New Required ☐ Modification Required
Describe:

No RCRA waste generation is anticipated during completion of this project. However, procedures will be in place to handle and dispose of accordingly.

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

Any CERCLA wastes (i.e. transformer oil) would be handled according to state and federal regulations.

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

Any TSCA wastes (asbestos, PCBs) would be handled in accordance with applicable state and federal regulations.

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

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

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

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

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

- h. Endangered Species Act (ESA): ☐ None ☒ New Required ☐ Modification Required
Describe:
Part of work would involve operating in Cook Inlet, critical habitat for Cook Inlet belugas. Any permits would be obtained prior to commencement of any work. Coordinate with NMFS.
- i. Floodplains and Wetlands Regulations: ☐ None ☒ New Required ☐ Modification Required
Describe:
Any permitting required for this project will be obtained.
- 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.
Project will be completed with stakeholder input. Permits required by Fish & Game, DNR, USACE, NMFS, NOAA, building permits, land use permits will be researched and obtained.
- F. **DESCRIBE ANY ISSUES THAT WOULD GENERATE PUBLIC CONTROVERSY REGARDING THE PROPOSED PROJECT.** ☐ None
There will be public comments on proposed plans.
- 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)

U.S. DEPARTMENT OF ENERGY

ENVIRONMENTAL QUESTIONNAIRE

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

Construction debris would be identified according to type and recycled or disposed of in accordance with local, state, and federal regulations.

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): 05/17/2023

Typed Name: Bryan Carey

Title: Director of Owned Assets

Organization: Alaska Energy Authority

IV. **REVIEW AND APPROVAL BY DOE**

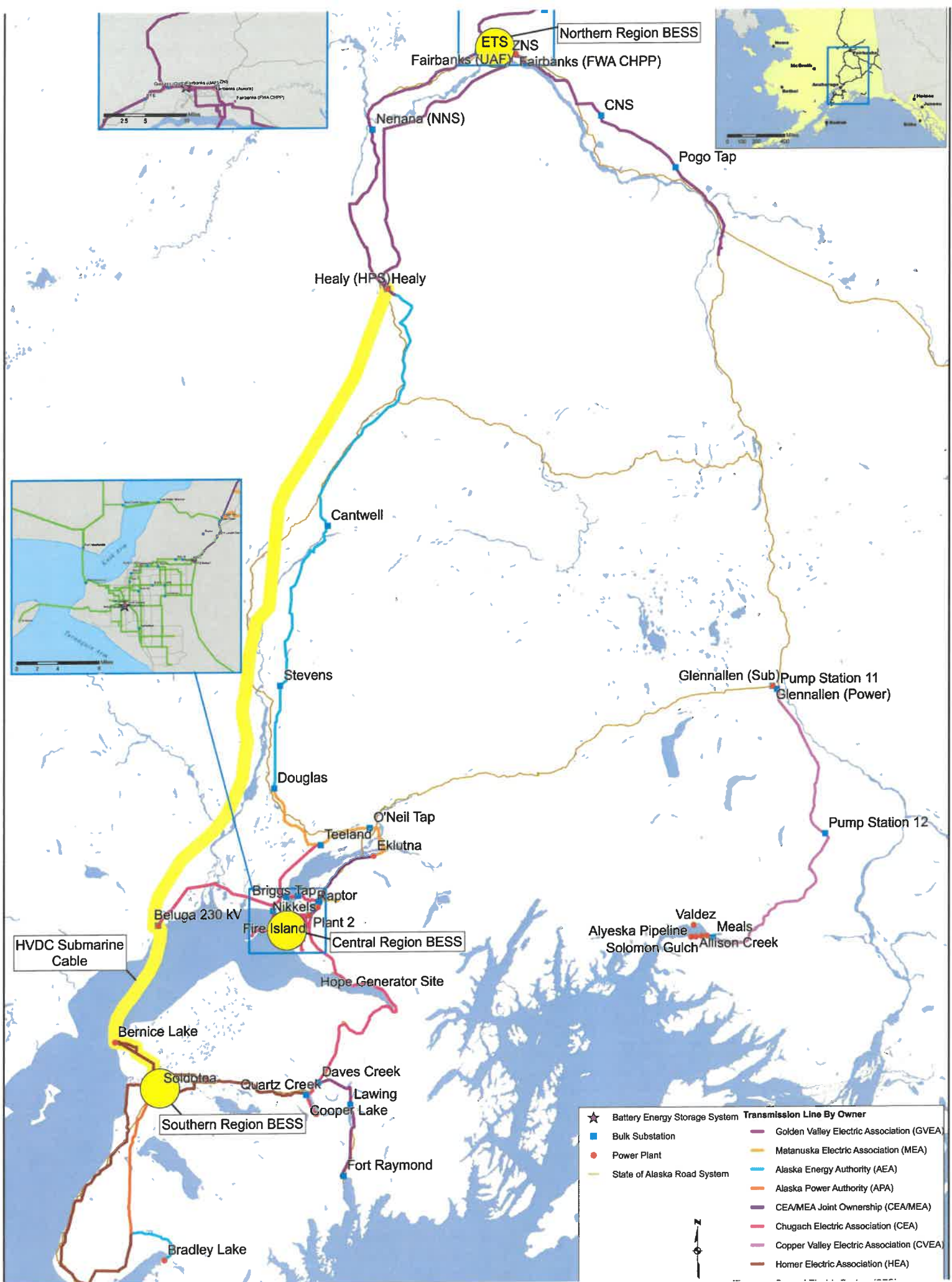
I hereby certify that I have reviewed the information provided in this questionnaire, have determined that all questions have been appropriately answered, and judge the responses to be consistent with the efforts proposed.

DOE Project Manager

Signature: 

Date (mm/dd/yyyy): 

Typed Name: 



STATEMENT OF PROJECT OBJECTIVES (SOPO)

Railbelt Innovation Resiliency Project (RIR)

A. OBJECTIVE

The Railbelt Innovation Resiliency Project (RIR) aims to enhance resiliency and transfer capability among the three regions of the Railbelt. The Railbelt has experienced decreasing frequency regulation, slowed disturbance response and increasing magnitude natural frequency oscillations. The current configuration of the Railbelt system restricts the adoption of clean energy, diversification of the fuel supply, and Alaska's preparation for a sustainable carbon-free future. A key priority to achieve this objective is to reinforce interconnections between the primary regions of the Railbelt by adding parallel lines and implementing Battery Energy Storage Systems (BESS) to resolve long-standing frequency control and instability issues. Alongside the High Voltage Direct Current (HVDC) submarine cable, these additions will alleviate transmission congestion and optimize interregional transfer capability. The project's innovative solutions hold the promise of curbing escalating energy prices, which currently rank among the highest in the nation, while providing rural residents and disadvantaged communities with an opportunity to enhance community viability. Sharing these solutions with other communities will support collective efforts toward achieving clean, reliable, and affordable energy for all.

B. SCOPE OF WORK

The RIR project involves four primary components to meet the project's objectives. The projects involve the interconnection of AC Transmission with a DC Bi-polar High Voltage Direct Current (HVDC) submarine circuit and three large capacity Battery Energy Storage systems (BESS). Coordinated interregional control and operations of the BESS and HVDC line will tie all the individual systems together to maximize stability and limit congestion.

Phase 1 – New 230kV interconnection from Soldotna and Beluga to the terminals of the Phase 2 HVDC submarine cable) – these components are necessary to add a parallel interconnection between the Southern Region to the Central Region. Combined with the HVDC line they will provide a second path from the Southern Region to Central region that will provide redundancy and limit exposure to fire danger and avalanches and maintenance and construction outages which have been the major cause of system separation. Tying to Beluga is necessary to fully utilize the existing transmission connections to the Central and Northern Regions.

Phase 2 - HVDC Submarine Circuit across Cook Inlet – The HVDC submarine Cable system provides for increased transfer capability and the ability to mitigate system stability challenges aiding in the elimination of interregional oscillations.

Phase 3 - BESS units in both Central Northern Regions and Southern (existing) will work to control frequency caused by transmission line or generation trips from either unplanned unit trips or non-dispatchable power swings caused by wind and solar. The BESS units are necessary to fully integrate variable renewable generation and will work in concert with the HVDC controllers to minimize system oscillations.

Phase 4 – New parallel interconnections between Central and Northern regions. Like Phase 1, the new path between the regions will not only improve resiliency and reliability but will increase energy transfer capability between the regions by 2-3 times. Providing a parallel path assures that all energy will continue to flow if the alternative path is lost. Major load swings between regions are also avoided by increasing system stability and allowing the lines to carry additional capacity reducing congestion.

C. TASKS TO BE PERFORMED

Task 1.0: Project Management and Planning (PMP):

Subtask 1.1 – Project Management Plan (PMP):

A PMP will be submitted within 60 days of the award.

Subtask 1.2: National Environmental Policy Act (NEPA) Compliance

The Applicant will undertake an Environmental Impact Study (EIS) with a lead agency (DOE) to identify and analyze possible adverse environmental impacts and investigate reasonable alternatives as appropriate.

Subtask 1.3: Cybersecurity Plan (CSP)

The Applicant will focus its efforts on protecting the Federal systems and its networks from cyber threats. The plan will incorporate processes to identify, investigate and mitigate threats from targeted phishing, denial of service attacks, and the introduction of malware into the system. A coordinated effort with the State, the utilities, and DOE will be undertaken to implement the tools necessary to provide continuous diagnostics and mitigation. The plan will be compliant with AKCIP standards.

A full cybersecurity plan will be submitted during award negotiations and prior to receiving project funding.

Subtask 1.4: Continuation Briefing(s):

A continuation briefing will be done on an annual basis to explain the plans, progress, and results of the technical effort.

Task 2.0: Preliminary Design, Community Benefit Plan (CBP) Outreach & Engineering – Design criteria for transmission lines , substations, submarine cable, converter stations, and BESS units.

Subtask 2.1 – Risk Evaluation – Evaluate transmission components.

Subtask 2.11 – Evaluate new transmission corridor for known events such as CBP input, avalanche, seismic, wildfire, heavy snow and ice loading.

Subtask 2.12 – Evaluate subsea cable routing for CBP input, undersea obstructions, tidal currents, ice scouring, and Beluga whale migration.

Subtask 2.13 – Evaluate BESS units for CBP input, fire suppression, temperature, and hazardous materials disposal.

Subtask 2.2 – Design Criteria – Develop tailored and innovative design criteria to mitigate input and risks identified in 2.1. Evaluate alternative routing alignment as necessary.

Subtask 2.3 – Preliminary Design – Engineer for submarine cable, converter stations, BESS units, foundations, anchors, guys, structure type, span length, conductor size, design, and sag. Evaluate potential right-of-way alignment, land ownership and permit requirements.

Task 3.0: Public Notice – Provide public notice of intent to construct, provide data, seek input, and provide feedback. Adjust design and routing as necessary to secure permits.

Task 4.0: Final Design & Engineering – Prepare final design documents for permitting and construction.

Task 5.0: Permitting – Undertake EIS and apply for permits from appropriate agencies.

Subtask 5.1 – Notice of Intent to Prepare EIS

Subtask 5.2 – Scoping process –Federal agency begins the scoping process by publishing a Notice of Intent (NOI). The NOI describes the project and provides background on potential impacts. The public provides comments on the proposed project, proposed alternatives, and environmental impacts. Applicant holds public meetings to obtain comments.

Subtask 5.3 – Notice of Availability of Draft EIS – the Draft EIS presents, analyzes, and compares potential environmental impacts and proposed actions for mitigation.

Subtask 5.4 – Notice of Availability of Final EIS – EIS prepared and distributed including comments from Draft EIS.

Subtask 5.5 – Record of Decision – Notice of decision and rationale for decision giving factors such as cost, technical feasibility, agency and national objectives, and environmental impacts of any actions.

Task 6.0: Procurement – Secure long-term materials such as submarine cable, inverters, converters, transformers, steel structures, and specialized equipment.

Task 7.0: Construction – Undertake construction process

Subtask 7.1 – Solicitation – prepare construction documents and evaluate most cost-effective method to seek bids.

Subtask 7.2 – Award – Award contracts for construction

Subtask 7.3 – Construction Management – Initiate project management office

Subtask 7.4 – Construction Close Out Process

Task 8.0: Testing & Commissioning – Undertake final inspection, energization, and cutovers as necessary.

D. DELIVERABLES

- I. Management Reporting**
 - a. Progress Report
 - b. Project Management Plan (PMP)
 - c. Cybersecurity Plan
 - d. Continuation Briefings
- II. Financial Reporting**

III. Closeout Reporting

E. BRIEFINGS/TECHNCIAL PRESENTATIONS

Briefings and technical presentations will be prepared as requested by the Federal project Officer which may include a kickoff briefing, pre-continuation briefing, final project briefing and other technical, financial and/or administrative briefings as requested by the DOE.

Community Benefits Plan: Job Quality and Equity

The Bradley Lake Hydroelectric Project, completed in 1991, brought together the State of Alaska (dba Alaska Energy Authority) and six of the Railbelt's utility providers: 1) Chugach Electric Association, 2) Golden Valley Electric Association, 3) Homer Electric Association, 4) Matanuska Electric Association, 5) Seward Electric System, and 6) Municipal Light and Power¹. The first four are member-owned cooperatives; Seward Electric System is owned and operated by City of Seward. Anchorage's Municipal Light and Power was subsequently acquired by Chugach Electric Association. Together they provide approximately 80% of Alaska's electricity.²

The State and these utilities have developed an efficient partnership through management and operation of the Bradley Lake Hydroelectric Project. Acting jointly, they assembled a project team (the Team) and have drafted a Grid Modernization and Resiliency Plan (GMRP), which seeks to update Alaska's outdated grid infrastructure in order to unconstrain the Bradley Lake project (the Project), improve the resiliency of power delivery from the Project and throughout the grid, reduce carbon emissions, ease the entry barriers to other clean power projects, and lighten the energy burden for three quarters of Alaska's population.

Included in GMRP is the Railbelt Innovation Resiliency (RIR) project—the subject of this application. In this funding cycle, the RIR seeks to construct an interregional transmission line (including a high voltage direct current submarine cable) parallel to the line that currently ties together the Railbelt's Southern and Central regions, an interregional transmission line parallel to the line that currently ties the Central and Northern regions together, as well as two Battery Energy Storage Systems (BESS). In a future funding cycle, the RIR includes a transmission line from the Central region to the Copper Valley system, and on to the Ground Based Missile Defense System at Fort Greely in the Northern region. RIR is coordinated with, but distinct from, the Team's requests in GRIP Topic Areas 1 and 2. The group's GRIP Topic Area 1 proposal seeks to reconstruct the existing transmission system backbone, while our Topic Area 2 proposal seeks to design and procure the interregional battery-HVDC control and monitoring system. Given the interconnectedness of these three projects (which, taken together, compose the GMRP), community vetting for all three projects will be completed through a single coordinated public outreach effort as outlined below.

1. Community and Labor Engagement

The Team recognizes that broad support for GMRP is necessary for successful project implementation. An effective public participation process draws on diverse perspectives from a broad cross-section of stakeholders. The Team looks forward to incorporating this public knowledge into both GMRP and RIR. The five utilities will form hubs for this process, since their properties will host many of the physical improvements and they already possess open communication channels with relevant stakeholders. Hiring a contractor to complete the GMRP

¹ In 2020, Chugach Electric acquired Municipal Light and Power

² [Alaska's Energy Infrastructure | REAP \(https://alaskarenewableenergy.org/ppf/alaskas-energy-infrastructure\)](https://alaskarenewableenergy.org/ppf/alaskas-energy-infrastructure)

public participation plan is anticipated to cost \$120,000. This cost is included in the project budget.

GMRP Public Participation Plan

Phase 1: Draft GMRP Public Participation Plan (1st and 2nd quarter 2024).

Assuming we are selected for federal financial assistance and matching funds are in place, the Team intends to complete the following deliverables by 3rd quarter 2024³:

1.	Define purpose and goals of GMRP public participation plan.
2.	Select the team members to manage the GMRP public participation plan.
3.	Select consulting firm to assist with GMRP public participation plan.
4.	Select environmental consultant to complete EIS for underwater HVDC submarine cable portion of RIR and field related stakeholder questions/input.
5.	Identify stakeholder groups affected by GMRP.
6.	Draft stakeholder engagement strategies and outreach media. Include strategies designed to ensure participation from minority groups and disadvantaged communities affected by project.
7.	Draft sample graphics and key messages. A focus group will be used to test the effectiveness of these materials on diverse populations.
8.	Draft SMART (specific, measurable, achievable, relevant, and time-bound) DEIA (Diversity, Equity, Inclusion, Accessibility) goals, including potential support for creation of minority business enterprises in disadvantaged communities; and SMART commitments to workers, stakeholders, and those vulnerable to project activities, including a commitment that work performed with GRIP funding will be done in compliance with Alaska public contracting law.
9.	Finalize public participation plan schedule.
10.	Launch GMRP website with public meeting schedule, GMRP description, and public comment section. This website will remain live until at least January 2031.

Phase 2: Implement GMRP Public Participation Plan (2nd quarter 2024).

The Alaska Energy Authority, representing the State of Alaska, is the lead applicant for this project. They are accustomed to engaging with local governments and tribal entities regarding permitting and regulatory processes for capital projects. Under the GMRP public participation plan, these conversations will begin early to inform project development in response to local communities' needs and concerns. The Team believes that local governments and tribal entities are uniquely situated to identify actions the project can take to advance progressive workforce, DEIA, and environmental justice outcomes at the community level. Certain local meeting series may be accelerated as needed to allow time for sufficient public participation in individual projects represented in GMRP (such as RIR) that may be ready for construction as early as spring 2024.

³ All dates are subject to revision based on grant award date and the timing of successful obtainment of matching funds.

AEA will work closely with each utility provider to determine the appropriate time and setting for each community visit, taking care to avoid conflicts with other events. When possible, the AEA will use existing community events and meetings to gather input. The core team will devote special attention to ensuring diverse demographic participation at all meetings, including hosting all meetings outside of working hours.

Task 1: Introductory Work Sessions (2nd or 3rd quarter 2024).

Each of the five utility providers will host an introductory public work session. These work sessions will be advertised at least two weeks in advance via social media, public postings, utility cooperative mailers, text messages, and the GMRP website. Topics will include:

1.	Review the GMRP: Communicate what it encompasses, costs, and its projected timeline and potential impacts; Identify stakeholders affected and their various value propositions; Provide extra detail about projects in GMRP that are shovel ready such as segments of RIR included in this GRIP application.
2.	Communicate how the public can learn more, track project progress, and how their feedback will be used.
3.	Share success stories as well as lessons learned from other electrical infrastructure upgrades conducted on the Railbelt.
4.	Discuss structure of the Team and the roles and responsibilities of the six parties that constitute it.
5.	Discuss metrics that will be used to measure the success of GMRP implementation.
6.	Share proposed list of community organizations with whom the Team will conduct one-on-one outreach meetings, with an emphasis on organizations that serve disadvantaged populations. Solicit suggestions for additional organizations.
7.	Present and solicit feedback on SMART DEIA goals, including support for creation of minority business enterprises in disadvantaged communities, and SMART commitments to workers, stakeholders, and those vulnerable to project activities, as developed during Phase 1.
8.	Identify areas where stakeholders wish to have more data or information via questions like: "What should the Team consider that we haven't covered today?" "What information would you like to see at a future meeting?" "What additional questions do you have?"
9.	Query and catalog any public concerns regarding the project.

Task 2: Data Collection and Materials Refinement (2nd or 3rd quarter 2024)

A series of core team meetings will be held to refine the GMRP public participation plan in light of feedback gathered during initial work sessions. At this point, deadlines and core team leads will be decided for the following deliverables:

1.	Conduct data collection and research as needed (including surveys) to address data gaps identified by the public. Surveys will be distributed electronically or made available at key community locations. We would not expect to get a statistically valid sample of the entire Railbelt population but enough feedback to assess community perspectives from a cross-section of stakeholders.
----	---

2.	Develop ArcGIS Online mapping tool for GMRP website. By hosting an interactive map of the project, the Team can solicit public comments that are geocoded by location, allowing identification of site-specific issues, needs, and themes.
3.	Minutes from introductory work sessions as well as public comments from GMRP website coalesced to capture key themes and messages and posted to website.
4.	Finalize: List of organizations with which to conduct one-on-one work sessions; SMART DEIA goals; SMART commitments.

As part of this task, the core team will continue to utilize various stakeholder engagement tools to share project information, promote opportunities to get involved, and invite public input.

Task 3: One-on-One Organizational Work Sessions and “Going to the People” (no later than 1st quarter 2025)

1.	Work sessions with relevant organizations will be conducted. Early engagement with these groups will guide GMRP revisions and establish constructive relationships, as many of these groups will be critical partners throughout GMRP implementation. Discussion topics to include: environmental impacts (particularly around HVDC submarine cable included in RIR), viewshed impacts, subsistence impacts, state and federal land management, Power Cost Equalization, workforce development (including apprenticeships), support for minority business enterprises, DEIA recruitment, DEIA workplace policies, and state legislation. These meetings will follow the same template as the intro public work sessions (<i>Task 1</i>), communicating an overview of GMRP and inviting organizations to provide feedback. Minutes will be recorded. Examples of relevant organizations and Minority Serving Institutions with whom meetings will be sought include: Alaska Federation of Natives, Alaska Village Electric Cooperative*, University of Alaska, Alaska Pacific University, Alaska Black Caucus*, RurAL CAP, Alaska Municipal League*, IBEW Local 1547*, IUOE Local 302*, Alaska State Office of Veterans Affairs, Alaska Chapter of the National Electrical Contractors Association*, Alaska Operating Engineers Training Trust*, Alaska Joint Electrical Apprenticeship & Training Trust*, Railbelt Tribal councils, and Railbelt City Councils.⁴ A. In addition to NEPA Process requirements, meetings will be sought with Alaska Department of Fish and Game, National Marine Fisheries Service, and Kenaitze and Knik Tribal Councils to discuss best practices to minimize environmental impacts from the placing of a submarine HVDC cable through Cook Inlet, which is home to an endangered population of Beluga whales.
2.	Additional outreach will be conducted at existing meetings in each project area, such as: Tribal Council meetings, City Council meetings, and Chamber of Commerce lunches. Outreach will also be conducted in more informal settings in an attempt to recruit a more diverse group of stakeholders. The Team refers to this process as “G2P” or “Going to the People”. Examples of events suitable for G2P include: Alaska Federation of Natives Convention, Alaska Black Caucus Sunday night Zoom meetings, Alaska State Fair, community farmers’ markets, Juneteenth programming, Alaska Federation of Filipino Americans programming, Sportsman shows, music festivals, and more.

Task 4: Public Feedback Sharing (3rd quarter 2024)

⁴ Asterisked organizations are those with whom preliminary contact about GMRP has already been made.

A second round of public meetings will be hosted by the five utilities as well as Alaska Energy Authority. Topics will include:

1.	Recap GMRP purpose, goals, and timeline.
2.	Themes and key takeaways from introductory work sessions, one-on-one org meetings, G2P events, and survey results.
3.	Share SMART DEIA goal revisions and SMART commitments revisions.
4.	Have stations set up around different topics: Participants can walk from station to station to learn about different elements of the project such as submarine HVDC cable, timeline, DEIA goals, labor commitments, environmental impacts, employment opportunities, homeowner impacts, and ask questions of project staff about the areas they are most interested in.
5.	Demonstration and launch of ArcGIS mapping tool on GMRP website.
6.	Request for additional feedback or concerns not captured thus far.
7.	Minutes from this meeting will be posted to GMRP website.

Task 5: Internal GMRP Finalization (3rd quarter 2024)

The Team will meet to discuss the Public Feedback Sharing and assign task leads for the following deliverables:

1.	GMRP final draft with incorporated stakeholder feedback.
2.	Final draft of SMART DEIA goals and SMART commitments.

Task 6: Board/Leadership Presentations (4th quarter 2024)

1.	Final draft GMRP, SMART DEIA goals, and SMART commitments presented to each utility board and AEA leadership by the Team. Requested changes catalogued in detail.
2.	Core Team meetings to incorporate requested changes from utility boards and AEA leadership. If funded through this application, these changes will be considered only where doing so allows GMRP to remain in compliance with Department of Energy Grid Deployment Office DE-FOA-0002740 job equality and equity, community and labor engagement, quality jobs, and DEIA requirements.
3.	Revised final draft GMRP, SMART DEIA goals, and SMART commitments (including commitment to comply with State of Alaska public contracting law) presented to each board and AEA leadership. Presentations to focus on requested changes from previous meeting, and whether those changes were implemented. Each board will be asked to ratify these documents. If they do not approve the revised final drafts, a second round of edits and board presentations will be scheduled.
4.	The board-ratified GMRP, SMART DEIA goals, and SMART commitments will be posted to the GMRP website. Outreach media—including emails to those who attended the previous two public meetings—will direct the public to these finalized documents.

2. Investing in the American Workforce

Alaska's Economy Relies on the Railbelt

RIR and GMRP will provide significant secondary benefits to most sectors of Alaska's economy. In addition to serving as home to three quarters of Alaska's population, the Railbelt, and

particularly Anchorage, is the economic heart of Alaska, shunting labor, supplies, and goods to and from all corners of the state. While a quantitative analysis of the impact of the Railbelt on Alaska's state economy lies outside the scope of this Community Benefits Plan, the magnitude of its import can be illustrated through a quick overview of the Port of Alaska, a potential beneficiary of this project as a customer of Chugach Electric Association:

The Port of Alaska, located in Anchorage, is a federally designated Strategic Seaport, and serves 90% of Alaska's population. It receives 50% of all freight shipped into Alaska by all modes (marine, truck, and air), and supports \$14 billion of commercial activity in Alaska.⁵ 74% of all waterborne freight and ninety-five percent of refined petroleum products entering the state are shipped through the Port of Alaska. This includes 100 % of the jet fuel supplied to Joint Base Elmendorf-Richardson and 66 % of the jet fuel for Ted Stevens Anchorage International Airport⁶, which is, as of April 2022, the third busiest cargo airport in the world.⁷

Despite its importance to the statewide economy, the Port of Alaska, like the rest of the Railbelt, is served by inadequate electrical infrastructure. Tony Izzo, general manager of Matanuska Electrical Authority, said: "We have one of the most fragile systems in the United States. I don't refer to the Alaska Railbelt as first-world, because it's not."⁸ Unlike the contiguous forty-eight states, Alaska has received minimal federal investment in grid development. The Eklutna Hydroelectric Project, constructed in the 1950s, was the last major federal project in the Railbelt that included a transmission line component; RIR would change that.

Employment at Chugach Electric Association, Golden Valley Electric Association, Homer Electric Association, Matanuska Electric Association, and Seward Electric System

More granularly, investment in RIR and GMRP will retain high-quality jobs with employer sponsored benefits at all five Railbelt utilities by creating new infrastructure that will require operation and maintenance for the next 25 years, as well as prepare the Railbelt grid for the development of low carbon energy infrastructure projects. Approximately 650 of the 1,100 total employees who work at these five utilities belong to labor unions.⁹ In addition, virtually all of the contractors that support the utilities are signatory to collective bargaining agreements. Alaska is not a Right to Work state; utility employees whose positions are covered by bargaining unit agreements are required to join unions consistent with those agreements. These are highly skilled and highly paid positions: the average wage of a journeyman lineman at these utilities ranges from \$54.40 to \$58.00 an hour. The utilities sponsor the following benefits: medical, dental, vision, life insurance, defined contribution retirement plans, 401(k), pension, short-term disability, long/short-term disability, tuition reimbursement, paid time off, and paid holidays. The 659 unionized workers these utilities employ suggests they possess access to sufficient supplies

⁵ [Port of Alaska in Anchorage, The Logistical and Economic Advantages of Alaska's Primary Inbound Port, McDowell Group, October 2020.](#)

⁶ [Ten Year Tonnage Summary | Port of Alaska in Anchorage](#)

⁷ [Alaska Business Monthly, 04/13/23, "ANC Ranks 3rd in the World for Air Cargo"](#)

⁸ [Anchorage Daily News, 03/12/23, "Railbelt utilities again scramble to fill expected Cook Inlet gas shortages"](#)

⁹ Email correspondence with Reagan M. Russel (see footnote 12); Justin Patterson (see footnote 13); phone correspondence with Charlene Flyum, (907)235-3369, Human Resources, Homer Electric Association, Friday, March 10, 2023 9:26 AM; Candice Strandberg, Human Resources, Chugach Electric Association, (907)762-4788, Friday, March 10, 2023, 9:16 AM; and Rob Montgomery, General Manager, Seward Electric System, (907)224-4073, Wednesday, March 8, 2023, 3:10 PM.

of skilled labor, while their longstanding track records of providing power to Alaska residents in remote and difficult environments demonstrates they are responsible employers. For perspective, each of these utilities is significantly older than the State of Alaska (which achieved statehood in 1959). Their years of founding are CEA: 1948; GVEA: 1947; HEA: 1945; MEA: 1941; and SES: 1921.¹⁰ Importantly, the Team includes the State of Alaska dba Alaska Energy Authority. With State support affirmed in this way, the GMRP public participation plan anticipates no issues establishing partnerships with tribal entities, local governments, and other State of Alaska departments with the goal of matching progressive workforce solutions to project needs.

The Team has long-term relationships with organized labor in Alaska. They have used project labor agreements in the past for projects of this scale, such as construction of the Alaska Intertie. Each of the utilities has collective bargaining agreements with IBEW, among other unions. As outlined in detail in the GMRP public participation plan (*Section 1*), The Team plans to engage its labor partners early to initiate discussions around labor agreements, local and targeted hiring goals, card-check neutrality, and programs to attract, train, and retain new workers. HR directors at these utilities confirmed that their organizations possess plans to minimize the risk of labor disputes via contracts with “appropriate grievance resolution stipulations”¹¹ and a staffed position of “Labor Relations Program Manager”.¹²

Melinda Taylor, Communications Director at IBEW Local 1547, wrote: “We would generally consider our relationship with each utility to be positive. We work well with each of these utilities and understand that the success of our membership is tied to the success of each utility. Because we have separate collective bargaining agreements with each utility (some of these utilities have multiple CBAs), the applicable work rules and expectations are much clearer than if there were no CBA in place. For these reasons, we believe that the IBEW is well-positioned to maintain strong labor relations with our partner utilities throughout any Railbelt grid modernization and revitalization projects.”¹³

Work performed with GRIP funding will be done in compliance with Alaska public contracting law, which contains provisions for local hire, apprenticeship training, prevailing wages and other forward-looking policies. Alaska has a unique labor market that results in construction employees on projects of this scale being dispatched by organized labor and benefiting from registered apprenticeship programs represented by the Alaska Apprenticeship Training Coordinators Association (AATCA). AATCA, composed of 16 different construction trades, is a member of the Alaska Works Partnership, a non-profit organization focused solely on getting Alaskans into careers in the construction industry. Alaska Works is jointly funded by the U.S. Department of Labor, the Alaska Department of Labor and Workforce Development, the Alaska Department of Transportation and Public Facilities, and the North American Building Trades Unions. By

¹⁰ [Homer Electric Association](#), [Golden Valley Electric Association](#), [Chugach Electric Association Inc.](#), [Matanuska Electric Association, Inc.](#), and phone call with Rob Montgomery, General Manager, Seward Electric System, (907)224-4073, Wednesday, March 8, 2023, 3:10 PM

¹¹ Email correspondence between Reagan M. Russell, RMRussel@gvea.com, Human Resources at Golden Valley Electric Association, and Clare Boersma, clareboersma@northerncompassgroup.com, Monday, March 6, 2023, 10:39 AM.

¹² Email correspondence between Justin Patterson, justin.patterson@mea.coop, Human Resources at Matanuska Electric Association, and Clare Boersma, clareboersma@northerncompassgroup.com, Monday, March 9, 2023, 3:27 PM.

¹³ Email correspondence between Melinda Taylor, mtaylor@ibew1547.org, Communications Director IBEW 1547, and Clare Boersma, clareboersma@northerncompassgroup.com, Tuesday, March 7, 2023, 6:00 PM.

complying with Alaska public contracting law and engaging registered apprentices in this project, the Team is assured of accessing the resources brought to bear by the Alaska Works Partnership in support of local hire, veteran hire, and as diverse a workforce as Alaska has to offer.

Tasks Related to Quality Jobs

1.	The Team will conduct one-on-one work sessions with IBEW Local 1547 and other relevant labor organizations about GMRP and input their feedback into the finalized plan.
2.	The Team will meet with tribal entities, local governments, and State of Alaska departments to implement progressive workforce-related solutions into GMRP.

3. Diversity, Equity, Inclusion, and Accessibility (DEIA)

It is a fundamental policy of all five Railbelt utilities and Alaska Energy Authority to assure equal opportunity in employment to all individuals regardless of race, color, gender, religion, national origin, age, genetic information, veteran status, or disability. Each utility provides reasonable accommodations to applicants and employees who need them because of a disability or to practice their religion. They maintain strict policies fostering safe, inclusive workplaces free of discrimination and harassment. Hiring practices and standard operating procedures comply with all Local, State, and Federal laws. Chugach Electric Association, Matanuska Electric Association, Homer Electric Association and Golden Valley Electric Association are federal contractors. The lone utility which is not—Seward Electric System—only has 10 employees. As federal contractors these utilities are subject to the Office of Federal Contract Compliance Programs’ requirements for hiring and adhering to an Affirmative Action Plan.

Alaska offers significant opportunities to engage underserved populations, including Alaska Natives, Pacific Islanders, and veterans. The GMRP public participation plan is designed to identify workforce partnerships to encourage participation of these and similar communities in the project, including meetings with organizations representing DACs to discuss how GMRP can best utilize and support minority business enterprises (MBEs), focus groups including minority populations to test communication materials effectiveness, “Going to the People” public outreach that target events with diverse populations, and hosting all public meetings after work to reduce barriers to participation. The Team will measure DEIA goals against data collected by Team HR departments related to workforce (including contractors), veteran status, ethnicity, gender, and disability status. Finalized DEIA goals will be evaluated against this dataset. Potential programs to increase diversity among project beneficiaries include affirmative action, scholarships, and anti-bias trainings for hirers.

The Team’s members support continued development of a skilled, inclusive local workforce via the IBEW-NECA Alaska Joint Electrical Apprenticeship and Training Trust, individual utility training programs, and the University of Alaska System. Under Task 3 of the GMRP public participation plan, meetings will be held between the Team, the Alaska Joint Electrical Apprenticeship and Training Trust (AJEATT) and other relevant local training trusts. These meetings will assess how the apprenticeship programs these organizations offer serve workers facing systematic barriers to employment, and how to reduce those barriers through GMRP implementation.

Given assumptions of a 1-cent/kWh reduction in the cost of power, cumulative annual benefits from the project in the form of reduced energy burdens of \$18,215,330 will flow to DACs or Tribal

lands. For more detail on these benefits, see Section 4: “Project Benefits for Disadvantaged Communities”.

Tasks Related to DEIA

1.	Host public meetings outside of working hours; test communication materials on minority populations for effectiveness; target diverse populations with “G2P” outreach.
2.	Invite one-on-one organizational meetings with organizations representing DACs affected by project, including tribal councils, Alaska Black Caucus, and Alaska Federation of Natives.
3.	Share and refine SMART DEIA goals during GMRP public participation plan, including support for MBEs.
4.	Assess how AOEETT and AJEATT apprenticeship programs serve workers facing systematic barriers to employment; implement improvements.
5.	Collect data on workforce veteran status, ethnicity, gender, and disability throughout GMRP implementation.
6.	Use collected data to evaluate success of DEIA goals throughout GRIP performance period.

4. Justice40 Initiative

AEA is a state entity with obligations to the public interest, while the utilities are member-owned cooperatives (one is municipal with responsibilities to the city’s residents). GMRP’s public participation plan is designed to encourage local governments and tribes to identify actions the project can take to advance environmental justice in their individual communities through this project. This includes directing benefits to DACs and minority owned businesses through labor agreements, training programs, and reduced long-term energy burdens and CO₂ emissions.

The most significant potential negative environmental impact caused by RIR would be from the submarine HVDC cable through Cook Inlet. Although Cook Inlet already hosts numerous subsea petroleum and natural gas pipelines and high voltage AC submarine cables, it is home to an endangered subspecies of Beluga whale. In addition to complying with all federal and state environmental permitting requirements, including marine mammal monitoring during construction, the Team will endeavor to convene a joint meeting with Alaska Department of Fish and Game, National Marine Fisheries Service, and Kenaitze and Knik Tribal Councils (the governing bodies for the two Alaska Native Village Statistical Areas whose lands are adjacent to the intended path of the submarine cable through Cook Inlet) to discuss additional best practices for minimizing potential disruptions to this Beluga population.

“America’s First Climate Refugees”

Nowhere is climate change more visible--or occurring faster--than in the far north. Driven by a shift in popular sentiment, decarbonization policies and technological advancements are reshaping Alaska’s energy landscape. Uncertainty around Cook Inlet natural gas, which fuels approximately 70% of the Railbelt’s power, is a major challenge looming on the near-term horizon.¹⁴ The Alaska Department of Natural Resources forecasts there will be supply shortfalls of Cook Inlet gas starting around 2027; no alternative supply exists in-state.¹⁵ This economic

¹⁴ [Alaska’s Energy Infrastructure | REAP \(https://alaskarenewableenergy.org/ppf/alaskas-energy-infrastructure\)](https://alaskarenewableenergy.org/ppf/alaskas-energy-infrastructure)

¹⁵ State of Alaska, Department of Natural Resources, Division of Oil and Gas [2022-cook-inlet-gas-forecast-report.pdf](#)

reality exists alongside complex moral and social issues: a thawing arctic disproportionately affects Alaska Native communities. For instance, Newtok Village, located on the Ninglick River, and the Native Village of Napakiak, located on the Kuskokwim River, are both currently being relocated to higher ground with over \$60 million of federal aid; they are considered “America’s first climate change refugees.”¹⁶

Rob Montgomery, General Manager of Seward Electrical System, writes: “The biggest obstacle Railbelt utilities face in putting more renewable or carbon-free energy on the grid is the limited capacity of existing transmission infrastructure. The Railbelt’s transmission system simply is not robust enough to move electricity in large capacities that would ultimately drive down costs.” RIR will increase transfer capacity between the three Railbelt regions, paving the way for development of increased hydro-electric power generation and other clean energy solutions. This will help mitigate environmental impacts from the 3,218 natural-gas-produced GWh on the Railbelt each year, resulting in 1.61 billion kilograms of carbon dioxide equivalent.¹⁷ Additionally, RIR is projected to result in a 10-15% reduction in thermal spending due to decreased line losses and reduced reserves, and more efficient economic dispatch of generation units representing a non-cumulative decrease of over 200 million kilograms of carbon dioxide equivalent per year.

Project Benefits for Disadvantaged Communities

Decreased Energy Burdens

This project is anticipated to provide significant benefits to Alaska’s DACs, both on and off the Railbelt. There are 22 census tracts that qualify as disadvantaged¹⁸ on the Railbelt, with a combined population of 81,921.¹⁹ There are a further 17 Alaska Native Village Statistical Areas (ANVSA) on the Railbelt²⁰, with a combined population of 160,486. These communities will receive direct benefits from GMRP via reduction of their energy burdens. As mentioned, Railbelt engineers believe GMRP’s decreased line losses and reduced reserves, due to increased transfer capability and improved economic dispatch, will result in thermal spending reductions of 10-15%.²¹ Because the utilities are member-owned, these savings will transfer directly to reduced consumer costs.

The Railbelt’s 260,000²² residential utility accounts serve 623,916 individuals²³, 242,407 of whom live in a DAC or Alaska Native Village Statistical Area. Roughly speaking, Railbelt engineers project that the GMRP’s overall fuel savings of 10-15% of fuel and variable operations and maintenance could result in a reduction of approximately 0.5 cents/kWh to 1.5 cents/kWh for users²⁴. The combined Railbelt utilities sold 4,408 GWh (Gigawatt-Hours) in 2020²⁵, yielding a potential total

¹⁶ See: [Alaska on the edge: Newtok's residents race to stop village falling into sea | The Guardian](#); [Impossible Choice Faces America's First 'Climate Refugees' : NPR](#); [Alaska's Climate Refugees - The Atlantic](#)

¹⁷ [Life Cycle Greenhouse Gas Emissions of Electricity Generated from Conventionally Produced Natural Gas - O'Donoghue - 2014 - Journal of Industrial Ecology - Wiley Online Library](#)

¹⁸ [DOE Disadvantaged Communities Reporter](#)

¹⁹ [American Community Survey 2021 5 Year Population Estimates](#)

²⁰ [2020 U.S. Census](#), [DOE Disadvantaged Communities Reporter](#)

²¹ Brian Hickey, Project Lead, P.E., Brian.Hickey@mea.coop, Zoom, 8:00-8:30 am, March 1st, 2023.

²² Summed from: [Homer Electric Association](#), [Golden Valley Electric Association](#), [Chugach Electric Association Inc.](#), [Matanuska Electric Association, Inc.](#)

²³ Alaska Department of Labor and Workforce Development, Research and Analysis Section.

²⁴ Production costing studies can be run to validate the accuracy of these estimates.

²⁵ [U.S. Energy Information Administration, 2020](#)

savings of \$44,080,000 for a 1-cent per kWh cost reduction based on historical generation data. A significant portion of those annual savings realized should pass through to member-owners; as a percentage of population served, 39% of these savings will flow to those who live in a DAC or on Tribal Land.

A unique feature of RIR as a component of the GMRP is that it will also have significant economic impacts outside of the Railbelt due to Alaska's Power Cost Equalization program (PCE). The PCE program was established in 1985 to provide economic assistance to residents and community facilities in rural Alaska, where electricity rates can be two to five times higher than in more urban areas. PCE was devised at the same time that state funds were used to construct major energy projects for urban Alaska, such as the Four Dam Pool, Bradley Lake, and the Alaska Intertie.

The primary beneficiaries of PCE are residential customers, who are eligible for subsidy of actual consumption up to 750 kWh (starting FY23; it has historically been 500 kWh). If a household uses more than 750 kWh of electricity in a given month, the amount used above 750 kWh is not subsidized. Community facilities are also eligible for actual consumption up to 70 kWh per month per community resident. Community facilities must be nonprofit organizations that do not receive the majority of their funding from state and federal sources. AEA administers the PCE program by making payments directly to individual utilities enrolled in the program. The PCE program is funded by earnings of the PCE Endowment Fund. Alaska Statute 42.45.085 provides that five percent of the PCE Endowment Fund's three-year monthly average market value may be appropriated to the PCE Program. In recent years the 5% draw on the endowment has been sufficient to fully fund PCE payments. PCE is determined for a utility as 95% of eligible power costs above the "Average Class Rate" and below \$1.00 per kWh. The Average Class Rate is derived from the average electricity cost in Anchorage, Juneau, and Fairbanks (20.03¢/kWh for FY 2022). Eligible costs are fuel expenses including transportation, and non-fuel expenses such as salaries, insurance, taxes, parts, supplies, and interest.

By decreasing (or incrementally reducing over the long-term) electricity rates in Anchorage and Fairbanks, GMRP will correspondingly decrease the Average Class Rate AEA uses to calculate PCE for rural utilities, consequently increasing the PCE credit for eligible communities and residents. In FY22 PCE served 188 communities, 154²⁶ (82%) of whom qualify as DACs or Tribal lands. Approximately 108,914,530²⁷ of PCE-eligible kWh were produced between residential and community facilities in those 154 DACs. AEA has estimated, based on the statutory PCE credit formula, that the increased credit amount that would be issued by AEA to PCE-enrolled communities is estimated to be \$1,263,000, when applying a one-cent reduction in the average class rate. Actual savings would be less than this, since Juneau, which is outside the Railbelt, is included in the "Average Class Rate", and their rates would not be affected by thermal spending reductions from GMRP. It should also be noted that PCE payments received by a particular utility are not uniformly distributed and will vary from year-to-year based on the utilities' energy cost reporting.

In sum: GMRP and RIR's projected 1-cent/kWh reduction in energy costs for users is estimated at a potential \$44,080,000 in reduced energy burdens for on-Railbelt electricity users, 39% of

²⁶ <https://www.energy.gov/diversity/justice40-initiative>

²⁷ [FY22 PCE Community Report.pdf \(akenergyauthority.org\)](#)

whom belong to DACs or live on Tribal lands. Through AEA’s Power Cost Equalization program, that same 1-cent/kWh reduction in on-Railbelt energy costs is anticipated to result in an additional \$1,263,000²⁸ in PCE subsidies to off-Railbelt communities, 82% of which will flow to DACs or Tribal lands, on a representative percentage basis. The GMRP presents a unique opportunity for federal investment when considering the significant multiplier effects regarding both direct and indirect benefits to be realized by both on and off-Railbelt DACs, by virtue of long-standing existing programs seeking to equalize the cost of power between urban and rural areas of the state.

Increased Energy Resilience

The Railbelt region is home to some of the harshest conditions on earth, making grid resilience a top priority. Past disasters include volcanic activity, earthquakes, avalanches, forest fires, and landslides, which have left communities isolated and without power for days or weeks. 26% of Railbelt customers live in an ANVSA, many of which are located in remote areas with energy infrastructure that is particularly vulnerable to natural disaster. Increased grid resiliency is a primary goal of this project, best embodied by the interregional transmission line that will be installed parallel to the line that currently ties together the Railbelt’s Southern and Central regions, and which will allow for continued energy transmission between regions in the event of a major natural disaster. Additional resilience benefits include right-of-way clearing, aerial inspections, and refurbishment of existing lines and structures.

Increased High Quality Job Creation

Lastly, GMRP will create high paying jobs for members of DACs who live along the Railbelt. Working with IBEW-NECA Alaska Joint Electrical Apprenticeship and Training Trust, individual utility training programs, and local colleges and the University of Alaska System, the project team will create apprenticeship and internship programs that streamline into jobs working on the grid. This will improve regional economies as well as help locals take ownership of the project, ultimately increasing energy democracy.

Tasks Related to Justice40 Initiative

1.	Provide numerous opportunities and means for disadvantaged communities to voice potential concerns over negative environmental impacts from GMRP through public participation process; host joint organizational meeting regarding submarine HVDC cable through Cook Inlet.
2.	Measure decreased energy burdens for DACs on Railbelt.
3.	Measure increased PCE credits for DACs off Railbelt.
4.	Streamline apprenticeships and internships in remote communities into jobs working on Railbelt grid.

²⁸ [FY22 PCE Community Report.pdf \(akenergyauthority.org\)](#)

Potentially Duplicative Funding Notice

Project Title: Railbelt Innovative Resiliency Project

Topic Areas 3: GRIP Resilience and Innovation Partnerships

Alaska Energy Authority does not have other active federal awards that would overlap with the scope of work under the proposed scope in this application.



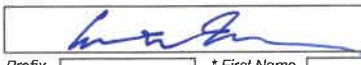
Curtis Thayer, Executive Director

If the applicant or project team member has other active awards of federal funds, the applicant must determine whether the activities of those awards potentially overlap with the activities set forth in its application to this FOA. If there is a potential overlap, the applicant must notify DOE in writing of the potential overlap and state how it will ensure any project funds (i.e., recipient cost share and federal funds) will not be used for identical cost items under multiple awards. Likewise, for projects that receive funding under this FOA, if a recipient or project team member receives any other award of federal funds for activities that potentially overlap with the activities funded under the DOE award, the recipient must promptly notify DOE in writing of the potential overlap and state whether project funds from any of those other federal awards have been, are being, or are to be used (in whole or in part) for one or more of the identical cost items under the DOE award. If there are identical cost items, the recipient must promptly notify the DOE Contracting Officer in writing of the potential duplication and eliminate any inappropriate duplication of funding.

DISCLOSURE OF LOBBYING ACTIVITIES

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

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

1. * Type of Federal Action: ☐ a. contract ☒ b. grant ☐ c. cooperative agreement ☐ d. loan ☐ e. loan guarantee ☐ f. loan insurance	2. * Status of Federal Action: ☐ a. bid/offer/application ☒ b. initial award ☐ c. post-award	3. * Report Type: ☒ a. initial filing ☐ b. material change
4. Name and Address of Reporting Entity: ☒ Prime ☐ SubAwardee * Name Alaska Energy Authority * Street 1 813 W. Northern Lights Blvd. Street 2 * City Anchorage State AK: Alaska Zip 99503 Congressional District, if known: AK-001		
5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime:		
6. * Federal Department/Agency: Department of Energy	7. * Federal Program Name/Description: Grid Infrastructure Deployment and Resilience CFDA Number, if applicable: 81.254	
8. Federal Action Number, if known: DE-FOA-0002740	9. Award Amount, if known: \$	
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 Mr. * First Name Curtis Middle Name * Last Name Thayer Suffix Title: Executive Director Telephone No.: 907-771-3000 Date: 5/17/93		
Federal Use Only:		Authorized for Local Reproduction Standard Form - LLL (Rev. 7-97)

Application for Federal Assistance SF-424		
* 1. Type of Submission: ☐ Preapplication ☒ Application ☐ Changed/Corrected Application		
* 2. Type of Application: ☒ New ☐ Continuation ☐ Revision		
* If Revision, select appropriate letter(s): * Other (Specify): 		
* 3. Date Received: Completed by Grants.gov upon submission.		4. Applicant Identifier:
5a. Federal Entity Identifier: 		5b. Federal Award Identifier:
State Use Only:		
6. Date Received by State:		7. State Application Identifier:
8. APPLICANT INFORMATION:		
* a. Legal Name: Alaska Energy Authority		
* b. Employer/Taxpayer Identification Number (EIN/TIN): 92-6001185		* c. UEI: F3N8ZSHJXUH8
d. Address:		
* Street1: 813 W. Northern Lights Blvd.		
Street2:		
* City: Anchorage		
County/Parish:		
* State: AK: Alaska		
Province:		
* Country: USA: UNITED STATES		
* Zip / Postal Code: 99503-2407		
e. Organizational Unit:		
Department Name: 		Division Name:
f. Name and contact information of person to be contacted on matters involving this application:		
Prefix: Mr.		* First Name: Bryan
Middle Name:		
* Last Name: Carey		
Suffix:		
Title: Director - Owned Assets		
Organizational Affiliation: 		
* Telephone Number: 907-771-3065		Fax Number:
* Email: bcarey@akenergyauthority.org		

Application for Federal Assistance SF-424

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

A: State Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

* 10. Name of Federal Agency:

National Energy Technology Laboratory

11. Catalog of Federal Domestic Assistance Number:

81.254

CFDA Title:

Grid Infrastructure Deployment and Resilience

* 12. Funding Opportunity Number:

DE-FOA-0002740

* Title:

BIL Grid Resilience and Innovation Partnerships (GRIP)

13. Competition Identification Number:

Title:

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

Add Attachment

Delete Attachment

View Attachment

* 15. Descriptive Title of Applicant's Project:

Railbelt Innovative Resiliency Project (RIR)

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	413,000,000.00
* b. Applicant	0.00
* c. State	413,000,000.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	826,000,000.00

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

- ☐ a. This application was made available to the State under the Executive Order 12372 Process for review on .
- ☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review.
- ☒ c. Program is not covered by E.O. 12372.

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

☐ Yes ☒ No

If "Yes", provide explanation and attach

Add Attachment

Delete Attachment

View Attachment

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

☒ ** I AGREE

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

Authorized Representative:

Prefix: * First Name:

Middle Name:

* Last Name:

Suffix:

* Title:

* Telephone Number: Fax Number:

* Email:

* Signature of Authorized Representative: * Date Signed:



5/17/23

Locations of Work (DE-FOA-0002740)

[illegible]

[illegible]

[illegible]

PROJECT DESCRIPTION AND ASSURANCES DOCUMENT (PDAD)

Project title: **Railbelt Innovative Resiliency Project**

Applicant Name: Alaska Energy Authority

Applicant Address: 813 W. Northern Lights Blvd. Anchorage, Alaska 99503

Names of all team member organizations:

- The State of Alaska dba The Alaska Energy Authority (AEA)
- Chugach Electric Association Inc., a Central Region cooperative (CEA)
- Golden Valley Electric Association Inc., a Northern Region Cooperative (GVEA)
- Homer Electric Association Inc., a Southern Region Cooperative (HEA)
- Matanuska Electric Association Inc., a Central Region Cooperative (MEA)
- The City of Seward Alaska dba Seward Electric System (SES)
- Regulatory Commission of Alaska (RCA)

Principal Investigator: Bryan Carey 907-771-3065 bcarey@akenergyauthority.org

Business Point of Contact : Curtis Thayer 907-771-3009 cthayer@akenergyauthority.org

Federal Share: \$ 413,000,000

Cost Share: \$ 413,000,000

Total Estimated Project Cost: \$ 826,000,000

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

 X Topic Area 3: GRIP Resilience and Innovation Partnerships

Item 7:

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

Authorized Organizational Representative (AOR):

Name: Curtis Thayer, Executive Director

Address: 813 W. Northern Lights Blvd. Anchorage, Alaska

99503 Phone: 907-771-3009

E-mail: cthayer@akenergyauthority.org

Item 8: Signature of Authorized Organizational Representative (AOR)





Confirmation

Thank you for submitting your grant application package via Grants.gov. Your application is currently being processed by the Grants.gov system. Once your submission has been processed, Grants.gov will send email messages to advise you of the progress of your application through the system. Over the next 24 to 48 hours, you should receive two emails. The first will confirm receipt of your application by the Grants.gov system, and the second will indicate that the application has either been successfully validated by the system prior to transmission to the grantor agency or has been rejected due to errors.

Please do not hit the back button on your browser.

If your application is successfully validated and subsequently retrieved by the grantor agency from the Grants.gov system, you will receive an additional email. This email may be delivered several days or weeks from the date of submission, depending on when the grantor agency retrieves it.

You may also monitor the processing status of your submission within the Grants.gov system by clicking on the "Track My Application" link listed at the end of this form.

Note: Once the grantor agency has retrieved your application from Grants.gov, you will need to contact them directly for any subsequent status updates. Grants.gov does not participate in making any award decisions.

IMPORTANT NOTICE: If you do not receive a receipt confirmation and either a validation confirmation or a rejection email message within 48 hours, please contact us. The Grants.gov Contact Center can be reached by email at support@grants.gov, or by telephone at 1-800-518-4726. Always include your Grants.gov tracking number in all correspondence. The tracking numbers issued by Grants.gov look like GRANTXXXXXXXXX.

If you have questions please contact the Grants.gov Contact Center: support@grants.gov
1-800-518-4726 24 hours a day, 7 days a week. Closed on federal holidays.

The following application tracking information was generated by the system:

Grants.gov Tracking Number:	GRANT13888581
UEI:	F3N8ZSHJXUH8
Submitter's Name:	Karin St. Clair
CFDA Number:	81.254
CFDA Description:	Grid Infrastructure Deployment and Resilience
Funding Opportunity Number:	DE-FOA-0002740
Funding Opportunity Description:	BIL Grid Resilience and Innovation Partnerships (GRIP)
Agency Name:	National Energy Technology Laboratory
Application Name of this Submission:	Railbelt Innovative Resiliency Project (RIR)
Date/Time of Receipt:	May 18, 2023 05:14:34 PM EDT

TRACK MY APPLICATION – To check the status of this application, please click the link below:

https://apply07.grants.gov/apply/spoExit.jsp?p=web/grants/applicants/track-my-application.html&tracking_num=GRANT13888581

It is suggested you Save and/or Print this response for your records.

GRANTS.GOV™
FIND. APPLY. SUCCEED.™

HELP | MY ACCOUNT | LOGOUT

SEARCH: Grant Opportunities Enter Keyword... **GO**

HOME LEARN GRANTS SEARCH GRANTS **APPLICANTS** GRANTORS SYSTEM-TO-SYSTEM FORMS CONNECT SUPPORT

GRANTS.GOV > Applicants > Manage Workspace

MANAGE WORKSPACE

Created
Forms Passed
Completed and Notified AOR
Submitted
Agency Received
Back
?

DE-FOA-0002740 - PKG00278576
BIL Grid Resilience and Innovation Partnerships (GRIP)
Department of Energy
National Energy Technology Laboratory

Application Filing Name: Railbelt Innovative Resiliency Project (RIR) [Edit Name]

Workspace ID: WS01101678 Workspace Status: Submitted

AOR Status: Workspace has AOR Last Submitted Date: May 18, 2023

Workspace Owner: Karin St. Clair SAM Expiration Date: Apr 17, 2024

Opening Date: Nov 18, 2022
Closing Date: May 19, 2023
UEI: F3N8ZSHJXUH8

FORMS VIEW APPLICATION ATTACHMENTS PARTICIPANTS ACTIVITY DETAILS

Workspace Actions:

Check Application Sign and Submit Reopen Delete

Application Package Forms - Users are encouraged to follow [antivirus best practices](#) when Downloading Instructions and Forms: [Download Instructions »](#) ?

Include in Package	Form Name (Click to Edit)	Requirement	Form Status	Last Updated Date/Time	Locked By	Actions
☒	Application for Federal Assistance (SF-424) [V4.0]	Mandatory	Passed	May 18, 2023 03:14:51 PM EDT	---	Lock Download Upload Reuse Webform
☒	Other Attachments Form [V1.2]	Mandatory	Passed	May 18, 2023 05:14:05 PM EDT	---	Lock Download Upload Reuse Webform
☒	Project/Performance Site Location(s) [V4.0]	Mandatory	Passed	May 18, 2023 03:02:51 PM EDT	---	Lock Download Upload Reuse Webform
☒	Budget Information for Non-Construction Programs (SF-424A) [V1.0]	Mandatory	Passed	May 17, 2023 06:15:53 PM EDT	---	Lock Download Upload Reuse Webform
☒	Disclosure of Lobbying Activities (SF-LLL) [V2.0]	Optional	Passed	May 18, 2023 03:03:13 PM EDT	---	Lock Download Upload Reuse Webform

CONNECT WITH US: [Blog](#) [Twitter](#) [YouTube](#) [Alerts](#) [RSS](#) [XML Extract](#) [Get Adobe Reader](#)

HEALTH & HUMAN SERVICES: [HHS.gov](#) | [EEOC / No Fear Act](#) | [Accessibility](#) | [Privacy](#) | [Disclaimers](#) | [Site Map](#)

COMMUNITY: [USA.gov](#) | [WhiteHouse.gov](#) | [USAspending.gov](#) | [SBA.gov](#) | [SAM.gov](#) | [Report Fraud](#)

Frequently Asked Questions [CHAT NOW \(BETA\)](#)