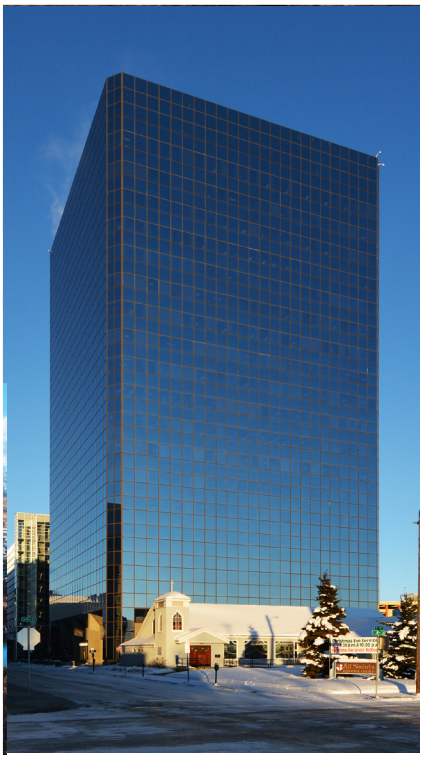
WORKPLAN

State of Alaska Energy Efficiency Upgrade Project



Section 1: Overall Project Summary and Approach

Reduction Measures

Provide a detailed description of each of the proposed GHG reduction measures to be undertaken.

Alaska's climate presents unique challenges for building energy efficiency, with long and cold winters and limited daylight hours. Weatherization, energy efficiency measures, and beneficial electrification of Alaska's public facilities have great potential to provide emissions reduction and broader community benefits through money saved on energy expenses. Importantly, these measures are among the short list of efforts that can be undertaken expediently and with the available expertise by resource-limited governmental entities. In Alaska, the public sector is one of the largest economic sectors. This is reflected in many small communities where public facilities are critical to human infrastructure, serving a changing role as lodging for out-of-town guests, emergency shelter, and community gathering space. AHFC's 2014 Energy Efficiency in Public Buildings Analysis, among other evidence, points clearly to the economic and environmental benefits.

Public facilities are also a major driver of costs for governments that are already fiscally distressed or lack access to sufficient revenue to meet growing costs, especially when the buildings are not energy efficient and use expensive heating oil, which in some communities is priced as high as $13/gallon. The proposed actions support programs by public entities that promote greater energy efficiency through weatherization, energy efficiency measures, and beneficial electrification in public facilities across Alaska.

Measure 1: DOT&PF will conduct energy audits, condition assessments, and implement feasible energy efficiency upgrades at major State of Alaska-owned office facilities in the South Central, Interior, and Southeast Alaska areas. Energy Efficiency measures will be accomplished through Energy Savings Performance Contracts utilizing Energy Service Contractors (ESCOs). Project activities and milestones include:

- Contracting with Energy Service Contractors (ESCOs)
- Completion of the energy audits and facility assessments
- Implementation of energy efficiency measures as identified by the ESCO's Energy Savings Proposal
- Measurement and verification of the installed energy efficiency measures

Energy audits and facilities improvements will occur across the state:

1. Robert B. Atwood Building
2. Linny Pacillo Parking Garage
3. State Surplus Warehouse
4. Geological Materials Center
5. Palmer State Office Building
6. Gustavus Maintenance Facilities
7. Haines Maintenance Facilities
8. Ketchikan Maintenance Facilities
9. Petersburg Maintenance Facilities
10. Skagway Maintenance Facilities
11. Wrangell Maintenance Facilities
12. Yakutat Maintenance Facilities
13. Adak Maintenance Facilities
14. Akutan Maintenance Facilities
15. Cold Bay Maintenance Facilities
16. Dutch Harbor Maintenance Facilities
17. King Salmon Maintenance Facilities
18. Galena Maintenance Station

Measure 2: The proposed measure will utilize an Energy Savings Performance Contract (ESPC) to perform energy retrofits at the William Jack Hernandez Sport Fish Hatchery and Ruth Burnett Sport Fish Hatchery, located in Anchorage and Fairbanks, respectively, including the following services: Investment grade energy audits and comprehensive energy services, design, implementation, and commissioning of new or existing energy systems, verification and reporting of energy savings and guarantee of energy savings. Project activities and milestones include:

- Contracting with Energy Service Contractors (ESCOs)
- Completion of the energy audits and facility assessments
- Implementation of energy efficiency measures as identified by the ESCO's Energy Savings Proposal
- Measurement and verification of the installed energy efficiency measures

Energy audits and facilities improvements will occur across the state:

- William Jack Hernandez Sport Fish Hatchery
- Ruth Burnett Sport Fish Hatchery

Measure 3: Retrofit of street lighting from High Pressure Sodium lamps to LED lights. Approximated 700 "cobra-head" and 10 high-mast lights to be retro-fitted. The efficacy of LED streetlights at reducing emissions is very high because they have a long service life and are typically warranted for at least 10 years, long-term emissions reductions correlate to reduced electric power consumption. Project activities and milestones include:

- Contracting with Energy Service Contractors (ESCOs)
- Completion of the energy audits and facility assessments
- Implementation of energy efficiency measures as identified by the ESCO's Energy Savings Proposal
- Measurement and verification of the installed energy efficiency measures

Energy audits and facilities improvements will occur between Anchorage and the Matanuska Valley.

This project will conduct energy assessments of public buildings across the state and develop projects to save energy in the operation of buildings in identified communities. Energy audits would be conducted for buildings owned or operated by the State of Alaska to determine the current energy usage and opportunities for savings. The State's investment grade audits, like that of Level 1, involve a walk-through survey of the building and systems to determine the most cost-effective measures. Following the audits, stakeholder meetings will determine the retrofit measures, with initial investment available. Often, planning processes in these facilities have identified needs but need additional resources for improvements that lead to energy conservation and efficiency. Near-term goals are to address any urgent needs, followed by longer-term investments that reduce energy use in each building.

Little prior work has been done to complete an energy audit of these facilities, though minor maintenance has resulted in exchanging lightbulbs and conducting weatherization where needed. However, this project will increase this effort substantially. This approach is well-vetted and has been completed elsewhere in rural Alaska. Potential building upgrades to be considered include:

- HVAC system tuning or upgrades depending on the type of heating system in place and the savings expected in comparison to other measures. Higher efficiency heating and ventilation systems and components would be considered based on the impact on the overall energy use of the building. In the right climate zone, switching to heat pumps and other high-efficiency electric options would be considered if ample renewable energy was available.

- Installing automated HVAC control systems including addressing the schedules and setpoints for existing control systems.
- Lighting system upgrades including LED replacements, lighting controls with automatic daylight sensing (particularly for exterior lighting), and motion sensors for indoor lighting.
- Building envelope upgrades such as air sealing, additional insulation, and improved doors and windows. Upgrades would be coordinated with any deferred maintenance items such as roof replacement or leveling of the foundation which could negatively impact building performance if not addressed.
- Assessing the potential for existing or excess renewable energy to offset a portion of the energy and heating loads of the building and/or considering electrification measures to utilize locally available renewable energy.

By incorporating energy-efficient upgrades into building design and construction, residents and businesses in Alaska can reduce their energy consumption and save money on utility bills while also reducing their fossil fuel emissions.

The project proposes to use an audit process that includes all the work performed for the Predicted Energy-Use Analysis (PEA) defined in ASHRAE's Procedures for Commercial Building Energy Audits (PCBEA) plus the following:

1. Walk-through of facility to identify construction, equipment, operation, and maintenance.
2. Meet with the owner/operator/users to learn of special problems or planned improvements (e.g., HVAC equipment replacements, aesthetic upgrades, etc.) of the facility and any operation or maintenance issues. Determine whether any maintenance problems and/or practices affect efficiency.
3. Perform a space function analysis, also guided by PCBEA. Determine whether efficiency may be affected by functions that differ from the original functional intent of the building.
4. Identify low-cost/no-cost changes to the facility or O&M procedures and estimate the approximate savings that will result from these changes.
5. Identify potential capital improvements for further study and provide an initial rough estimate of potential costs and savings. The report for a Level 1 analysis should contain the building characteristics and energy use summary as well as the following items:
   - Quantification of any savings potential from changing to a different utility rate structure.
   - Discussion of irregularities found in monthly energy use patterns, and potential causes.
   - The EUIs of similar buildings. Report the source, size, and date of the sample used in this comparison. The names of comparable buildings should be given if known.
   - The target EUI and the method used to develop the target index. When comparison is made to other buildings, state their names or the source of the database. Where the experience of someone other than the report author is used to develop the target, provide the source. Where the target is developed by calculation, show the calculation, or quote the name and version of the software used and include both input and output data.
   - Total energy and demand costs by fuel type for the latest year and preceding two years, if available. Show potential savings in dollars using the energy index format of ASHRAE Standard 105 (ASHRAE 2021).
   - The fraction of current costs that would be saved if the energy index were brought to the target level.
   - A summary of any special problems or needs identified during the walk-through survey, including possible revisions to O&M procedures.

- A listing of low-cost/no-cost changes with estimated savings for these improvements.
- The potential capital improvements, with an initial rough estimate of potential costs and savings

The PEA provides the following, as well:

1. Complete the energy performance summary to develop EUI and ECI for each fuel/demand type and their combined total using methods outlined in ASHRAE Standard 105 (2021).
2. Benchmarking: Assemble copies of utility bills and summarize them for at least a one-year period, preferably for a two- or three-year period. Review the monthly bills for opportunities to lower costs by taking advantage of different utility rate classes, taking into account peak electric demand patterns. Review the monthly patterns for irregularities. Note if a bill is missing or if it is estimated rather than an actual consumption value.
3. Compare the EUI and ECI with those of buildings having similar characteristics. A common benchmark comparison for peer buildings is the ENERGY STAR Portfolio Manager of the U.S. Environmental Protection Agency (EPA) or the State of Alaska's ARIS database. The owner/operator of the subject building may have similar buildings for this comparison. A comparison should also be made with information contained in the ARIS database. In all cases, care should be taken to ensure that comparison is made with current data, using consistent definitions of building usage and floor area.

Explain how these features, tasks, and milestones will ensure success of the measures.

The Alaska Department of Transportation and Public Facilities (DOT&PF) manages the State's public facilities to ensure a state of good repair, safety, and ability to deliver public services. The proposed measure would increase the energy efficiency of these facilities through careful analysis that results in system upgrades, with substantial emissions reduction potential.

Describe underlying assumptions and risks associated with those features, tasks, and milestones.

Energy audits will allow DOT&PF to understand the overall energy use in their public facilities and plan for energy efficiency improvements based on the needs identified in the audits. Efficiency upgrades are the first step to managing a facility's energy landscape because reducing the baseload and peak demands from buildings reduces the amount of energy needed. Facilities within different communities rely on local power generation, often diesel-dependent, with a very long supply chain (resilience issues), and efficiency has an economic multiplier for every dollar retained in the community (economic development). By reducing usage, energy systems can be sized appropriately to maximize benefit to the community.

Discuss risks that could reasonably lead to delays or interruptions in the development or implementation of a GHG reduction measure or could impact its effectiveness.

DOT&PF has identified the following risks that could lead to delays or interruptions in the implementation of a GHG reduction measure, or which could impact its effectiveness.

Risk	Description	Potential (1-5/ Low to High)	Mitigation
Disruption to Operations	Implementing energy efficiency measures often requires retrofitting existing systems or modifying building structures, which can cause disruptions to normal operations. Construction work, equipment installation, and system upgrades may necessitate temporary closures, relocation of offices, or adjustments to schedules.	2	DOT&PF is experienced at completing upgrades and repairs around the facility schedule, to maximize a safe and active operating environment.
Maintenance and Performance	Energy-efficient equipment and systems require regular maintenance to ensure optimal performance. Facilities may face challenges in allocating resources for ongoing maintenance, leading to reduced efficiency over time or unexpected breakdowns.	3	While CPRG funds will initiate improvements, DOT&PF will plan and budget for necessary maintenance to ensure optimal performance. DOT&PF facilities staff will support ongoing maintenance.
Budgetary Stress	One of the primary barriers to implementing energy efficiency measures is the initial investment required. Facilities may struggle to secure funding for upgrades or lack the budget flexibility to prioritize energy efficiency over other pressing needs.	1	CPRG funds overcome this initial hurdle, and DOT&PF will need authority in the legislative budget to accept these and utilize them for intended purposes.
Technical Complexity	Energy efficiency projects may involve complex technical solutions, such as HVAC upgrades, lighting retrofits, or building envelope improvements. Facility managers may lack the internal expertise to design, implement, and monitor these solutions effectively, increasing the risk of errors or suboptimal outcomes.	2	DOT&PF's operational structure, with a team of technical experts with the Public Facilities division, will overcome any risk related to the technical complexity of installation and maintenance of upgrades.
Regulatory Compliance	Public facilities must adhere to various regulations and building codes when implementing energy efficiency measures. Failure to comply with these requirements can lead to fines, delays, or legal issues, especially if renovations or upgrades are not properly permitted or approved.	2	DOT&PF is familiar with processes to ensure regulatory compliance and will implement strong oversight measures as part of its subrecipient management.

Discuss the extent to which GHG emission reductions may be affected by these risks.
Based on this analysis, DOT&PF is highly confident in its ability to implement reduction measures effectively, and with little interruption. DOT&PF has a mitigation strategy in place that maximizes the extent to which GHG emissions reductions occur.

Explanation of how each GHG reduction measure included in the application relates to a GHG reduction measure included in the relevant PCAP(s), why each measure was selected as a priority, and a description of how each measure will meet the goals of the CPRG program.
These measures are included in the State's PCAP, under non-residential "Public Building and Asset Weatherization, Energy Efficiency, and Beneficial Electrification," which includes programs by public entities that promote greater energy efficiency through weatherization, energy efficiency measures, and beneficial electrification in public facilities across Alaska. Other public assets, like vehicle and equipment fleets, may be considered as part of this measure as well. DOT&PF is the appropriate authority to implement this measure, for State public facilities.

This project is consistent with the goals of the CPRG program:

1. Implement ambitious measures that will achieve significant cumulative GHG reductions by 2030 and beyond – DOT&PF is confident in the measures resulting in significant cumulative GHG reductions, improving conditions in 18 facilities across 15 communities.
2. Pursue measures that will achieve substantial community benefits (such as reduction of criteria air pollutants (CAPs) and hazardous air pollutants (HAPs)), particularly in low-income and disadvantaged communities – DOT&PF selected these projects based on their location in low-income and disadvantaged communities, potential for substantial emissions reductions, and which are aligned with community priorities to benefit public sector service delivery.
3. Complement other funding sources to maximize these GHG reductions and community benefits – These projects support the State's overall approach to deferred maintenance and energy efficiency improvements, and CPRG funding will leverage other state investments for a broader impact.
4. Pursue innovative policies and programs that are replicable and can be "scaled up" across multiple jurisdictions – DOT&PF anticipates greater capacity to support additional GHG reduction measures across all State facilities and a learning process that can be shared across the state.

Demonstration of Funding Need

Demonstrate a strong need for CPRG implementation funding that is unmet by other funding sources.

This project would not occur without CPRG funding. DOT&PF relies on a relatively fixed budget that includes baseline legislative appropriations, with no access to local utility or user fees. State revenues have been flat or declining over the last ten years, and EPA funding will ensure that participating facilities can lower costs while effectively maintaining systems and services to residents. EPA funding will significantly augment current maintenance and operations budgets.

Explain if and how they have explored the availability of other federal and state grants, tax incentives, and other funding sources to implement their GHG reduction measures and why these sources are not sufficient.

DOT&PF has explored numerous ways in which the State's public facilities may benefit from the availability of federal grants, tax incentives, and other funding sources, and thus far have found them to be insufficient. Especially in a constrained fiscal environment, DOT&PF has been unable to make significant inroads relative to the scale of need. While many opportunities may exist, the majority have been downscaled more to local and tribal governments, businesses, and others, instead of being available for State facilities.

DOT&PF may be eligible for various tax incentives and credits at the federal level to support GHG reduction measures, including federal tax credits for energy-efficient building improvements, renewable energy investments, and alternative fuel vehicles, as well as state-specific tax incentives for green building certifications, energy-efficient equipment purchases, and clean energy production.

The EECBG program, administered by the U.S. Department of Energy (DOE), provides grants to local governments, including municipalities and counties, for energy efficiency improvements and GHG reduction projects in public facilities. Eligible activities may include building retrofits, lighting upgrades, HVAC improvements, and renewable energy installations.

DOT&PF has been unable to take advantage of utility rebate programs offered by local energy providers to offset the costs of energy efficiency upgrades and GHG reduction initiatives. These programs may provide cash incentives, rebates, or financing options for measures such as lighting retrofits, HVAC system replacements, and energy management systems.

The Environmental Protection Agency (EPA) provides grants for clean energy projects, pollution prevention initiatives, and environmental education programs, while the U.S. Department of Transportation (DOT) offers grants for alternative transportation infrastructure and vehicle electrification projects. This has had little impact on State facilities.

Finally, DOT&PF has explored and had to rule out bond financing options, such as Qualified Energy Conservation Bonds (QECBs) or Clean Renewable Energy Bonds (CREBs), to finance GHG reduction measures with long-term payback periods. Additionally, public-private partnerships (PPPs) can leverage private sector expertise and resources to implement energy efficiency projects and achieve GHG reduction goals. There is insufficient State capital for these kinds of programs.

Include a list of federal and non-federal funding sources (e.g., EPA's GHG Reduction Fund Solar for All program) that the applicant has applied for, secured, and/or will secure to implement the GHG reduction measures, if applicable.

DOT&PF has actively pursued competitive transportation funding at the federal level, through the Bipartisan Infrastructure Law (BIL), but has not applied for or secured funding for public facility GHG reduction measures.

Transformative Impact

Describe the extent to which the proposed GHG reduction measures have the potential to create transformative opportunities or impacts that can lead to significant additional GHG emissions reductions.

By investing in energy-efficient technologies and practices, State facilities can serve as catalysts for broader sustainability initiatives, driving systemic change and inspiring communities to adopt similar measures. These upgrades not only directly reduce the carbon footprint of public facilities but also create ripple effects throughout the community. For example, by retrofitting lighting systems with energy-efficient LEDs, facilities not only lower electricity usage but also demonstrate the feasibility and benefits of such upgrades to community members. This educational component can lead to increased awareness and adoption of energy-saving behaviors both within and beyond the facility, resulting in further emissions reductions.

Energy efficiency upgrades often involve the integration of renewable energy sources, such as solar panels or wind turbines, which further decrease reliance on fossil fuels and contribute to a cleaner, more sustainable energy mix. By investing in modern, efficient building systems and technologies, DOT&PF can future-proof their facilities against rising energy costs and increasingly stringent environmental regulations, ensuring long-term sustainability and resilience. Ultimately, energy efficiency upgrades in public facilities have the potential to not only reduce GHG emissions directly but also inspire broader societal change, fostering a culture of sustainability and environmental stewardship for generations to come.

Section 2: Impact of GHG Reduction Measures

Magnitude of GHG Reductions from 2025 through 2030

Describe the magnitude of cumulative GHG emission reductions and the durability of the reductions that will be achieved through implementation of each GHG reduction measure for the period 2025 through 2030.

Action	CO2e Reduction
(Through 2030, cumulative metric tons)	
RB & WJH Sport Fish Hatchery, realistic baseline	11,279 MT CO2e
RB & WJH Sport Fish Hatchery, audit-discovery	8,517 MT CO2e
All other sites, realistic baseline	6,486 MT CO2e
All other sites, audit-discovery	9,746 MT CO2e
Galena PV Array	27 MT CO2e
Glenn Highway Streetlights	444 MT CO2e
Total	**16,232 MT CO2e**

Using the modeled emissions reductions explained in the technical appendix and detailed in the calculation sheet, the table above provides the cumulative emissions reductions in MT (metric tons) for "realistic baseline" improvements, which can be assumed for each project as well as "audit-discovery" that approximates the potential improvements that may result as part of the audit in each facility. These calculations presume that improvements are commissioned linearly, beginning with a portion of projects fully online by calendar year 2027 and all projects completed by 2029.

For each GHG reduction measure, applicants should provide estimated metric tons of CO2-equivalent emission reductions resulting from the measure.

Action	CO2e Reduction (Annual Metric Ton)	Year Online
RB & WJH Sport Fish Hatchery, realistic baseline	2,256 MT CO2e	2026
RB & WJH Sport Fish Hatchery, audit-discovery	1,703 MT CO2e	2026
All other sites, realistic baseline	2,029 MT CO2e	2027-2029
All other sites, audit-discovery	3,260 MT CO2e	2027-2029
Galena PV Array	5 MT CO2e	2026
Glenn Highway Streetlights	89 MT CO2e	2026
Total	**9,342 MT CO2e**	

Provide the sum total of GHG reductions resulting from all measures in the application.

CO2e Reduction (Annual Metric Ton)	CO2e Reduction (Through 2030, cumulative metric tons)	CO2e Reduction (Through 2050, cumulative metric tons)
9,342 MT CO2e	16,232 MT CO2e	122,005 MT CO2e

In describing the durability of the GHG emission reductions, applicants should discuss the extent to which the measures will result in a permanent reduction in cumulative GHG emissions.

While this project's improvements can lead to significant and long-lasting emissions reductions, DOT&PF recognizes that they may not be entirely permanent or static. Continued monitoring, maintenance, and proactive management are necessary to preserve and maximize the benefits of energy efficiency initiatives over the long term. Additionally, DOT&PF views energy efficiency as part of a broader sustainability strategy, incorporating ongoing efforts to reduce environmental impact and promote resilience in the face of future challenges. DOT&PF will encourage regular maintenance and proper operation of energy-efficient equipment, which are essential for ensuring optimal performance and longevity. Changes in energy usage patterns, such as increased occupancy, expanded facilities, or shifts in operational practices, can affect the sustainability of emissions reductions over time. Technological advancements and innovations in energy efficiency may offer opportunities for further improvements or upgrades in the future. DOT&PF will ensure long-lasting benefits by encouraging energy-saving behaviors, promoting awareness, and providing ongoing education and training that can help sustain the positive impact of energy efficiency initiatives.

Magnitude of GHG Reductions from 2025 through 2050

Applications should describe the magnitude of cumulative GHG emission reductions and the durability of the reductions that will be achieved through implementation of each GHG reduction measures for the period 2025 through 2050.

Action	CO2e Reduction (Through 2050, cumulative metric tons)
RB & WJH Sport Fish Hatchery, realistic baseline	56,394 MT CO2e
RB & WJH Sport Fish Hatchery, audit-discovery	42,584 MT CO2e
All other sites, realistic baseline	47,069 MT CO2e
All other sites, audit-discovery	74,936 MT CO2e
Galena PV Array	136 MT CO2e
Glenn Highway Streetlights	2,218 MT CO2e
Total	**122,005 MT CO2e**

For each GHG reduction measure, applicants should provide estimated metric tons of CO2-equivalent emission reductions resulting from the measure.

Action	CO2e Reduction (Annual Metric Ton)	Year online
RB & WJH Sport Fish Hatchery, realistic baseline	2,256 MT CO2e	2026
RB & WJH Sport Fish Hatchery, audit-discovery	1,703 MT CO2e	2026
All other sites, realistic baseline	2,029 MT CO2e	2027-2029
All other sites, audit-discovery	3,260 MT CO2e	2027-2029
Galena PV Array	5 MT CO2e	2026
Glenn Highway Streetlights	89 MT CO2e	2026
Total	**9,342 MT CO2e**	

Provide the sum total of GHG reductions resulting from all measures in the application.

CO2e Reduction (Annual Metric Ton)	CO2e Reduction (Through 2030, cumulative metric tons)	CO2e Reduction (Through 2050, cumulative metric tons)
9,342 MT CO2e	16,232 MT CO2e	122,005 MT CO2e

Cost Effectiveness of GHG Reductions

Information demonstrating the cost effectiveness of the GHG reductions anticipated from the measures included in the application.

As DOT&PF contracts for improvements based on the results of audits, the project team will elevate projects with high-cost effectiveness for GHG reductions.

Calculation of the requested CPRG implementation grant dollars divided by the quantified GHG emission reductions for the period 2025-2030 calculated to meet criterion 2.a for the set of measures included in the application.

Total Budget	**$48,920,022.87**
$/MTCO2e through 2030	**$3,013.73**

Qualitative narrative explaining any factors that affect the measures' cost-effectiveness

Alaska's cost of living has always been higher than in the contiguous United States. Data collected and tracked by the Council for Community & Economic Research (C2ER) shows that Alaska's costs are always above the national average. For the four Alaska cities tracked, the cost of groceries and healthcare are consistently higher than in other parts of the country, with two cities having consistently higher housing and utility costs as well. In 2023, Alaska ranked 4th in the country for the cost of health care premiums, according to the Alaska Department of Labor & Workforce Development.

Alaska's high costs are attributable to its geography and population. The state is nearly 600,000 square miles or almost 20% of the combined land mass of the other 49 states. The population of Alaska in the 2020 Census was 733,391 – smaller than all but two other states. According to Alaska DOT&PF, 82% of Alaska's communities are not accessible by road. Anchorage, the state's main market and distribution center, is more than 2,400 road miles from Seattle. Transportation for goods, services, and people is expensive, time-consuming, and often hindered by bad weather.

Energy costs are also higher in Alaska. Transmission between most communities is not possible due to long distances. Electricity is generated in rural communities by burning diesel fuel, which must be transported. The cost of electricity can be three to five times higher for rural consumers than for customers in more urban parts of Alaska, according to the Alaska Energy Authority.

The harsh weather conditions make building and maintaining all types of infrastructure more expensive and complicated in Alaska than in the rest of the country. Construction standards must account for climates that can have 150° F differences in temperature between summer and winter. Building new infrastructure and performing maintenance can happen only in the short summer construction season.

Everything costs more in rural Alaska, and shipping plays a primary role in those higher costs. Transportation costs increase with the distance from hub communities, leading to huge differences in cost between Alaska's rural and urban areas. Prices are lower on the road system and in areas with year-round barge access (Southeast and Gulf Coast) and highest in places with small populations where goods must be barged longer distances (often up long rivers) or flown in.

Documentation of GHG Reduction Assumptions

For each GHG reduction measure, applications should demonstrate the quality, thoroughness, reasonableness, and comprehensiveness of the methodology, assumptions, and

calculations described for developing the estimated GHG emission reductions. The application should document the method for estimating GHG emission reductions, including the basis for emission scenarios, relevant assumptions, and models or methods used and any uncertainties in these calculations.

The reference case of our analysis includes 18 buildings, street light upgrades, and a solar PV project. For each of the buildings, an energy model of the reference case was created using the following process: building stock data and energy volumes, such as electricity and fuel usage, for the public buildings were taken from the dataset and analyzed. The dataset included information about the building types, such as the year of construction, heating fuel usage, and square footage fields.

The difference between the reference (base) case and the modeled changes in energy due to the modeled adoption of measures discussed above, is the activity data being used to estimate the reduction in GHG. For example, after buildings are simulated using the tools and assumptions above, the estimated reduction or increase in different types of fuels, such as natural gas, coal, liquid fuels, or electricity, is converted from MMBTU or its energy equivalents, into MT CO2e using the corresponding emission factors for that fuel type, across the constituent CO2, CH4 and N2O. Next, EPA's 2022 GWP values are used to convert each MT per GHG type into aggregated annual MT CO2e – using 1 for CO2, 298 for N2O, and 25 for CH4. Whenever appropriate, the emission factors of electricity is matched using the community the buildings are in, and either the PCE-based emission factors or the grid-rates for the sub-region.

For envelope changes, levels of insulation and sealing as well as window upgrades were modeled. Additionally, wherever meaningful, the installation of VRF, commercial heat pumps, and LED lighting, alongside variable speed drives on pumps and fans. In certain buildings, HVAC Heat Recovery and CHP installations were modeled, whereas in others Condensing Boilers and Ground-source heat pumps (GSHP) were modeled in. See energy use and emission details in the support file.

The efficiency upgrades in this set of measures include the replacement of all non-LED lighting fixtures with LED fixtures, the addition of wall and roof insulation, and air-sealing of the envelope. In the implementation of the insulation upgrade, it's assumed that the space exists to install the levels of insulation modeled, which in some cases requires the extension of the depth of the walls. The number of fixtures that are currently LED is determined based on the year of construction or last renovation of the building. For buildings that have been more recently renovated, it's assumed that they have more LEDs installed, with the converse effect also assumed.

A full audit is also planned such that other tertiary measures could be implemented, wherever applicable. For example, the audit can lead to the identification of low-cost savings opportunities not otherwise modeled, including boiler system tune-up, such as removing scaling or deposits and other maintenance; outdoor air system tune-up such as the identification of any leakage; any lighting controls measures or hot water supply temperature resets; supply air temperature resets and space air temperature setpoint setbacks, as well as adjusting demand-controlled ventilation air or tuning exhaust fan schedules.

The models show competing ECM emission reductions, which will be finalized upon the audit.

All applicants should provide measure-specific assumptions and data elements needed to calculate GHG emission reductions. The rigor of the methodology and assumptions used in GHG emission reduction calculations should be commensurate with the level of funding requested in the application.

DOT&PF has included the following measure-specific assumptions and data elements:
- Basic facilities data, including square footage, ZIP, and build year (where available)
- Utilities usage data ($ of natural gas purchased)
- Detailed project information, where applicable (Galena, Glenn Highway, Hatcheries)

To model the varying scope of projects included in this application, top-level project descriptions were mapped to a set of standard improvements modeled for each facility that meets various ASHRAE standards as described in the technical appendix.

The quantification does not assume any impacts of "joint strategies" – that is, the simultaneous impact of multiple projects at a single location. In other words, if a project analyzes the reduction of grid emissions based on upstream integration of renewable energy, the new emission factors of electricity are not being used to measure the impact of electrification or efficiency of end-use equipment, as stated above. Instead, the reference emission factors will be used. Similarly, if competing efficiency projects are modeled such that they are not additive but are substitutes for each other, the extent of overlap is not being modeled or predicted. Additionally, the baseline models assume annualized load profiles – and actual building performance may differ, such as from partial usage or occupancy, etc. Lastly, there are no weather normalizations done on either the activity of the reference scenario or modeled measures.

For projects where DDC is a component, we did not directly quantify emissions impact especially as our modeling is not able to reliably model DDC impacts, as this depends on detailed usage data in addition to qualitative information on a given baseline scenario which was difficult to establish with high confidence due to the number of parameters involved.

Additional information on methodology and assumptions is available in the attached technical appendix.

Section 3: Environmental Results – Outputs, Outcomes, and Performance Measures

Expected Outputs and Outcomes

Applicants should identify the expected outputs and outcomes (see Section I.C) for each GHG reduction measure. Specific outputs and outcomes should be provided and may include short- and longer-term activities.

DOT&PF anticipates that its measures will result in the following:
- Reduced energy consumption - this reduction can be measured in terms of kilowatt-hours (kWh) of electricity, therms of natural gas, gallons of heating oil, or other relevant units, depending on the specific measures implemented by DOT&PF.
- Cost savings - lower energy consumption leads to reduced utility bills, resulting in cost savings for public facilities. These savings can be significant over time and can be reinvested in facility improvements or additional sustainability initiatives.
- Reduced GHG emissions – DOT&PF will measure the baseline against improvements made and track progress toward emissions reductions over time.

Outputs:
- Improvements in 14 communities.
- 18 energy audits of State public facilities.
- Full scope assessment of highway street lighting.

- 18 facilities make energy efficiency and energy-related improvements that are consistent with measures proposed to reduce GHG emissions.
- 9 facilities located in rural, disadvantaged communities make improvements that are anticipated to result in reduced GHG emissions.
- Improvements to energy efficiency of highway lighting

Outcomes:
- Reduction in cumulative metric tons of GHG emissions from 2025 through 2030:
- Reduction in cumulative metric tons of GHG emissions from 2025 through 2050:
- GHG reduction measures in annual amount of CAP and/or HAP emissions in 2030:
- Reduction in annual amount of CAP and/or HAP emissions in low-income and disadvantaged communities in 2030.
- Improved indoor air quality from 2025 through 2030 – facilities report baseline and improved air quality.
- Enhanced resilience and reliability from 2025 through 2030 – facilities report fewer disruptions to operations.
- DOT&PF's capacity to provide technical assistance and support facility GHG emissions reductions is improved.

Performance Measures and Plan

Describe the proposed performance measures that will be the mechanism to track, measure, and report progress toward achieving the expected outputs and outcomes for each GHG reduction measure.

DOT&PF will utilize the following to track program toward outputs and outcomes.

- **Stakeholder Participation Metrics:** Establish benchmarks for sustained participation of historically excluded stakeholders, including metrics on the frequency and depth of their involvement in planning and decision-making processes.
- **Impact Metric Development:** Collaborative work with communities to establish and regularly update community-defined impact metrics, relative to local values and goals.
- **Positive Benefits Metrics:** Quantify and qualify positive benefits specifically for disadvantaged communities.
- **Quality of Documentation:** Assess the quality of documentation by examining factors such as completeness, accuracy, and timeliness. Ensure that documentation effectively communicates progress toward achieving expected results.
- **Effectiveness of Web-Based Assets:** Evaluate the usage and impact of web-based assets, considering factors such as user engagement, accessibility, and the ability of online forms and datasets to convey meaningful information.

Describe their plan for tracking and measuring progress toward achieving the expected outputs and outcomes established in Section 3.a of the workplan.

DOT&PF will participate in a coordinated approach led by the Alaska Municipal League (AML) as an extension of its current support to the Alaska Dept. of Environmental Conservation, which is administering the CPRG program. AML will work with DEC to establish a statewide tracking and reporting system for CRPG awardees to utilize. This system will include consistent timelines for reporting, a methodology that is consistent with the State's GHG emissions inventory, and a dashboard that provides reporting individually and cumulatively. This State-led effort not only complements EPA's activities but ensures a platform for long-term accountability and progress.

While targeted to meet the needs of CPRG and Tribal CPRG implementation awardees, the ability to report progress will be available to any state agency, or local or Tribal government, as aligned with measures described in Alaska's Priority (and eventually Comprehensive) Action Plan.

AML will work with DEC and awardees to establish a consistent and simplified reporting structure, which will be completed through an online portal that leads to progress demonstrated via a publicly available dashboard. Reporting will be based on the outputs and outcomes identified in each awardee's implementation plan and built to include both unique measures and those that are similar across projects.

DOT&PF expects a robust subrecipient monitoring process that will require timely reporting, with technical assistance provided by DOT&PF Facilities staff or partners. DOT&PF will implement a system of monitoring that is initiated through a baseline assessment that vets and downscales broadly available data, after which quarterly (depending on grant award terms) data is included and submitted for review and analysis.

DOT&PF will leverage the statewide reporting and monitoring effort led by DEC, through AML, such that subrecipient engagement is managed through a single entity across awards. This dedicated position will ensure consistency of data collection and alleviate any staff burden at DOT&PF. Ultimately, this process will mean that DOT&PF staff can focus on project and measure implementation, while support for monitoring is provided by a third party who then has the technical capacity and expertise to augment this line of effort.

Explain how the results of each GHG reduction measure will be evaluated, including details on the approach to quantify and disclose the actual GHG emission reductions and associated CAP and HAP changes (if applicable) accomplished by each GHG measure.
If awarded, DOT&PF will work with AML to complete more detailed emissions reduction estimates for each project included in this application. Based on these project-level estimates, DOT&PF will verify the effectiveness of measures in energy use and emissions reduction once projects have been completed and documentation of this reduction will be disclosed via the aforementioned reporting structure. To quantify and disclose reduction in criteria and hazardous air pollutants, DOT&PF and AML will employ emissions factor-based measurements and CAP remote sensing tools being deployed as part of the CCAP being developed by DEC.

For projects where DDC is a component, quantification and verification of emissions impact is especially important as our modeling was not able to reliably model DDC impacts as this depends on detailed usage data.

The project will evaluate the following metrics, to be collected per facility:
- Baseline electric usage and peak demand; and Baseline heating fuel consumption.
- Estimated reduction in electric and fuel consumption based on Audit recommendations.
- Estimated greenhouse gas emissions reduction.
- Cost savings if Audit recommendations are implemented; Actual Savings.

Authorities, Implementation Timeline, and Milestones

Describe the parties responsible for implementing each GHG reduction measure, including roles and responsibilities for each party, including sub-awardees (including other members of a coalition), contractors, and other entities, whose cooperation is necessary for success of the measures.

DOT&PF designs, constructs, operates, and maintains the state's transportation infrastructure systems, buildings, and other facilities used by Alaskans and visitors. The proposed measure would conduct energy audits, conduct condition assessments, and implement feasible energy efficiency upgrades at major State of Alaska facilities. It would also mean implementing already identified energy savings opportunities from other public assets, such as adjusting using LED streetlights on a portion of the state-owned Glenn Highway between Anchorage and the Mat-Su Borough. The majority of DOT&PF actions, in particular those that don't require energy audits, can be completed by the end of 2026.

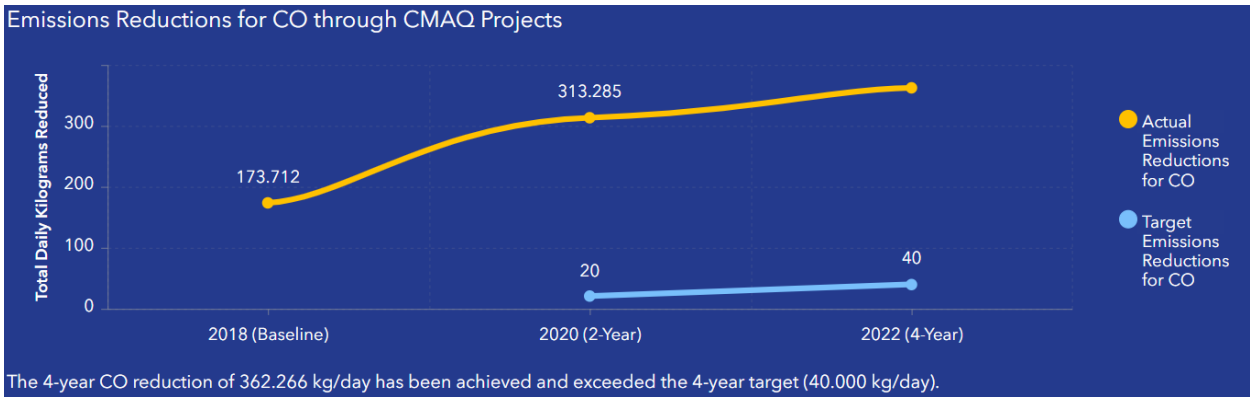
DOT&PF staff will participate in a statewide cohort of awardees, led by AML through DEC's CPRG planning and sustainability plan. Essentially, implementation plan awardees can choose to participate in quarterly calls where lessons learned are shared, challenges identified, and best practices introduced. This cohort approach will also identify additional partners that can complement implementation, including the Alaska Energy Authority (AEA), the Alaska Housing Finance Corporation (AHFC), and the University of Alaska.

Which party or parties have the authority to carry out each proposed measure or, in the case where they do not currently have authority, provide a clear plan and timeline to obtain it during the grant period.

DOT&PF is the prime applicant and has the authority to carry out proposed measures. DOT&PF will manage the overall program for successful implementation, including maintaining reporting, and overall financial management consistent with 2 CFR 200.

All other entities whose cooperation or participation is necessary for GHG reduction measure implementation.

DOT&PF will collaborate with the AML, a statewide nonprofit dedicated to strengthening local governments, but whose services have been extended to meet the needs of both state agencies and Tribes. This broader effort is focused on ensuring that Alaska can make the most of federal infrastructure investments, including through CPRG. AML's role will continue to be as a convener and facilitator of information sharing and working with all partners to help deliver community benefits and overcome barriers to implementation. AML is an eligible subrecipient, with strong governance and financial management systems in place.



Alaska DOT&PF track record implementing carbon reduction measures.

Detailed implementation timeline for each GHG reduction measure included in the application.

Project Schedule		Year 1				Year 2				Year 3				Year 4				Year 5			
	Activity/Milestone	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Procurement																				
1.1	Scoping and Stakeholder Engagement																				
1.2	RFP for Energy Savings Performance Contracting																				
1.3	Contractor selection and Contract Preparation																				
1.4	Notice to Proceed																				
2	Investment Grade Energy Audit																				
2.1	Investment Grade Energy Audit																				
2.2	Energy Services Proposal																				
2.3	Energy Efficiency Measure (EEM) selection																				
2.4	35% Design Documents																				
3	Implementation																				
3.1	Contract Negotiation/ Notice to Proceed																				
3.2	100% Design Documents																				
3.3	AHJ Plan Review and Permitting																				
3.4	Submittals/ Equipment Procurement																				
3.5	EEM Implementation - SOA Buildings																				
3.6	EEM Implementation - Fish Hatcheries																				
3.7	EEM Implementation - Street Lighting																				
4	Measurement and Verification (M&V)																				
4.1	Post Construction M&V Report																				
4.2	Data analysis and utilization																				
4.3	Ongoing M&V and Reporting																				
5	Reporting																				
5.1	Quarterly Status Update																				
5.2	Annual Report on Outputs and Outcomes																				
5.3	Final Project Evaluation and Scalability																				
5.4	Annual and Final Reporting Compliance																				

Section 4: Low-Income and Disadvantaged Communities

Community Benefits

Discuss and quantify, where possible, direct and indirect benefits and potential disbenefits to low-income and disadvantaged communities from the proposed GHG reduction measures

Disadvantaged communities will directly and indirectly benefit from the outcomes of the project activities. By inclusive engagement in project development, scoping, and implementation, disadvantaged communities will be exposed to learning opportunities that will enable them to improve current practices and policies. Upon completion, the projects will provide public health and safety benefits to communities.

DOT&PF will initiate a coordinated approach to identify and deliver benefits in communities where facilities are located, including tracking outcomes associated with:

(1) a decrease in energy burden – DOT&PF will experience lower total costs for providing power and/or heat to their public buildings.
(2) a decrease in environmental exposure and burdens – DOT&PF facilities will experience greater indoor air quality because of this project.
(3) an increase in access to low-cost capital – DOT&PF will leverage project funds to mobilize state, local, or other federal funds, as available.
(4) an increase in high-quality job creation and job training for individuals.
(5) increased parity in clean energy technology access and adoption – improvements in especially rural communities will increase the potential for investments in clean energy technology and adoption.
(6) an increase in energy resilience – DOT&PF recognizes this project as a contribution to the community's energy resilience.

Remote Alaskan communities have and will continue to lead in community-based renewable energy development, serving as an example for similar communities throughout the world. Many communities have excellent wind, solar, hydropower, or biomass resources waiting to be used. Sixty-nine Alaskan communities have so far integrated some form of renewable energy (McMahaon, et al, 2022), and between 2014 and 2018, 5,210 households in rural Alaska received building energy efficiency improvements to reduce overall energy demand (AHFC, 2018). A variety of funding sources and programs are available to support communities in the complex transition to renewable energy. Remote locations may be rich in renewable energy sources, but the intermittent nature makes their integration into the power grid a challenge.

Rural Alaska communities experience a range of cumulative environmental impacts that can significantly affect their way of life and well-being. These impacts are often interconnected and can result from various sources, including climate change, resource development, pollution, and changes in land and water use. The key cumulative environmental impacts experienced by rural Alaska communities are many and varied.

Alaska is one of the regions most affected by climate change. Rising temperatures lead to thawing permafrost, coastal erosion, and increased wildfire risks. These changes can damage infrastructure, threaten traditional food sources, and lead to loss of land and homes. Air and water pollution can negatively impact human health and the environment. Substances like heavy metals and persistent organic pollutants can bioaccumulate in the food chain, affecting traditional foods and posing health risks to communities. Aging infrastructure in remote communities can be further

strained by environmental impacts. Thawing permafrost can lead to uneven ground and damage to roads, buildings, and other infrastructure. The cultural and spiritual significance of the environment in Alaska is deeply intertwined with the well-being of its residents. Cumulative impacts can lead to stress, anxiety, and a sense of loss as communities witness the transformation of their surroundings. Rural communities often have economies closely tied to the environment. Cumulative impacts can disrupt traditional livelihoods and force residents to adapt to new economic realities.

Improved energy efficiency in rural public buildings can bring about several significant environmental benefits. These benefits extend beyond just energy and resource conservation; they also contribute to broader environmental goals and sustainability efforts. DOT&PF anticipates environmental benefits that includes:

- Energy efficiency measures, such as better insulation, efficient lighting, and heating/cooling systems, can lower the amount of energy consumed by public buildings.
- Improved energy efficiency reduces the overall energy consumption of public buildings.
- Energy-efficient buildings typically rely on cleaner energy sources or more efficient combustion processes.
- Energy efficiency measures often involve optimizing water usage through efficient plumbing systems and appliances.
- Energy-efficient lighting systems, such as LED lights with smart controls, can help reduce light pollution.
- Reduced energy consumption translates to decreased demand for energy production facilities.
- Energy-efficient buildings can be better candidates for integrating renewable energy sources like solar panels or wind turbines.
- Implementing energy efficiency measures in rural public buildings can also raise awareness and educate the local community about the importance of sustainable practices.
- Investing in energy efficiency upgrades now can have long-term positive effects by reducing the overall ecological footprint of public buildings, promoting sustainable development, and setting an example for future construction and renovation projects.

By embracing energy efficiency in rural public buildings, this project will help protect the environment, improve local quality of life, and contribute to global sustainability efforts.

Addressing these cumulative environmental impacts requires a multifaceted approach that involves collaboration among local communities, governments, researchers, and organizations. It involves strategies to mitigate the impacts of climate change, support community resilience, promote sustainable resource management, and respect the cultural values and knowledge of Alaska's indigenous populations.

The project's planned equity assessment will first develop a schedule, plan the level of effort, and identify a team. USDA Rural Development has data identifying Distressed Energy Communities, which cover a large swath of Alaska. These are regions that will benefit most from energy efficiency and conservation projects. The project will use EPA's EJScreen, as well as DOE's EnergyJustice screening tools to evaluate project implementation and strategies.

This scoping process will then move through a cumulative and iterative process to 1) Describe the selected program, policy, or process, and populations affected by it; 2) Consider historical, societal, and policy context and drivers of disparities; 3) Collect expert input, including from affected community members; 4) Identify information sources and gaps; 5) Analyze policy/program effects—potential or current—on people and communities; and 6) Plan for action and

accountability. The project's equity assessment will ensure that the benefits of the project accrue to participating and disadvantaged communities.

An equity assessment will include a review of available datasets to ensure the distribution of 40% of project benefits to disadvantaged communities and to structure ways in which project sponsors and contractors can implement strategies that maximize equitable benefits.

Thoroughly describe any anticipated negative impacts to low-income and disadvantaged communities and concrete strategies for mitigating those risks.

DOT&PF does not anticipate any negative impacts of this project. Increased awareness of GHG emissions may result in increased awareness of gaps or facilities challenges, and the corresponding need for resources, which may not be readily available. DOT&PF will pay particular attention to the potential for needs identification by facilities outside the scope of this implementation project and develop a strategic plan to ensure equitable outcomes for all over time. DOT&PF will coordinate with local utilities as to the extent that energy efficiency results in reductions to the base load, which will need to be planned for or accommodated.

List CEJST Census tract IDs or EPAs EJScreen Census block group IDs for areas that may be affected by GHG reduction measures.

Facility	Community	CEJST Census Tract Number (2010 Census)	EJ Screen Census Tract Number (2020 Census)	CEJST Disadvantaged
Adak Maintenance Facilities	Adak	2016000100	2016000100	Partially
Akutan Maintenance Facilities	Akutan	2016000100	2016000100	Partially
Cold Bay Maintenance Facilities	Cold Bay	2016000100	2016000100	Partially
Dutch Harbor Maintenance Facilities	Unalaska	2016000100	2016000100	Partially
State Surplus Warehouse	Anchorage	2020000600	2020000601	Yes
Geological Materials Center	Anchorage	2020000901	2020000901	Yes
Robert B. Atwood Building	Anchorage	2020001100	2020001100	Yes
Linny Pacillo Parking Garage	Anchorage	2020001100	2020001100	Yes
King Salmon Maintenance Facilities	King Salmon	2060000100	2060000100	No
Haines Maintenance Facilities	Haines	2100000100	2100000100	No
Gustavus Maintenance Facilities	Gustavus	2105000300	2105000400	Partially
Ketchikan Maintenance Facilities	Ketchikan	2130000200	2130000200	No
Palmer State Office Building	Palmer	2170001201	2170001201	No
Petersburg Maintenance Facilities	Petersburg	2195000200	2195000200	No
Skagway Maintenance Facilities	Skagway	2230000100	2230000100	No
Wrangell Maintenance Facilities	Wrangell	2275000300	2275000300	Yes
Yakutat Maintenance Facilities	Yakutat	2282000100	2282000100	Yes
Galena Maintenance Station	Galena	2290000300	2290000300	Yes

Describe plan and process for continuing to assess, quantify and report a more thorough quantitative analysis of associated community benefits, including co-pollutant (CAP and HAP) emission reductions.
DOT&PF will work closely with Alaska DEC as part of its comprehensive planning process for CPRG and participate in data acquisition and sharing throughout the four-year timespan that includes DEC's monitoring and reporting. DEC is committed to sustaining these efforts, which means that its GHG Emissions Inventory will continue to serve as a base for data management and visualization. DOT&PF will contribute to this process for downscaled data that is consistent with DEC's methodology for collection and sharing.

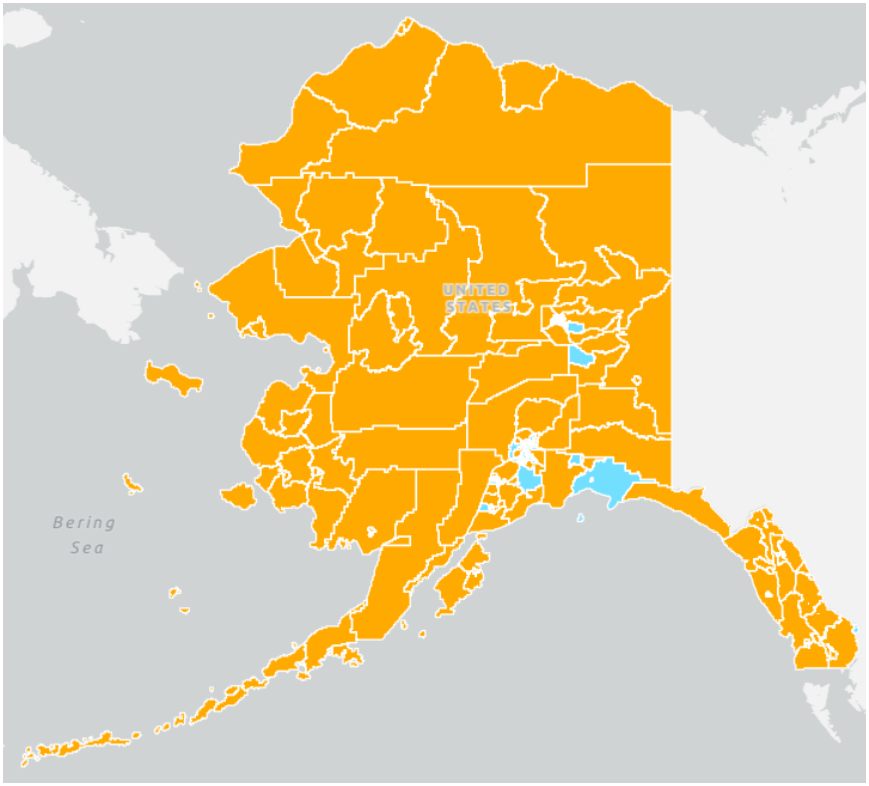


FIGURE 1: EPA IRA Disadvantaged Communities (CEJST and EJScreen)

High-quality workforce development activities tied to a proposed measure that benefit individuals in low-income and disadvantaged communities. Workforce development can be a community benefit through its creation of equitable career pathways and training opportunities.
DOT&PF will participate in the statewide workforce development activities organized by the Alaska Municipal League (AML) for applicants to CPRG implementation grants. This program provides a pathway for DOT&PF to leverage existing but coordinated recruitment and retention resources, as well as skills development.

Funding will be available to provide opportunities for:

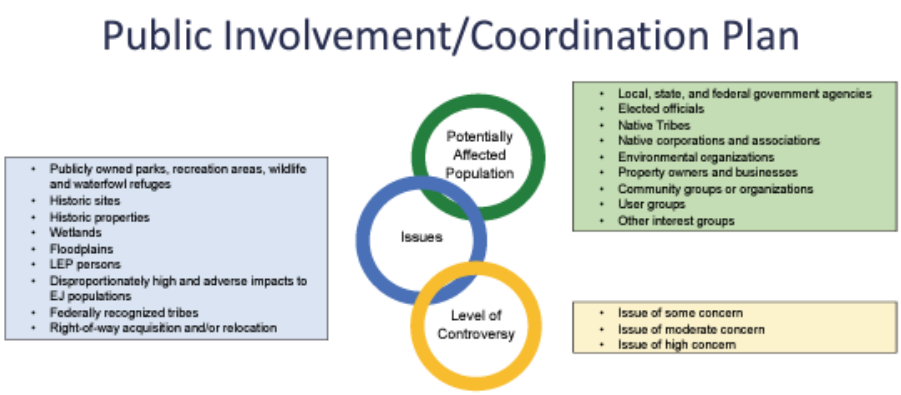
- **Recruitment** – AML's partnership with the Associated General Contractors includes the ability for projects to participate in AGC's *We Build Alaska* public outreach campaign, which can geofence social media messaging.
- **Skills Development** – AML works with the Alaska Safety Alliance, Alaska Works Partnership, University of Alaska, and Alaska AFL-CIO to identify appropriate workforce training opportunities. As DOT&PF identifies workforce needs, including the need for reskilling, they can access any of these partnerships.
- **Career Navigation** – AML will coordinate with DOL&WD for access to Alaska Job Centers, as well as through AFL-CIO and other programs, to support project workforce career navigation, including pathways for certification, apprenticeship, and degree programs.

- **Wraparound Services** – AML works closely with multiple partners who have mechanisms in place to facilitate childcare, housing, and housing stipends for staff and contractors, especially in conjunction with infrastructure investments across Alaska.

Community Engagement

Explain how input from low-income and disadvantaged communities was incorporated into the application.

To help facilitate a more collaborative statewide transportation planning effort, DOT&PF has established a Regional Planning Organization (RPO) Pilot Program. Communities from around the state are encouraged to participate in this new opportunity that allows them to have a formal seat at the statewide transportation planning table. RPOs help guide transportation planning decisions throughout the state. RPOs work within their local communities to fine-tune transportation planning to meet the needs of local stakeholders. Participants in the RPO Pilot Program will advocate for transportation issues they deem important in their region, help draft long-range transportation plans, establish a formal channel of communication with DOT&PF, and ensure the public remains engaged throughout the process.



DOT&PF has a robust Public Involvement Plan (2014) as part of its Alaska Highway Preconstruction Manual and its 2020 Environmental Procedures Manual includes a Public and Agency Involvement Plan that is effective. DOT&PF will work in close collaboration with community and regional stakeholders to ensure that the projects do not lead to burdens on disadvantaged communities and increase benefits. A robust public participation plan and stakeholder engagement process will focus on disadvantaged communities, including working with local and tribal governments to identify and hear from the most vulnerable populations in each community.

Describe how meaningful engagement with low-income and disadvantaged communities will be continuously included in the implementation of the GHG reduction measures.

DOT&PF believes that meaningful engagement with low-income and disadvantaged communities is essential for ensuring equity and inclusivity in the implementation of greenhouse gas (GHG) reduction measures. A good approach involves establishing transparent and participatory processes that prioritize community input, collaboration, and empowerment. This can include holding regular meetings, workshops, or focus groups to solicit feedback, concerns, and ideas from community members. Additionally, DOT&PF will actively seek out representatives from diverse socioeconomic backgrounds to serve on advisory boards or task forces dedicated to sustainability initiatives, ensuring that the voices of marginalized communities are heard and respected. Furthermore, efforts should be made to provide accessible information and resources in multiple languages and formats, making it easier for all residents to engage in the decision-making process.

DOT&PF will participate in DEC's development of Alaska's Comprehensive Climate Action Plan (CCAP), including currently planned activities.

- CCAP Strategic Planning Meetings - At the Infrastructure Development Symposium in April 2024, a half or full-day discussion will review the PSEAP and discuss the comprehensive planning process to get stakeholder buy-in and help inform the process going forward. The audience will at a minimum include representative state, municipal, and tribal government leaders. Following this and as early as late 2024, there will be regular stakeholder check-in meetings to review progress on the CSEAP with these leaders.
- CCAP Emissions Sector Workshops - From August 2024 to May 2025, AML, DEC, and relevant partners will organize charette-style workshops that bring together interested stakeholders to produce workshop reports that will form the basis of the CSEAP. Informed by map tool resources produced as a continuation of GHG Inventory work with Constellation, and with technical expertise from partners, these workshops will look more deeply at the potential for emissions reduction in each sector.

Current plans call for sector workshops addressing emissions reduction and co-benefits in the following emissions sectors: residential, non-residential, agriculture/land management, solid waste, wastewater, rural energy, Railbelt energy, industrial, land & air transportation, maritime, and carbon capture, use, and sequestration. As an outcome of the workshops, the planning team will identify interested participants for sector-level working groups that include relevant stakeholders and will help inform further development of the CCAP. Throughout sector workshops, there will be complimentary work with workforce contractors to support the workforce planning analysis.

Applicants should specify how they plan to ensure early and consistent inclusion of various linguistic, cultural, institutional, geographic, and other perspectives throughout project development and implementation.

DOT&PF will conduct training for facilities staff and project managers to reference and build into project development and implementation the need for and methods by which districts can include linguistic, cultural, institutional, geographic, and other perspectives. DOT&PF is well-versed in all applicable Federal requirements including but not limited to NEPA, Title VI, ADA regulations, and Civil Rights requirements, which informs its approach to early and consistent inclusion of diverse perspectives throughout project development and implementation.

Section 5: Job Quality

This project positively contributes to economic competitiveness and job creation outcomes. Alaska sets its minimum rates of pay for DOT&PF projects above David-Bacon wage rates, creating a level playing field for all employees to enjoy high-paying jobs on both federal and nonfederal construction projects. This project will support the hiring and retention of historically underrepresented groups of workers. DOT&PF has robust internal equity practices including an Equal Employment Opportunity Plan (2022), a vibrant Disadvantaged Business Enterprise (DBE) Program, and a DBE Utilization Goal of 8.28% for federally funded projects, which has traditionally been exceeded.

DOT&PF's approach to quality jobs means that project staff will have (1) fair, transparent, and equitable pay that exceeds the local average wage for industry while delivering; (2) basic benefits (e.g., paid leave, health insurance, retirement/savings plan); (3) providing workers with an environment in which to have a collective voice; and (4) helps the employee develop the skills and

experiences necessary to advance along a career path. In addition, the partners will offer good jobs that provide (5) predictable scheduling, and a safe, healthy, and accessible workplace devoid of hostility and harassment. With good jobs, (6) employees are properly classified with the limited use of independent contractors and temporary workers. Workers have a (7) statutorily protected right to a free and fair choice to join a union under the National Labor Relations Act (NLRA).

As a resource, DOT&PF will refer to overall PCAP related to workforce development, which includes the State's strategy to strengthen and cultivate a workforce capable of implementing the array of GHG reduction measures outlined within the plan to include the following:

1. Establish and cultivate increased coordinative capacity within and between the workforce and relevant sectors. This implementation strategy will support career pathways through a diverse network of training providers.
2. Expand outreach efforts to underserved and disadvantaged areas with high unemployment and underemployment. This implementation strategy will provide funding for statewide and targeted outreach efforts.
3. Increase capacity of existing place-based training programs for upskilling and reskilling Alaskans for employment in high-demand industries, implemented by prioritized regions. Alaska has numerous existing training programs and facilities that have the potential to meet the training needs of Alaskans but lack the capacity to meet the demand.
4. Identify and deliver new or improved rural place-based training to underserved areas for upskilling and reskilling Alaskans for employment in high-demand industries, implemented by prioritized region and sector. This implementation strategy will focus on adding new place-based training and support systems to prioritized regions, including delivering remote training as necessary.
5. Provide wraparound support services. Implementation efforts should provide support for workers entering training programs, including housing and childcare, travel, and supplies that alleviate the challenges identified by worker voices.
6. Strengthen economic development and the contractor ecosystem. This implementation strategy will include maintaining and cultivating partnerships with Alaska SBDC and regional development organizations (ARDORs).

Section 6: Programmatic Capability and Past Performance

Past Performance

Alaska DOT&PF will be responsible for delivering this project. DOT&PF has directly designed or managed consultant designs and conducted numerous refurbishments, replacements, repairs, and maintenance on all State-owned roads and facilities. Most of these projects utilized federal aid, demonstrating extensive experience with federal funding and successful grant and project management. DOT&PF will implement activities consistent with U.S. provisions of Build America Buy America, American Disabilities Act, Davis Bacon, etc. DOT&PF ensures full compliance with Title VI of the Civil Rights Act and accompanying DOT regulations, implementing the 2023 Title VI Nondiscrimination Program Plan. DOT&PF follows the Disadvantaged Business Enterprise Program Plan and has an overall DBE goal of 9.39% to be accomplished entirely through race-neutral means.

1. Project Title: Statewide Transit Study
Funding Agency: FTA; CFDA 20.505
Project Description: The Alaska Department of Transportation and Public Facilities received funding to conduct a statewide transit study that assesses transportation needs statewide, with a focus on small, tribal, and disadvantaged communities. The assessment will list barriers to access and recommend solutions to reconnect communities and will identify capital projects alongside equity considerations.

2. Project Title: Parks Highway Fish Passage Improvement Plan
Funding Agency: FHWA; CFDA 20.205
Project Description: The project will replace three culvert sites with bridges and will replace nine sites with appropriate fish passage structures on the Parks Highway in the Susitna River Basin. The completed project would open 51.5 miles of barrier-free upstream anadromous habitat and nearly 420 acres of lake habitat.

3. Project Title: Alaska Rural Remote Operations Workplan (ARROW)
Funding Agency: USDOT; CFDA 20.941
Project Description: This project uses drone technology to conduct infrastructure inspections and gather situational awareness data essential to Rural Alaska's way of life on snow, ice, and over-land trails, partnering with Alaska Native and Rural Villages.

4. Project Title: Cold Bay Failing Dock Infrastructure Replacement
Funding Agency: MARAD; CFDA 20.823
Project Description: This project will include the design, permitting, and construction of a new dock in Cold Bay, Alaska to replace the community's only existing dock, which is nearing the end of its useful service life. The new dock will be designed and built to accommodate commercial use, freight and fuel transportation, private vessel use, and public uses like emergency medical services and public transportation through the Alaska Marine Highway System.

5. Project Title: AMHS Low/No Emission Shuttle Ferry
Funding Agency: FTA; CFDA 20.532
Project Description: This project will build an electric ferry that will improve transportation to rural port communities while reducing emissions and improving the sustainability of the Alaska ferry system. The Alaska Marine Highway System provides year-round transportation for passengers and vehicles between 35 Alaskan coastal communities, which helps Alaskans access jobs, schools, doctors, and other essential services.

Reporting Requirements

Alaska DOT&PF will be responsible for delivering this project. DOT&PF has directly designed or managed consultant designs and conducted numerous refurbishments, replacements, repairs, and maintenance on all State-owned roads and facilities. Most of these projects utilized federal aid, demonstrating extensive experience with federal funding and successful grant and project management.

DOT&PF has a history of meeting reporting requirements for all federal discretionary grants. Interim and/or final reports are made in a timely manner and meet the expectations and expected outcomes under their agreements.

Staff Expertise

Alaska DOT&PF's Division of Facilities Services will manage the project. Key staff from the Statewide Public Facilities (Design & Construction) Energy Office have been identified as key personnel. Statewide Public Facilities provides responsive services for constructing safe,

energy-efficient, and cost-effective projects, with a total project portfolio of approximately $420M. The Energy Office manages the implementation of energy efficiency retrofits to serve DOT&PF and State Agencies through Energy Savings Performance Projects. Energy Efficiency projects have been completed in over 79 state public facilities, achieving a combined energy cost savings greater than $4.7M per year. The Energy Office continues to develop and implement further energy efficiency projects for DOT&PF and our State public buildings. The contracting and project management of energy efficiency measures is one of the core functions of the division.

Christopher Hodgin, Chief of Statewide Public Facilities, Alaska DOT&PF
- Chief Engineer and Contracting Officer for Statewide Public Facilities, with a total project portfolio of approximately $420M.
- Program Manager for the Department's Energy Efficiency Program - successfully implementing over $35M in energy efficiency projects statewide as well as providing education and outreach to internal and public stakeholders.
- Responsible for annual legislative reports and testimony on DOT&PF energy efficiency progress toward meeting goals of the Alaska Sustainable Energy Act.
- 25+ years of facilities engineering-related experience.
- Professional Licenses & Certifications:
  - Professional Mechanical Engineer (P.E.) - AK License No. AELM11233
  - PMI Project Management Professional (PMP) – PMP No. 2211096
  - Lean Six Sigma Certified Black Belt
  - Association of Energy Engineers Certified Energy Manager (CEM) No. 19699
  - Association of Energy Engineers Certified Demand Side Energy Manager (CDSM)
  - CSI Certified Construction Contract Administrator (CCCA)
  - US Green Building Council LEED-Accredited Professional (Existing Buildings)

Jesse Campbell, Team Lead/ Senior Project Manager, Statewide Public Facilities, Alaska DOT&PF
- Engineering Team Lead and Senior Project Manager (Engineer/Architect) for Statewide Public Facilities, including the Energy Efficiency Program.
- Responsible for supervising a team of Project Managers and Engineering Staff, managing and administrating a diverse portfolio of multi-million-dollar vertical construction projects through all phases; current portfolio of approximately $100M - $250M.
- 25+ years of facilities engineering-related experience.
- Professional Licenses & Certifications:
  - Professional Mechanical Engineer (P.E.) - AK License No. AELM11123

Eric Hershey, Team Lead/ Senior Project Manager, Statewide Public Facilities, Alaska DOT&PF
- Engineering Team Lead and Senior Project Manager (Engineer/Architect) for Statewide Public Facilities, including the Energy Efficiency Program.
- Responsible for supervising a team of Project Managers and Engineering Staff, managing and administrating a diverse portfolio of multi-million-dollar vertical construction projects through all phases; current portfolio of approximately $100M - $250M.
- 17+ years of facilities engineering-related experience.
- Professional Licenses & Certifications:
  - Professional Mechanical Engineer (P.E.) - AK License No. AELM14688
  - PMI Project Management Professional (PMP) – PMP No. 1626250
  - Lean Six Sigma Certified Black Belt
  - Association of Energy Engineers Certified Energy Manager (CEM) No. 25337