Mapping and Capturing the Gaps:

Inventory and Assessment of Critical Energy Infrastructure in Rural Alaska

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ALASKA ENERGY AUTHORITY

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AEA maintains critical Rural Energy Infrastructure, upgrades fuel storage systems, and supports power generation and distribution in remote communities. Their work, including emergency support and training, helps keep the lights on and improves quality of life across rural Alaska.

AEA Rural Energy Programs

- Rural Power Systems Upgrade & Distribution
- Bulk Fuel Upgrades
- Circuit Riders

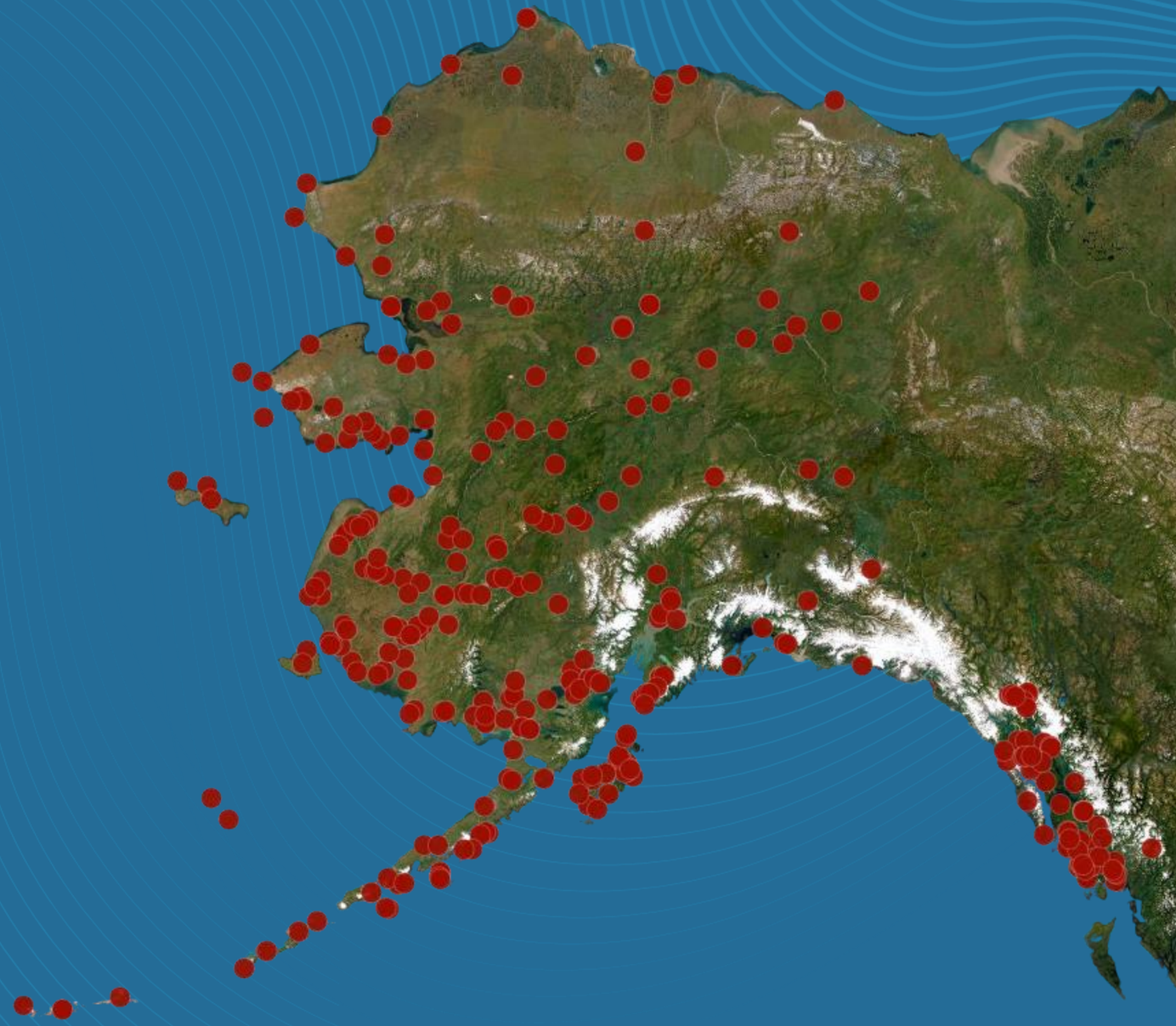

RURAL ENERGY INFRASTRUCTURE

A typical community may have individual bulk fuel facilities belonging to a school, utility, native corporation, or other local entity.

Sometimes tank farms are stand-alone operations, others are co-located.

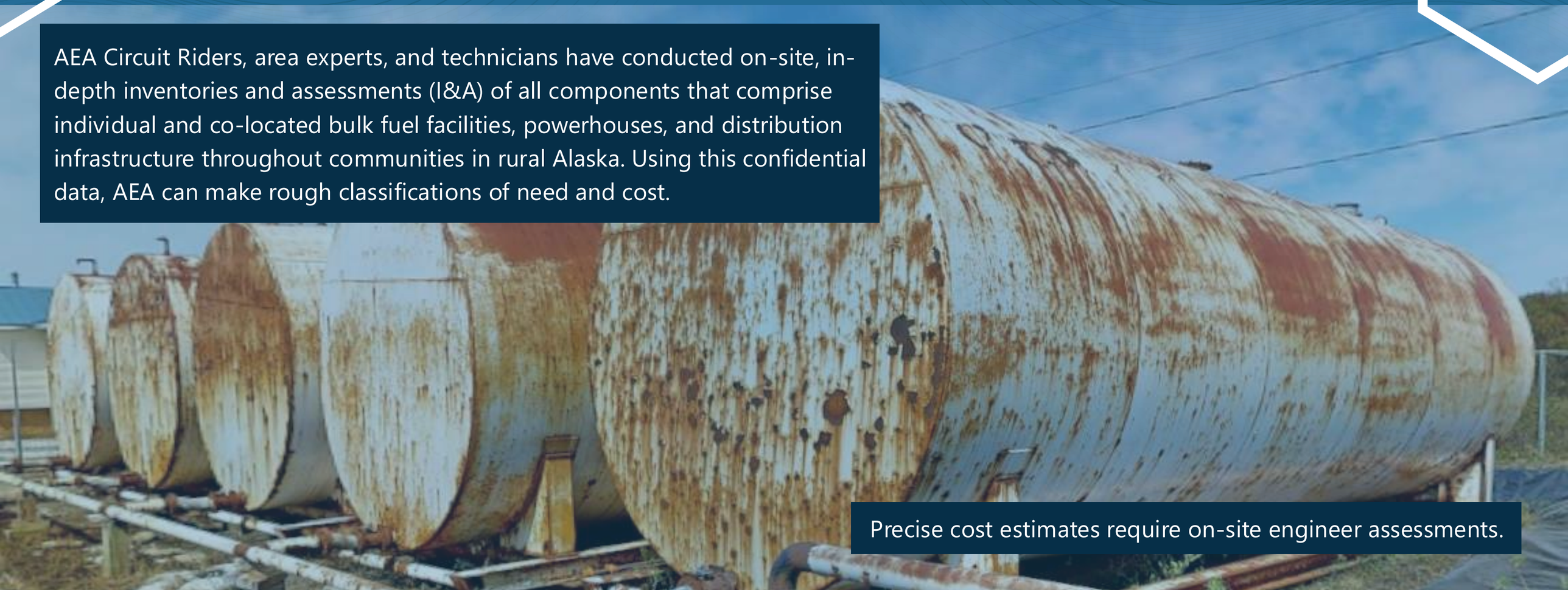
Diesel fuel is essential for power generation, heating and transportation throughout rural, roadless Alaska.

Most communities rely on fuel delivery by barge or air, once or maybe twice a year. It is typical for a rural Alaska community to have individual bulk fuel facilities belonging to a school, utility, native corporation, or other local entity. The typical useful lifecycle for a bulk fuel facility in the extreme conditions of Alaska is 20-25 years.



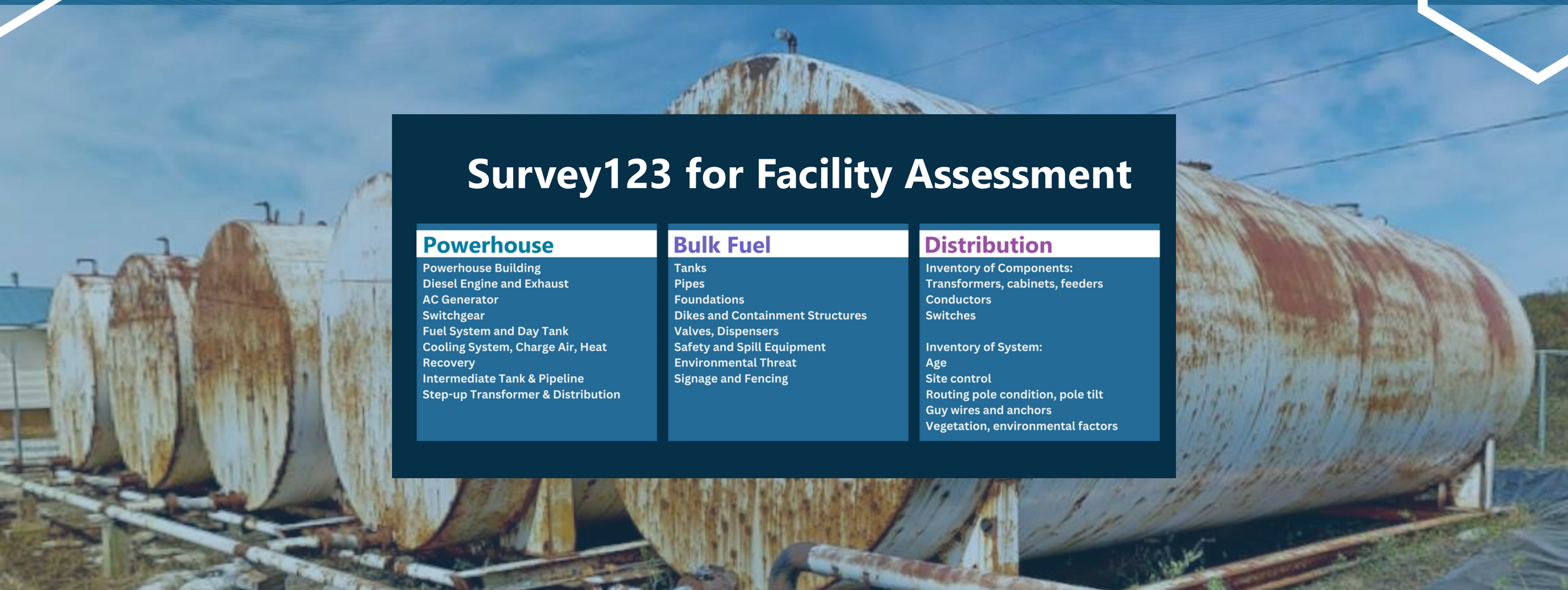
FACILITY AND COMPONENT EVALUATION

AEA Circuit Riders, area experts, and technicians have conducted on-site, in-depth inventories and assessments (I&A) of all components that comprise individual and co-located bulk fuel facilities, powerhouses, and distribution infrastructure throughout communities in rural Alaska. Using this confidential data, AEA can make rough classifications of need and cost.



Precise cost estimates require on-site engineer assessments.

FACILITY AND COMPONENT EVALUATION



Survey123 for Facility Assessment

Powerhouse

Powerhouse Building
Diesel Engine and Exhaust
AC Generator
Switchgear
Fuel System and Day Tank
Cooling System, Charge Air, Heat Recovery
Intermediate Tank & Pipeline
Step-up Transformer & Distribution

Bulk Fuel

Tanks
Pipes
Foundations
Dikes and Containment Structures
Valves, Dispensers
Safety and Spill Equipment
Environmental Threat
Signage and Fencing

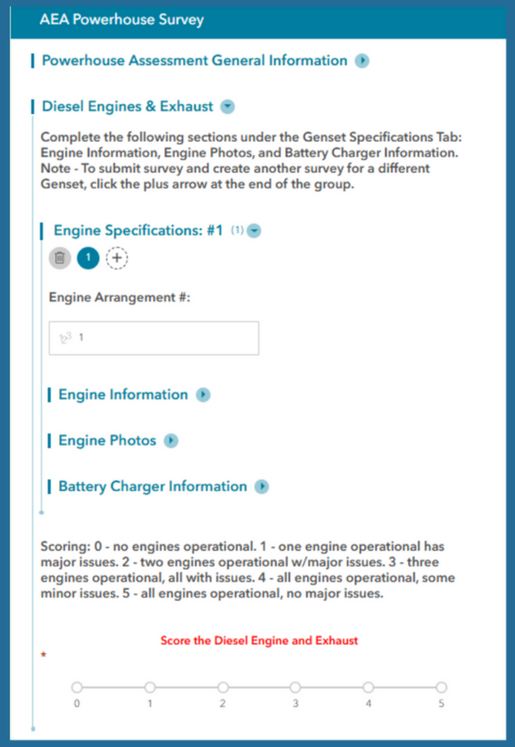
Distribution

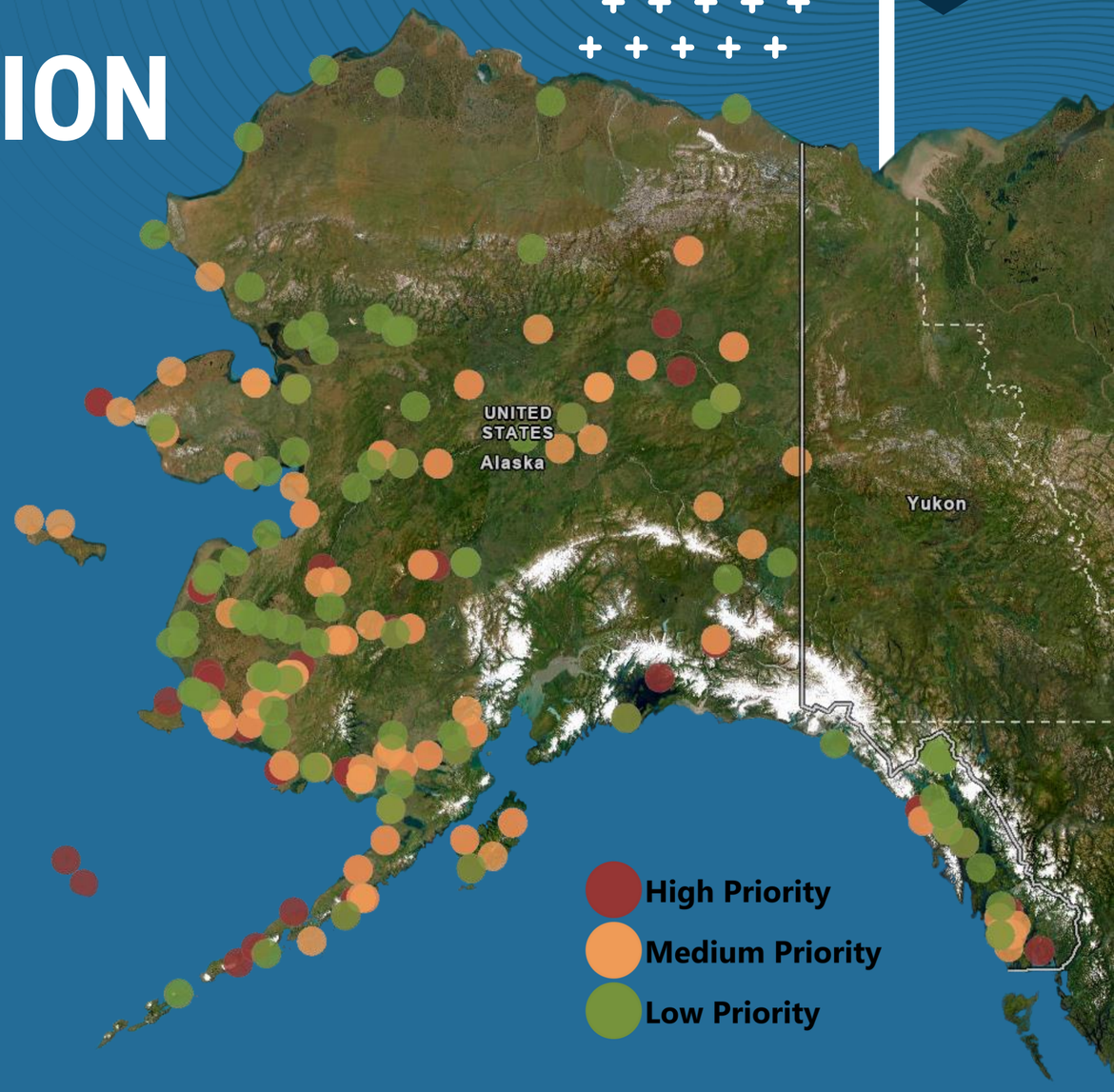
Inventory of Components:
Transformers, cabinets, feeders
Conductors
Switches

Inventory of System:
Age
Site control
Routing pole condition, pole tilt
Guy wires and anchors
Vegetation, environmental factors

FACILITY AND COMPONENT EVALUATION

POWERHOUSE ASSESSMENT





FACILITY AND COMPONENT EVALUATION

BULK FUEL ASSESSMENT

Bulk Fuel Assessment

General

Inspection

Community

Name of Facility

Age of Tank Farm

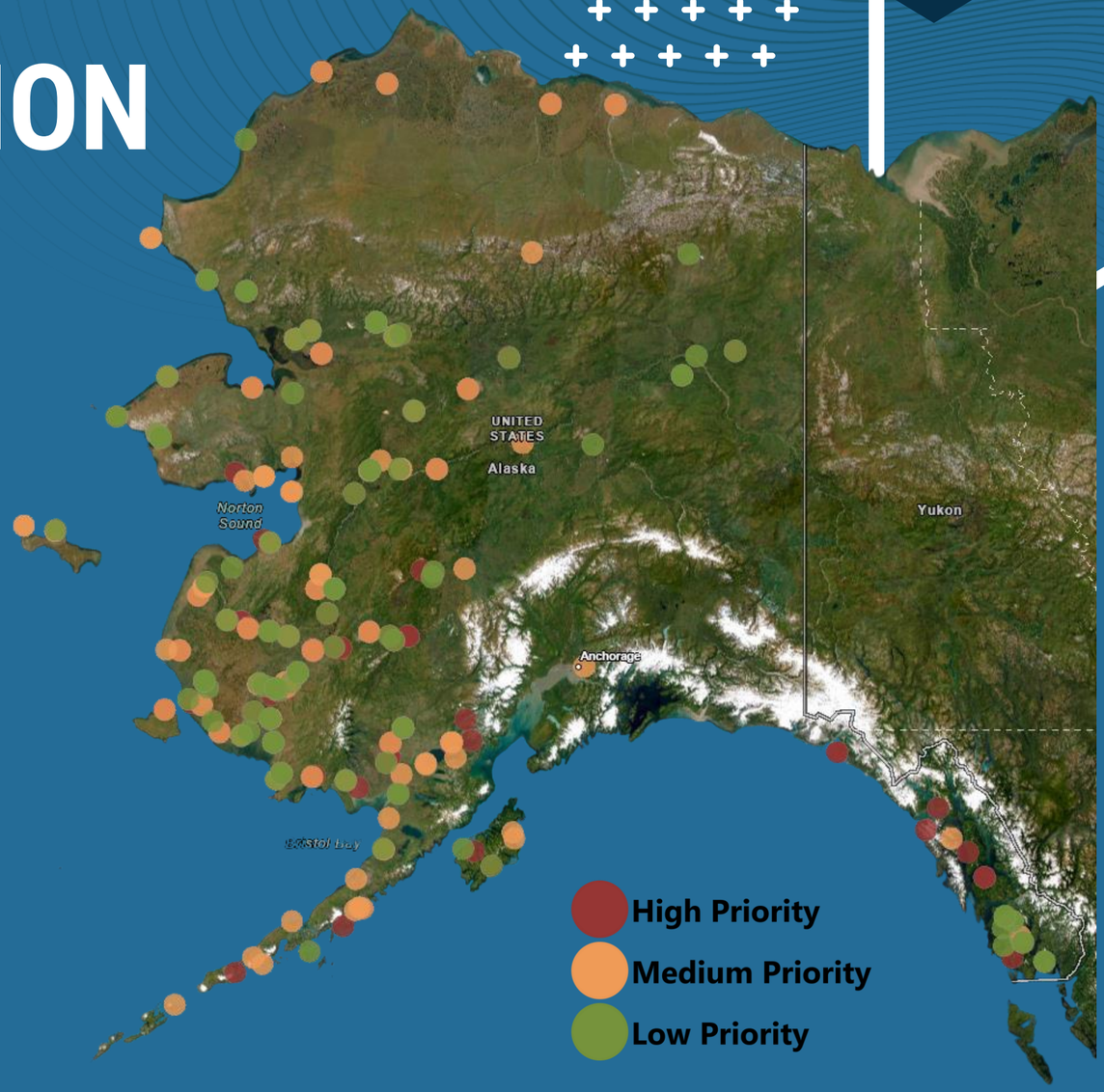
AEA Tank Farm ID

USCG Tank Farm ID

AST ID

Facility Owner

Fuel Supplier



FACILITY AND COMPONENT EVALUATION

DISTRIBUTION ASSESSMENT

Distribution Assessment

Distribution System

Community*

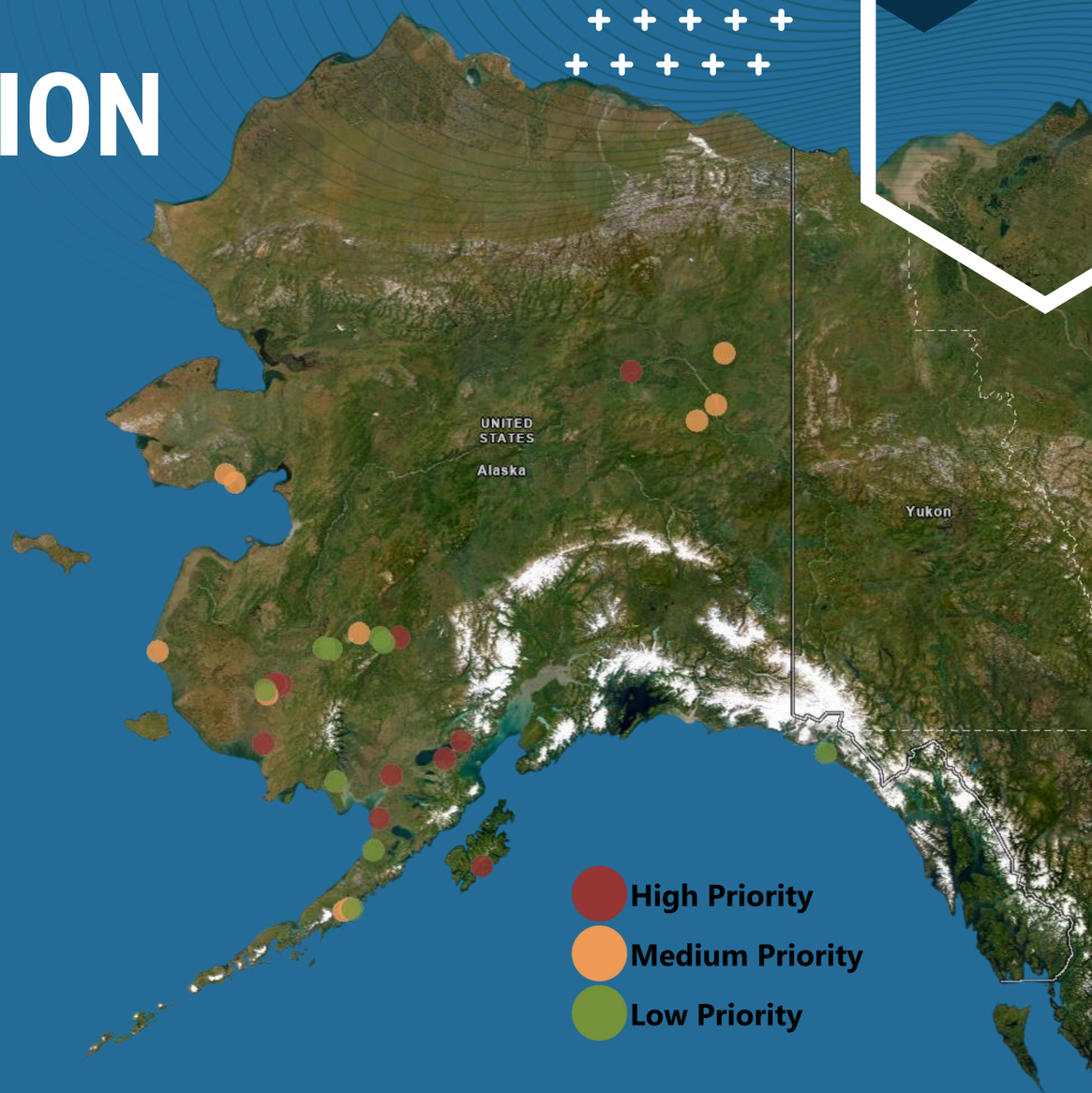
Utility Name

Operator Name

Operator Email

Operator Phone Number

Utility Manager Name



IMAGING FOR INFRASTRUCTURE ASSESSMENT

Bulk Fuel 3D WebScene

Savoonga City Tanks

Distribution Drone Footage

White Mountain Distribution

Bulk Fuel 3D Imagery

Tank Farm Walk-Through

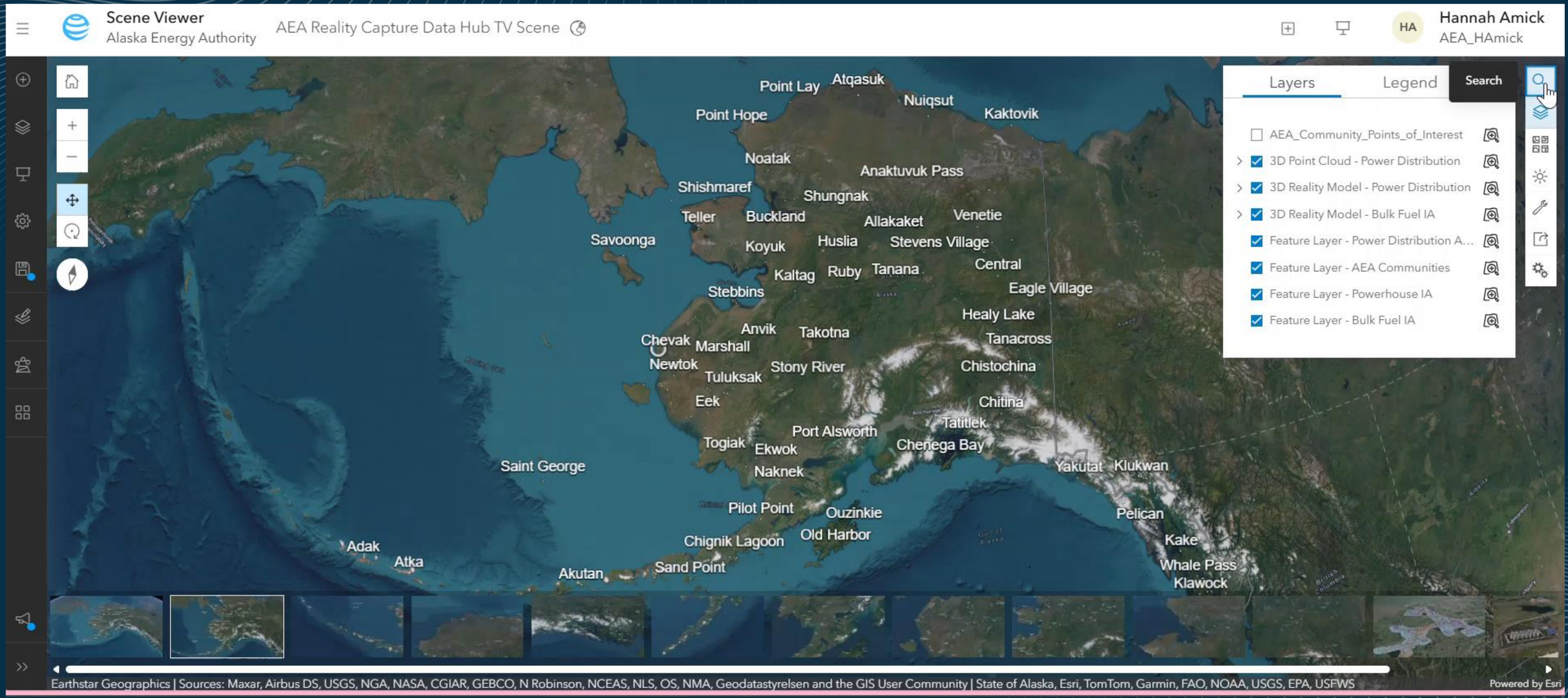
Powerhouse 3D Imagery

Operations & Manual Conversion

Powerhouse 3D Imagery

Powerhouse Walk-Through

AEA Reality Capture Data Hub



DENALI COMMISSION DUAL USE CASE

An estimated $225 million is required to ensure the bulk fuel facilities holding 23 million gallons of fuel on the West Coast of Alaska can safely serve community energy needs.

Quick, remote access to facility conditions

Efficient analysis of facilities and creation of deliverables

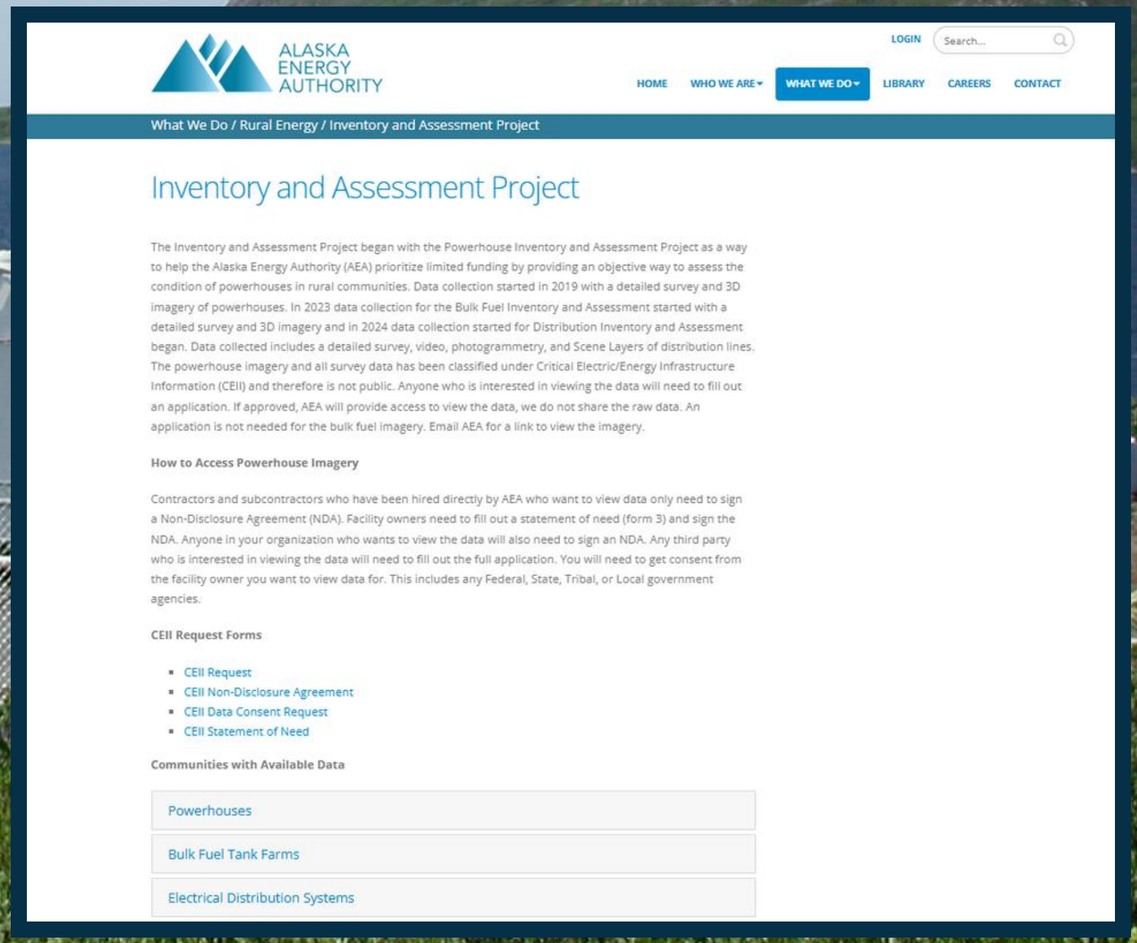
ACCESSING ENERGY INFRASTRUCTURE DATA

Powerhouse Imagery and Survey Data

Requires application and NDA on AEA website

Bulk Fuel 3D Imagery and Distribution Footage

Reach out to AEA for link info@akenergyauthority.org



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What We Do / Rural Energy / Inventory and Assessment Project

Inventory and Assessment Project

The Inventory and Assessment Project began with the Powerhouse Inventory and Assessment Project as a way to help the Alaska Energy Authority (AEA) prioritize limited funding by providing an objective way to assess the condition of powerhouses in rural communities. Data collection started in 2019 with a detailed survey and 3D imagery of powerhouses. In 2023 data collection for the Bulk Fuel Inventory and Assessment started with a detailed survey and 3D imagery and in 2024 data collection started for Distribution Inventory and Assessment began. Data collected includes a detailed survey, video, photogrammetry, and Scene Layers of distribution lines. The powerhouse imagery and all survey data has been classified under Critical Electric/Energy Infrastructure Information (CEII) and therefore is not public. Anyone who is interested in viewing the data will need to fill out an application. If approved, AEA will provide access to view the data, we do not share the raw data. An application is not needed for the bulk fuel imagery. Email AEA for a link to view the imagery.

How to Access Powerhouse Imagery

Contractors and subcontractors who have been hired directly by AEA who want to view data only need to sign a Non-Disclosure Agreement (NDA). Facility owners need to fill out a statement of need (form 3) and sign the NDA. Anyone in your organization who wants to view the data will also need to sign an NDA. Any third party who is interested in viewing the data will need to fill out the full application. You will need to get consent from the facility owner you want to view data for. This includes any Federal, State, Tribal, or Local government agencies.

CEII Request Forms

- CEII Request
- CEII Non-Disclosure Agreement
- CEII Data Consent Request
- CEII Statement of Need

Communities with Available Data

Powerhouses

Bulk Fuel Tank Farms

Electrical Distribution Systems

THANK YOU

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GET IN TOUCH

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